Inequality Grows in Silence: The Impact of Newspaper Closures on CEO-Worker Pay Disparity [†]

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Abstract

Addressing income inequality is crucial for ensuring equitable and prosperous societies. This study examines the impact of local press on intra-firm pay disparity. By utilizing the recently mandated disclosures of CEO-worker pay ratios and analyzing the staggered shutdown of local newspapers, we find that firms' pay disparity increases by 15.3% following newspaper closures. Further analysis suggests that this post-closure increase in pay ratio is unlikely to be driven by either of its components alone or underlying economic conditions, but rather by reduced reputational concerns. Overall, our findings provide insights into the role played by local newspapers in monitoring pay disparity.

JEL classification: G38, J31, M12; L82

Keywords: CEO-worker pay disparity, pay ratio, local newspapers, press coverage

[†]We thank Su Fang, Mingyi Li, Qihang Liu, Han Yan, Jian Zhang, and Tianjie Zhuang for their excellent research assistance. We are responsible for all errors and omissions.

1. Introduction

Corporations play a crucial role in shaping society's economic landscape while frequently facing public scrutiny for their practices and policies, with the issue of pay disparity within firms being a particular aspect of corporate conduct that has gained increasing attention in recent years (Pan et al., 2022). Top executives' soaring compensation contrasted with the stagnant wages of rank-and-file employees has sparked considerable debate and public concern. This spotlight on within-firm pay disparity is closely intertwined with the broader challenge of rising income inequality, making it a subject of interest for academics, policymakers, and the general public alike (Piketty, 2014; Song et al., 2019).

Amidst this backdrop, the newspaper industry, despite remaining a primary source of local information (e.g., firm-specific issues and local economic or policy changes), has seen a significant decline in recent decades (Pew Research Center, 2021).[1] Since newspapers have the power to foster public scrutiny and hold corporate and government entities accountable (Dyck and Zingales, 2002; Dyck et al., 2008; Miller and Shanthikumar, 2015), a concerning aspect of this declining trend is that reduced local press coverage may lead to weakened local accountability (Waldman, 2011). This concern is corroborated by the extant literature showing that geographic areas with reduced local press coverage have less-informed voters (Gentzkow et al., 2011; Hayes and Lawless, 2015), increased misconduct by local firms (Heese et al., 2022), higher toxic emissions (Jiang and Kong, 2023), and heightened corruption among local politicians (Gao et al., 2020). Despite this evidence, little is known about whether and how the decline in local press coverage affects the dispersion in pay between a firm's top executives and their employees.

From a theoretical perspective, the effect of local newspaper closures on within-firm pay disparity is ambiguous. Given the growing attention paid to income inequality, the CEO-worker pay gap is often considered a newsworthy event.[2] Indeed, anecdotal evidence suggests

[1] Pew Research Center. (2021, June 29). *Newspapers fact sheet.* https: //www.journalism.org/fact-sheet/newspapers/.

[2] Survey data reveal that the American public has become more averse to income inequality over the last few decades. For example, Page and Jacobs (2009) demonstrate that while Americans think income inequality is necessary to motivate hard work, 75% of the respondents believe that the current level of inequality is too high and certain jobs are overpaid. A prominent illustration of this sentiment is the "Occupy Wall Street" movement,

that local newspapers regularly publish original stories on pay disparities at local firms. These stories are widespread and often produce sensational headlines that strongly resonate with their readers, with noteworthy examples including "Colorado CEOs Earn in Three Days What the Typical Worker Earns in a Year,"[3] "CEOs Paid 1,000 Times More Than Average Workers,"[4] and "Extraordinarily High CEO-to-Median Employee Pay Ratio."[5] When a firm is revealed to have a substantial CEO-worker pay gap, it can result in negative publicity that harms the firm's reputation (Jones et al., 2014; Sharkey et al., 2022). Therefore, to the extent that local newspapers take the lead in initiating and fueling public scrutiny on pay disparity issues within the region, especially for localized firms, their closures could reduce the chance of negative pay disparity coverage going viral and damaging managers' and their firms' reputations. Following this line of reasoning, we expect the shutdown of local newspapers to be associated with higher pay ratios.

On the other hand, newspapers likely have little impact on corporate pay disparity if they are influenced or even captured by local businesses. Gurun and Bulter (2012) suggest that local newspapers may, at times, function as cheerleaders rather than watchdogs due to local firms' significant contributions to the revenue of local media outlets through advertising. This strong reliance on advertising revenue may potentially compromise local newspapers' independence, thereby limiting their ability to expose misconduct by their contributors. Furthermore, if there is a high degree of substitutability between the affected news outlets and alternative, unaffected outlets, there should also be no significant effect on pay disparities in nearby firms. Therefore, whether newspaper closures affect pay disparity ultimately remains an empirical question.

Examining within-firm pay disparity previously presented empirical challenges because the information on CEO-worker pay ratio was not made available in the public domain. However, the recently mandated disclosures of CEO-worker pay ratios have opened up new

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which underscores the widespread public concern regarding income distribution in society (McCall and Percheski, 2010).

[3] Svaldi, A. (2018, April 20). *Colorado CEOs earn in three days what the typical worker earns in a year, new disclosures show.* The Denver Post. https://www.denverpost.com/2018/04/20/colorado-ceo-worker-pay-gap/.

[4] Murphy, B. (2018, May 22). *CEOs paid 1,000 times more than average workers.* Urban Milwaukee. https://urbanmilwaukee.com/2018/05/22/murphys-law-ceos-paid-1000-times-more-than-average-workers/.

[5] Dornbrook, J. (2018, August 3). *Filing reveals cost of CEO change at H&R Block, extraordinarily high CEO-to-median employee pay ratio*. Kansas City Business Journal. https://www.bizjournals.com/kansascity/news/2018/08/02/hr-block-executive-compensation.html.

avenues for studying this question. In August 2015, the Securities and Exchange Commission (SEC) adopted a mandate that requires listed firms to disclose the ratio of CEO pay to the median worker pay (i.e., the pay ratio or the CEO pay ratio) for the fiscal years beginning on or after January 1, 2017. Before this mandate, firms were only required to disclose CEO pay. By introducing the additional disclosures of median worker pay and the pay ratio, this mandate provides insights into firm-specific pay disparities that were previously unavailable.[6] Moreover, Kay and Martin (2018) show that while the pay ratio is determined by both CEO and worker pay, it is more strongly correlated with median worker pay than with CEO pay. As a result, inferences from prior literature on CEO compensation do not carry over to the pay ratio without considering median worker pay (Cheng and Zhang, 2023).

We collect the reported pay ratio information, along with other disclosure details, directly from firms' proxy statements over the period 2017–2021. The average pay ratio across the 2,607 U.S. firms included in our sample during this period is 139, and the median is 70. We use a difference-in-differences (DiD) methodology that exploits the staggered closure of local newspapers over time. These closures serve as a proxy for shocks to the strength of external scrutiny and public pressure by the local press because they cause large, discrete reductions in local coverage of firm-specific issues (Gao et al., 2020; Heese et al., 2022). Our results show a positive relationship between newspaper closures and within-firm pay disparity as the pay ratio increased by 15.3% after newspaper closures, which provides evidence for the notion that local newspapers play a monitoring role in limiting firms' pay disparity.

To understand whether this effect pertains to the pay ratio or mainly reflects changes in either of its components alone, we conduct two sets of analyses. First, we demonstrate that the positive effect on pay ratios persists after controlling for contemporaneously disclosed CEO or worker pay, suggesting that pay *disparity* increases independent of pay levels. Second, we show that newspaper closures significantly affect both CEO pay and median worker pay as, following the shutdown of a local newspaper, CEO pay increases by 9.1%, whereas median worker pay decreases by 8.4%. These two effects being of similar magnitude indicate that the

[6] Prior to this mandated disclosure, employees knew their own salaries, but they did not have accurate information about firm-specific median worker pay or the distribution of the pay ratios across firms.

pay ratio does not solely result from changes in only one of the two components. Furthermore, we find that the effects on CEO and worker pay become insignificant when controlling for the pay ratio. The fact that the newspaper closure effect on pay ratios remains significant after controlling for each of the pay levels, and not vice versa, suggests that the pay ratio contains distinct information that transcends either of its components. This finding aligns with those of Kay and Martin (2018), Pan et al. (2022), and Cheng and Zhang (2023), underscoring the informational value of pay ratio disclosures.

A potential concern with our main findings is that both the closure of local newspapers and the increase in pay ratios may be driven by changes in the underlying economic conditions in the region (e.g., declining local economy). We address this concern in several ways. First, we explore the dynamics of the newspaper closure effect in the years before and after the closure event and find that the increase in the pay ratio only occurs after the closure.

Second, we conduct cross-sectional tests to examine whether the variation in firms' exposure to local press coverage shocks alters the effect of newspaper closures on firms' pay disparity.[7] We focus on two aspects that likely affect the exposure to local press coverage shocks: (i) the level of local press coverage; and (ii) the firms' geographical scopes. Prior studies suggest that counties with a high number of newspapers are unlikely to be significantly affected by a newspaper closure since there are ample alternative newspapers to cover local issues (Gao et al., 2020; Gentzkow et al., 2011; Heese et al., 2022). In contrast, in counties with only a few newspapers, a newspaper closure represents a substantial disruption to the local information environment. As for firms' geographical scopes, the literature suggests that highly localized firms are more likely to be affected by newspaper closures than geographically dispersed firms (e.g., Kim et al., 2021; Kyung and Nam, 2023; Miller and Shanthikumar, 2015). Thus, if the shutdown of newspapers truly captures shocks to local press coverage, their impact should be more pronounced for localized firms and those in areas with fewer local newspapers. Our findings support this idea, showing a stronger effect of newspaper closures for localized firms and firms in counties with a low number of newspapers.

[7] Jiang (2017) calls for the use of cross-sectional variation tests to mitigate endogeneity concerns when the mechanisms of endogeneity are known.

Third, to ensure that our results are not driven by observed heterogeneity between the treatment and control counties, we repeat our main analysis using a matched sample. In this approach, we match each county that experiences a closure with a neighboring control county of a similar population size that does not experience a newspaper closure. Changes in economic conditions in the region are likely to affect both counties. Therefore, if newspaper closures are driven by common economic factors, the positive effect on pay ratios would be insignificant in this matched sample, otherwise the effect would persist if newspaper closures truly affect pay disparity. Consistent with the notion that underlying economic conditions do not explain our findings, we continue to observe a significant post-closure increase in pay ratios using this matched sample. Echoing this evidence, we also find that newspaper closures are evenly dispersed across states with different economic conditions and over time.

Having established a link between newspaper closures and within-firm pay disparity, we then delve into the underlying mechanisms of this relationship by positing that local newspapers and, in turn, their closures have an effect due to their impact on managers' reputations. This is because negative characterization and populist scrutiny of pay disparity—a matter of substantial social concern—can harm managers' reputations in the eyes of shareholders, potential employers, and society at large (Dyck and Zingales, 2002; Dyck et al., 2008). As a result, the presence of local newspapers reinforces firms' reputational concerns in terms of contributing to the overall income inequality, whereas their absence alleviates these concerns, leading to the positive closure-disparity relationship.

Our final set of tests indicates that this reputation hypothesis operates through three channels: *shareholder responses*, *human capital*, and *public image*. First, we investigate whether local newspapers amplify shareholder responses to the first-time disclosure of the pay ratio in 2018. Prior evidence suggests that shareholders are concerned about inequality and respond negatively to the newly disclosed within-firm pay disparity, both in terms of short-term equity market reactions (Pan et al., 2022) and their say-on-pay votes (Chang et al., 2023). We take this a step further to show that these adverse shareholder responses are more pronounced in counties with local newspapers compared to those without. This is an important

finding as it intimates that the local press plays a central role in disseminating pay ratio information to a broader audience rather than merely repeating widely known information.

Second, we examine whether the effect of newspaper closures varies based on the strength of human capital concerns, as measured by the CEO's age. Younger CEOs might be more severely punished for press negativity through reduced human capital because they do not yet have a reputation as established managers (Hirshleifer and Thakor, 1992; Holmstrom, 1999). Additionally, since younger CEOs are further from retirement, they are also more vulnerable to the loss of human capital than their older counterparts. Therefore, if newspapers and their closures influence pay disparity by shaping managers' human capital in the managerial labor market, the effect of newspaper closures should be more pronounced in firms led by younger CEOs, which is what we observe in the data.

Third, we investigate whether the effect of newspaper closures varies based on local attitudes toward income inequality, as proxied by both political orientation and social capital. If newspapers influence pay disparity through their impact on managers' public images, we would expect a more pronounced closure effect for firms located in more inequality-averse counties, where negative coverage of pay disparity is more likely to lead to social shaming. Consistent with this conjecture, we find that the closure effect is stronger in Democrat-leaning counties and those with high social capital.

Our paper contributes to the literature in several ways. First, by exploring a plausibly exogenous variation in local news supply, our study uncovers the role of local newspapers in constraining within-firm pay disparity. This finding is particularly timely and pertinent in light of the recent pay ratio disclosure mandate. In response to growing concerns about rising income inequality (e.g., Acemoglu and Autor, 2011; Piketty, 2014; Song et al., 2019), this mandate represents an attempt at reform through disclosure and public pressure: By compelling companies to report the pay ratio, it harnesses the power of public scrutiny that arises from disclosure to bring about changes in corporate practices. However, the effectiveness of this approach relies on the dissemination of pay ratio information by the press to shape public opinion. In this context, our findings illustrate how the mandated disclosure interacts with the

local information environment to influence corporate policy, thus shedding light on the importance of the press as an essential component of the reform process.

Second, our findings offer new insights into a future in which newspapers play a significantly diminished role. This should be of interest to both investors and regulators, especially because the newspaper industry is likely to continue to decay (Pew Research Center, 2021). A major concern about the shrinking newspaper industry and, by implication, an opaque local information environment is that it could negatively impact local politics and businesses, reducing local accountability and making it more costly for outsiders to acquire local information (Kyung and Nam, 2023; Waldman, 2011). In line with this rationale, prior studies document adverse consequences of newspaper closures at the local government and firm levels (e.g., An et al., 2020; Gao et al., 2020; Heese et al., 2022; Kang and Nam, 2021; Kim et al., 2021; Kyung and Nam, 2023). We contribute to this line of inquiry by providing the first empirical evidence that the ongoing decline in the newspaper industry could exacerbate income inequality. In doing so, we respond to the call by Blankespoor et al. (2020) to explore the real effects of the evolution and decline of traditional media.

Third, our paper also broadly relates to the literature on the ways in which the local environment affects firm behavior. Extensive research shows that various aspects of the local environment matter for corporate decision-making, such as religious beliefs (Hilary and Hui, 2009; Kumar et al., 2011; Shu et al., 2012), social capital (Hasan et al., 2017; Hoi et al., 2019), political leaning (Di Giuli and Kostovetsky, 2014), and trust culture (Hayes et al., 2021). Our results indicate that local newspapers help to cultivate a local environment that curbs pay disparity, which is widely perceived by society as contradictory to societal norms and values.

The remainder of the paper is organized as follows. Section 2 provides the theoretical background for the empirical analysis. Section 3 describes the data used in this study. Section 4 presents our baseline results and includes several identification tests that reinforce these findings. Section 5 explores the mechanisms through which the press enhances the reputational damages related to pay inequality. Finally, Section 6 concludes the paper.

2. Background and related literature

2.1. The pay ratio disclosure mandate and income inequality

Over a decade after the 2008 financial crisis, the escalating concern about rising income inequality has garnered significant attention from politicians, economists, and policymakers.[8] A crucial aspect contributing to this concern is the growing pay disparity within firms (Song et al., 2019). In July 2010, as part of a larger reform in the Dodd-Frank Act, the U.S. Congress passed a disclosure mandate that focuses on within-firm pay disparity. Following an extensive comment period, the SEC adopted the final version of the mandate in August 2015, which requires most public firms listed in the U.S. to disclose their CEO-worker pay ratio from the first fiscal year that began on or after January 1, 2017.[9] Under the new rule, firms must disclose the median annual total compensation of all employees (excluding the CEO), the annual total compensation of the CEO, and the ratio between these two numbers.

What purposes is the pay ratio disclosure mandate intended to fulfil? According to Senator Menendez, the initiator of the pay ratio mandate, there are two broad justifications for it: (i) providing information on income inequality for the benefit of employees; and (ii) helping investors evaluate the fairness of firms' compensation practices. Specifically, in a 2011 letter to the SEC, Senator Menendez stated that "at a time when companies are laying off workers, employees deserve to know whether their executives are sharing proportionally in any sacrifices."[10] In a subsequent letter in 2017, Senator Menendez and 36 other members of Congress argued that investors can use the pay ratio information to determine the "fairness" of a firm's compensation structure, and this information is relevant to investors because high pay ratios are associated with "the kind of risky investments that brought on the global financial crisis."[11] This letter also drew a connection between corporate pay disparity and broader

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[8] Krugman, P. (2013, December 15). *Why inequality matters.* The New York Times. https://www.nytimes.com/2013/12/16/opinion/krugman-why-inequality-matters.html; Kuhn, M., Schularick, M., and Steins, U. (2018, September 13). *Research: How the financial crisis drastically increased wealth inequality in the U.S.* Harvard Business Review. https://hbr.org/2018/09/research-how-the-financial-crisis-drastically-increased-wealth-inequality-in-the-u-s.

[9] The mandate exempts certain firms from the disclosure, such as emerging growth firms with annual revenues below $1.07 billion and smaller reporting firms with public floats below $75 million.

[10] Menendez, R. (2011, January 19). *Letter to Mary L. Schapiro, Chairwoman of the U.S. SEC.* https://www.sec.gov/comments/df-title-ix/executive-compensation/executivecompensation-59.pdf.

[11] Menendez, R. et al. (2017, March 14). *Letter to Michael Piwowar, Acting Chairman of the U.S. SEC.* https://www.sec.gov/comments/pay-ratio-statement/cll3-1660758-148835.pdf.

societal concerns by noting that "paying CEOs hundreds of times more than the typical employees hurts working families, is detrimental to employee morale, and goes against what research shows is best for business" and that such pay practices "contribute to stunning widening of economic inequality."

A notable feature of the disclosure mandate is that it is the first rule in the history of the SEC disclosure regime to require firms to disclose any information about how they pay their workers (Bank and Georgiev, 2019).[12] As a result, the new pay ratio data not only attract significant media attention but also alter the nature of the coverage on corporate compensation issues. Prior to 2018, firms were only required to disclose the total compensation received by the five highest-paid executives. Therefore, the media's reporting on these disclosures primarily focused on the size of executive pay packages and whether executive pay was closely linked to corporate performance.[13] However, the availability of firm-specific pay ratio data in 2018 shifted media attention to pay disparities between CEOs and rank-and-file employees as well as the broad issue of income inequality.[14]

The pay ratio disclosure rule can facilitate and amplify public discourse about income inequality in two ways (Bank and Georgiev, 2019). First, by linking workers' earnings to those of executives, the pay ratio brings a personal dimension that resonates more strongly with the public compared to information about CEO pay alone. Essentially, the pay ratio represents a useful summary measure of corporate pay disparity since employees often use CEO pay as a reference to gauge the fairness of their own compensation (Wade et al., 2006). Second, the pay ratio rule ensures that public discussion occurs every year during the annual corporate reporting season, which spans several months because firms release their annual reports at different times.

In sum, the pay ratio's frequent association with income inequality underscores the ever-widening wealth gap. By mandating firms to disclose their pay ratios, the new rule encourages regular public discourse that raises society's concerns about pay disparity issues.

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[12] The only other disclosure rule concerning workers requires firms to report their total number of employees.

[13] Mullaney, T. (2015, May 18). *Why corporate CEO pay is so high, and going higher*. CNBC. https://www.cnbc.com/2015/05/18/why-corporate-ceo-pay-is-so-high-andgoing-higher.html.

[14] Talton, J. (2018, July 20). *It's suite at the top, but runaway CEO pay doesn't help the economy*. The Seattle Times. https://www.seattletimes.com/business/economy/its-suite-at-the-top-but-runaway-ceo-pay-is-bad-for-capitalism.

2.2. Related literature

Our study is grounded in the growing literature that explores the role of the local press, using newspaper closures as a proxy for shocks to local information environments. This literature can be broadly classified into three lines of inquiry. The first line examines whether the local press has an impact on political activism. For example, Schulhofer-Wohl and Garrido (2013) document lower regional voter turnout after the shutdown of The Cincinnati Post, a relatively small newspaper in the Cincinnati metro area. They also highlight that alternative news sources, such as digital media or other legacy news outlets, do not always fill the gap created by closed local newspapers. Similarly, exploiting the variations associated with newspaper exits and entries, Gentzkow et al. (2011) provide consistent evidence that newspapers have a positive effect on political participation. Snyder and Strömberg (2010) find that newspapers significantly influence knowledge of congressional candidates by showing that voters living in areas with fewer press outlets are less likely to recall their representatives' names and less able to describe and rate them.

The second line investigates the informational value of local news outlets in the financial market. Kyung and Nam (2023) explain that local news coverage is a critical channel through which outsiders acquire price-relevant local information. Consequently, a newspaper's closure increases information opacity for outsiders, making it easier for insiders to seize profitable trading opportunities. Consistent with this reasoning, insiders from closure counties trade more profitably after local newspaper closures. In a similar vein, Kang and Nam (2021) show that institutional investors respond to the increased information opacity by reducing their holdings in firms located near closed newspapers. Moreover, based on two newspaper closures in 2009, An et al. (2020) offer evidence that managers tend to withhold negative information following the loss of a local information intermediary, which results in a significant post-closure increase in stock price crash risk. Gao et al. (2020) also establish that newspaper closures lead to increased municipal borrowing costs.

The third line of inquiry, which is relatively underdeveloped but more relevant to us, evaluates the impact of newspapers on firm behavior. In the absence of a local press watchdog,

Heese et al. (2022) document that firms located near closed newspapers engage in more corporate misconduct, as measured by federal violations and penalties. Jiang and Kong (2023) find that these firms also increase their toxic emissions. Responding to investors' concerns about increased information costs, Kim et al. (2021) show that firms increase dividend payouts upon local newspaper closures.

All these studies indicate that the local press can exert a positive influence on society's political and economic landscape, primarily through its informational and monitoring functions. We differ from these studies by focusing on the impact of local press on corporate pay disparity. Our focus is motivated by the high public salience surrounding pay ratio disclosures as this topic's controversial and newsworthy nature provides ample opportunities for the press to play a substantial role. Notably, the pay ratio has become an important indicator for evaluating firms and is thus attracting considerable public attention (Piketty, 2014; Song et al., 2019). With the possible exception of major accounting frauds (e.g., Enron and WorldCom), few topics are more pervasive and have a bigger impact in the press than excessive pay inequality. As Jamieson and Campbell (2001) point out, an incident deemed "newsworthy" typically exhibits five characteristics: (i) can be personalized; (ii) dramatic, violent, and conflict-filled; (iii) actual and concrete; (iv) novel and deviant; and (v) an issue of ongoing concern. The large gap between CEO pay and that of the people who work for them is one of the few topics that meets all five criteria.

A simple textual analysis of newspaper articles illustrates the substantial coverage of topics related to CEO-worker pay disparity. We collect this textual information using Newspapers.com, which is one of the largest online newspaper archives that contains tens of millions of newspaper articles (primarily from local newspapers) worldwide. We searched for any of the following keywords in U.S. newspapers: "pay ratio," "pay disparity," "CEO-worker pay inequality," and "CEO-worker pay gap." Throughout 2017–2021, the coverage of pay disparity issues was quite extensive, totaling 124,106 articles, which is approximately one-seventh of the number of articles during the same period that contained the keyword "tennis" (877,709), a popular topic commonly covered by most newspapers.

2.3. Hypothesis development

We posit that local newspapers play a central role in facilitating outsiders' acquisition and processing of pay ratio disclosures, particularly for highly localized firms that tend to receive less coverage from national news outlets. The public pressure generated by local news coverage compels managers to act in ways that align with public expectations, since the local press has the power to influence managers' reputations (Dyck and Zingales, 2002). To the extent that local newspapers serve as a critical source of public scrutiny, their closures can alleviate managers' concerns about the potential reputational damages from negative publicity related to pay inequality.

In the spirit of Dyck and Zingales (2002), the local press can discipline managers by widely disseminating information that might adversely impact their reputations. The role of newspapers in information dissemination is important because acquiring information is a costly endeavor, and not all stakeholders are willing to bear this cost. Behavioral studies demonstrate individuals' limited capacity to process information and the challenge of extracting useful statistics from public data, especially in the present information explosion era (Bloomfield, 2002; Libby et al., 2002). Thus, to bridge the gap between humans' limited processing ability and the abundance of available information, firms typically rely on third-party intermediaries, such as the press, to disseminate firm-initiated information to a broad range of readers (Bushee and Miller 2012; Miller, 2006). By covering a piece of information, newspaper editors reduce the cost of information acquisition for thousands of readers and make that information more accessible to the general public. Moreover, newspapers can also help readers contextualize different pieces of information, such as financial filings and private conversations with executives and employees, leading to a more effective use of available information (Kang and Nam, 2021).

Despite having shrunk substantially in recent years, local newspapers remain an important component of the information environment in society (Kyung and Nam, 2023). Indeed, to avoid direct competition with national newspapers, local newspapers cater to their audiences by focusing more on local affairs, such as firm-specific news (George and Waldfogel, 2006). This approach effectively fosters a devoted local readership. For example, a survey

conducted by the Readership Institute of Northwestern University reveals that local newspapers enjoy notably higher local readership within their communities compared to national newspapers (Gurun and Butler, 2012). In addition, the influence of local newspaper articles often extends well beyond their intended regional audience. Once these articles are published, they are frequently copied, quoted, and elaborated on by other news outlets, including national newspapers and online news portals (Nielsen, 2015; Shapira and Zingales, 2017). Essentially, newspapers are an important information source for local affairs that would otherwise be difficult to learn about from other news outlets (Hayes and Lawless, 2015; Mondak, 1996). In turn, the shutdown of local newspapers would have an adverse impact on the extent to which local affairs are covered in the broader news ecosystem.

Furthermore, given the contentious nature of income inequality, newspapers tend to emphasize the "evilness" of pay disparity that falls out of favor with public opinion when covering such topics (e.g., CEOs receiving multimillion-dollar bonuses while their workers' wages remain stagnant). This negative portrayal can significantly impact the reputations of managers and firms in the eyes of shareholders, potential employers, and society at large (Dyck et al., 2008), leading to reputational concerns in the form of adverse shareholder reactions, diminished human capital, and a tarnished public image, respectively. Based on the above arguments, we hypothesize that newspaper closures reduce these reputational concerns and thereby increase pay disparity.

However, an alternative perspective suggests that local newspaper closures have no effect on corporate pay disparity because local newspapers may be incentivized to positively slant news about local firms or avoid reporting on them altogether. For example, Gurun and Butler (2012) show that local firms advertising in local news outlets creates a conflict of interest and results in overly positive articles about these firms. Similarly, Shapira and Zingales (2017) document that when the local press scrutinizes local firms, which are often large employers in town, they risk upsetting their readers. As a result, the local press may refrain from reporting critically about these firms. Therefore, if local newspapers are captured or compromised by local businesses pre-closure, there may not be significant changes in CEO pay ratios following

the closures. Overall, whether the loss of local news coverage has an impact on nearby firms' pay disparity remains an empirical question.

3. Data

3.1. The CEO-worker pay ratio

We manually extract pay ratio information from the proxy statements filed with the SEC during 2017–2021.[15] Our sample begins in 2017, the first year in which pay ratio information becomes accessible. We conduct a thorough search for the term "pay ratio" and its variations in all the proxy statements throughout our sample period, resulting in a universe of 11,534 proxy statements from 3,057 firms that disclose pay ratios. After excluding the firms headquartered outside the U.S., we obtain a sample of 2,926 firms and 11,043 firm-years with non-missing pay ratio information, including the pay ratio, CEO compensation, median worker pay, and other disclosure details.

The mandate encompasses a set of detailed provisions pertaining to the determination of median annual employee compensation. For example, when identifying median worker pay, firms must consider all full-time employees as well as part-time, seasonal, and temporary employees.[16] According to the mandate, firms must also include non-U.S. employees unless this inclusion violates data privacy laws in the foreign country (i.e., foreign data privacy exemption) or if the non-U.S. employees constitute 5% or less of their entire workforce (i.e., de minimis exemption). Moreover, although firms can apply cost-of-living adjustments to employees' compensation in countries other than the CEO's country of residence, they must still provide a pay ratio without these adjustments.

These details are disclosed in the pay ratio section of firms' proxy filings. To account for these intricacies, we adopt Pan et al.'s (2022) approach and construct six variables that capture firm characteristics related to disclosure requirements, including worker composition (*Fraction non-US* and *Part-time worker*), the presence of multiple pay ratios (*Several pay ratios*), use of

[15] See Pan et al. (2022) for more details about the data collection procedures, which we follow in this study.
[16] Employees on leave of absence are excluded, and employees of a recently acquired entity can also be excluded for the fiscal year in which the merger and acquisition takes place. Furthermore, independent contractors and workers employed by unaffiliated third parties are excluded.

the de minimis exemption (*De minimis*), application of cost-of-living adjustment (*Cost-of-living adj.*), and the length of the pay ratio section (*LN Length PR section*). See the Appendix for more detailed variable definitions.

Panel A of Table 1 provides summary statistics for the pay variables, including the pay ratio (*Pay ratio*), CEO compensation (*CEO pay*), and median worker pay (*Worker pay*). We find that *Pay ratio* ranges from 0 to 6,565, with a mean of 139, a median of 70, and a standard deviation of 284. The variation in the pay ratio reflects substantial variation in both CEO pay and median worker pay, with pay at the 25th and 75th percentiles amounting to $2.5 million and $9.1 million, respectively, for CEOs and $46,321 and $106,238, respectively, for median workers. To avoid the effect of outliers, we use the natural logarithm of the pay ratio and its components in our regression analysis. Specifically, we define *LN Pay ratio* as ln(1+*Pay ratio*), *LN CEO pay* as ln(1+*CEO pay)*, and *LN Worker pay* as ln(*Worker pay*). The last three rows of Panel A report the corresponding summary statistics.

Panel B of Table 1 shows the means and medians of *Pay ratio*, *CEO pay*, and *Worker pay* for each (one-digit SIC) industry. We find that the mining, construction, and financial industries have relatively low pay ratios, whereas the service, agriculture, and retail trade industries have relatively high pay ratios. Panel C of Table 1 illustrates a noticeable trend of growing pay disparity within firms over time. The average (median) pay ratio rises from 119 (57) in 2017 to 162 (83) in 2021.

Panel D of Table 1 reports the summary statistics for the disclosure details reported in the pay ratio section. Among our sample observations, 9.1% report more than one pay ratio,[17] and 2.1% identify their median employees as part-time. In addition, the average fraction of non-U.S. employees in our sample is 11.1%. While 22.3% of the firm-years use the de minimis exemption, only a small fraction (0.6%) apply a cost-of-living adjustment. On average, the pay ratio section in our sample firms' proxy statements spans 382 words. Notably, all the statistics presented in this section are comparable to those of Pan et al. (2022).

[17] In cases where firms report multiple pay ratios, we use the smallest value, in line with Pan et al. (2022).

3.2. Newspaper closures

To identify closure events, we analyze both daily and weekly newspapers for two reasons. First, including both daily and weekly newspapers in our analyses ensures a sufficient number of newspaper closures—a crucial aspect given the limited timeframe of our study. Second, since weekly newspapers have a lower publication frequency, their closures would have a smaller impact on the local information environment compared to the closure of daily newspapers. As a result, our estimates are likely to be conservative in terms of identifying the effect of newspaper closures on pay disparity.

We obtain data on U.S. newspaper closures for the period between 2017 and 2021 from multiple sources. Our primary data source is the Editor and Publisher Yearbook, which is an annually published directory of U.S. newspapers. For each year within our sample period, we manually collect information such as the newspaper's name, publication frequency, city, county, and state. To augment this dataset, we extract the relevant newspaper information from the U.S. Newspaper Directory of Chronicling America.[18] Using the combined dataset, we identify the newspapers that disappear across years and then manually search for the year and reason for each identified closure. Finally, we cross-check all the closures and reconcile discrepancies using Newspaper Death Watch,[19] along with other relevant news content found through Google searches. Following Gentzkow et al. (2011), we match the newspapers to the counties based on the cities in which they are located using the 2010 U.S. Census County definition. If a newspaper is located on the border of two counties, we match the newspaper to both counties (Gao et al., 2020; Heese et al., 2022).

Our initial sample comprises 147 newspaper closures. Similar to Heese et al. (2022), we only include firms that are present in both the pre- and post-closure periods. Accordingly, we exclude newspaper closures that took place before 2018 or after 2020 from our analyses, resulting in a sample of 108 closures. We next drop closure cases that do not necessarily lead to a reduction in local news coverage, including: (i) 43 cases in which newspapers merge with

[18] The U.S. Newspaper Directory of Chronicling America, sponsored jointly by the National Endowment for the Humanities and the Library of Congress, provides information about U.S. newspapers published since 1690.
[19] Accessible at: https://newspaperdeathwatch.com/.

or are acquired by other newspapers; and (ii) 16 cases in which newspapers transition from print to digital publication. After merging with the pay ratio data, our final sample consists of 19 newspaper closures across 38 counties, among which six are daily newspapers and 13 are weekly newspapers. Examining the distribution of these closures, we find that they are scattered both across geographical locations (see Figure 1) and time (see Table 2).

Figure 2 depicts the change in local news coverage pertaining to corporate pay disparity around the time of newspaper closures. The number of news articles related to firm-specific pay disparity published by local newspapers diminishes by about 50% relative to the two years prior to the shutdown of a local newspaper in the same county.[20] This substantial decline in local coverage of pay disparity news after newspaper closures underscores the important role of local newspapers in disseminating pay ratio information.

3.3. Other data sources

In addition to the pay ratio and newspaper data, we also obtain firm-level control variables from Compustat.[21] Specifically, we collect data on the firm's market capitalization (*Size*), the ratio of book value of assets to market value of assets (*Book to market*), the ratio of capital expenditures to total assets (*Capex*), profitability (*ROA* and *Stock return*), and the ratio of liabilities to total assets (*Leverage*). The Appendix describes these variables in more detail. All continuous variables are winsorized at the 1st and 99th percentiles to mitigate the impact of outliers. After requiring non-missing data for the variables of interest and controls, our primary sample comprises 2,607 firms and 9,770 firm-year observations.

Panel E of Table 1 presents the summary statistics for the firm characteristic controls. On average, a firm in our sample exhibits a market capitalization of $10.4 billion, a book-to-market ratio of 66.3%, a capex-to-assets ratio of 3.0%, an ROA of 3.9%, a stock return of 14.0%, and a leverage of 29.5%.

[20] For firms headquartered in a closure county, we count the number of news articles published by local newspapers, retrieved from Factiva, that discuss topics related to CEO-worker pay disparity. A news article is classified as related to pay disparity if it contains any of the following keywords: "pay ratio", "pay disparity", "CEO-worker pay inequality", and "CEO-worker pay gap".

[21] Our main findings remain quantitatively similar when we include additional controls for county-level GDP growth and population size.

4. Empirical methodology and results

4.1. Empirical methodology

Our baseline regressions examine the effect of newspaper closures on within-firm pay disparity using the following generalized DiD framework:

$$Y_{ilt} = \alpha + \beta\ Closure_{lt} + \gamma\ Control_{it} + Industry + State \cdot Year + \varepsilon_{ilt} \qquad (1)$$

where *i* indexes the firm, *l* refers to the county, and *t* indicates the year. The dependent variable is the natural logarithm of the reported pay ratio in a firm-year. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. *Control* represents a vector of firm characteristics (see Section 3.3) and disclosure details (see Section 3.1) that may affect pay ratios. Our model specification also includes two sets of fixed effects. Industry fixed effects account for time-invariant heterogeneity across industries, and state-year fixed effects control for time-varying differences across states. Importantly, the inclusion of the state-year fixed effects implies that *closure* captures the effect of a newspaper closure in that county compared to other counties that experience no newspaper closures within the same state and year.

This generalized DiD approach allows us to exploit the staggered closure of newspapers over time. The first difference pertains to the change in pay disparity, proxied by the reported pay ratio, in each affected firm before and after the closure of a local newspaper. The implicit control group at time *t* consists of the firms located in areas where no newspaper closures occur. The second difference concerns the change in pay disparity within this control group. In turn, the effect of newspaper closure on pay disparity can be estimated as the difference between these two differences, denoted as β in the above specification. If local news coverage plays a crucial role in reinforcing negative publicity of and reputational concerns related to pay inequality, we expect newspaper closures to lead to higher pay ratios (i.e., β>0).

4.2. Baseline results

Table 3 provides the results of estimating Eq. (1). We start the analysis by regressing *LN Pay ratio* on *Closure*, along with industry and state-year fixed effects. In addition to these variables, regression 2 incorporates firm characteristics as control variables. Furthermore, regression 3 includes additional controls for disclosure details. Across all the above specifications, the coefficient on *Closure* is positive and statistically significant at the 5% level. Regarding economic magnitude, the results indicate that the closure of a newspaper increases the pay ratio by 15.3%, which corresponds to an increase of approximately 21.3 given the average pay ratio of 139 (see Table 1).

In terms of the control variables, our results are consistent with Mueller et al. (2017) and Song et al. (2019), indicating that within-firm pay disparity is positively related to firm size. Moreover, Pan et al. (2022) suggest that worker composition plays a significant role in explaining the variation of the pay ratio largely due to its association with median worker pay. In line with this view, we show that firms with part-time median employees and those with larger fractions of non-U.S. employees have higher reported pay ratios. Interestingly, firms with higher pay ratios tend to have more extensive pay ratio sections, which may reflect firms' inclinations to provide more details and justifications when their pay ratios are high.

While we construct *LN Pay ratio* using the pay ratios reported in the firms' proxy statements, we observe that these reported pay ratios occasionally deviate from the ratio of the two pay variables reported in the same section.[22] As a robustness check, we construct an alternative pay ratio measure, *ln(CEO Pay/Worker Pay)* as the natural logarithm of the reported CEO pay over reported median worker pay. As indicated in Table IA1 of the Internet Appendix, we repeat the regressions in Table 3 using this alternative measure, for which the results are quantitatively similar.

The recent causal inference literature suggests that a staggered DiD design may result in biased estimates when later-treated observations serve as controls before treatment is applied, a phenomenon known as the heterogeneous treatment problem (Callaway and Sant'Anna 2020; Sun and Abraham 2021). One way to address this issue, as suggested by Baker et al. (2022), is

[22] In our sample, we identify 417 observations with (mostly small) discrepancies between the reported pay ratio and the ratio of the reported CEO pay and worker pay.

to adopt stacked DiD estimation. In doing so, we first create event-specific cohorts that include treated firms and control firms that never experience treatment in the event estimation window. This refined control group mitigates heterogeneous treatment problems by ensuring that later-treated firms are not used as controls for early-treated firms. We then stack all the event cohorts in relative time, as if all treatments occur at once, to estimate an average treatment effect. The results in Table IA2 of the Internet Appendix indicate that our inferences remain unchanged.

4.3. Pay disparity versus pay levels

Our baseline results demonstrate a positive relationship between newspaper closures and within-firm pay disparity. However, a potential concern is that this relationship could be driven by CEO pay or median worker pay and thus may have little to do with the pay ratio. To examine whether our results pertain to pay disparity or primarily reflect pay levels of CEOs or median workers, we conduct two sets of tests. We first investigate whether our baseline results continue to hold after controlling for pay levels. Given the collinearity between the pay ratio, CEO pay, and median worker pay, it is not possible to examine the effect of *Closure* on *LN Pay ratio* while controlling for CEO pay and worker pay at the same time. Therefore, we include CEO and worker pay separately in our baseline specifications to distinguish the effect of *Closure* on *LN Pay ratio* from its effect on pay levels. Panel A of Table 4 reports the results. The coefficient on *Closure* remains significant even after the inclusion of pay levels, suggesting that the post-closure increase in pay disparity cannot be explained by either of the pay levels alone.

Second, we explore the effect of *Closure* on the two components of the pay ratio, namely CEO pay and median work pay. Panel B of Table 4 indicates that newspaper closures have opposite effects on the two components: While the effect of newspaper closures on CEO pay is positive and significant, it is negative for median worker pay. In terms of economic magnitude, the coefficients on *Closure* in regressions 1 and 3 are 0.091 and -0.084, respectively. Following the shutdown of a local newspaper, CEO pay increases by 9.1%, whereas median worker pay decreases by 8.4%. A simple back-of-envelope calculation suggests that the combined effect on the pay ratio is 19.1% (i.e., (1+9.1%)/(1-8.4%)), which aligns with the magnitude of our baseline effect. Importantly, both CEO pay and median worker pay contribute

significantly and are of similar magnitudes to the increase in the pay ratio post-closure, suggesting that the increase in the pay ratio is not solely a result of changes in either of these two components.

Regressions 2 and 4 show that the effects of *Closure* on *LN CEO pay* and *LN Worker pay* are not present after controlling for *LN Pay ratio*. The fact that the effect of *Closure* on *LN Pay ratio* remains significant after controlling for each of the pay levels, and not vice versa, suggests that the pay ratio contains distinct information that transcends either of its components alone. Overall, the results in Table 4 suggests that external scrutiny from the local press is related to high within-firm pay disparity rather than just the levels of CEO or worker pay.

4.4. Enhancing identification

In this section, we present a set of tests to mitigate the concern that both the closure of local newspapers and increases in pay ratios are driven by changes in underlying economic conditions or other unobserved factors in the local environment. We address this concern by conducting four analyses: (i) a dynamic effects analysis; (ii) cross-sectional tests; (iii) a neighboring-county matching analysis; and (iv) a falsification test. We describe these tests in more detail below.

4.4.1. Dynamic effects

We first examine how the effect of local newspaper closures on within-firm pay disparity evolves in the years before and after the closures. We use the same specifications as those in our baseline models but allow the closure effect to vary according to the year. To achieve this, we create dummy variables for two or more years before ($Closure_{t-2}$), the year before ($Closure_{t-1}$), the year after ($Closure_{t+1}$), and two or more years after ($Closure_{t+2}$) the closure. We then replace *Closure* with these timing indicators, taking the year of the newspaper closure as the base year. If our results are influenced by underlying economic conditions or if the treated and control firms exhibit differential pre-trends, then *LN Pay ratio* might already be correlated with *Closure* before a local newspaper's closure.

Table 5 presents the results. We find that the coefficients on $Closure_{t-2}$ and $Closure_{t-1}$ are statistically insignificant, suggesting that the treated and control firms are indistinguishable from each other before newspaper closures. To the extent that pay disparity widens during a local economic slowdown (which could subsequently result in a newspaper closure), there might be a spurious pre-closure increase in the pay ratio. Thus, the absence of this pre-trend alleviates the concerns that our findings are driven by a declining local economy. As for the post-trends, we note that firms react to the reduced public scrutiny following a newspaper closure. The coefficients on $Closure_{t+1}$ and $Closure_{t+2}$ are positive and significant, indicating that the increase in the pay ratio occurs after the closures.

4.4.2. Cross-sectional tests

The closure of a local newspaper is not equally important under all circumstances because certain firms are more likely to be affected by changes in the local information landscape than others. To investigate this matter, we conduct cross-sectional analyses to determine whether the variation in firms' exposure to local press coverage shocks moderate the effect of newspaper closures on within-firm pay disparity. Herein, we focus on two aspects that likely influence firms' exposure: (i) the level of local press coverage in the area; and (ii) the firms' geographical scopes.

First, we examine whether the level of local press coverage moderates the effect of newspaper closures on pay disparity. Following Gao et al. (2020) and Heese et al. (2022), we use the number of local newspapers as a measure of the level of local press coverage. In counties with a high number of newspaper operations, a newspaper closure is unlikely to have a significant impact since there are plenty of other newspapers in place to cover local issues (Gao et al., 2020; Gentzkow et al., 2011; Heese et al., 2022). Conversely, in counties with a low number of newspaper operations, a newspaper closure represents a more substantial disruption to local press coverage. Therefore, if the post-closure increase in pay ratios is due to a decline in press coverage and the subsequent reduced public scrutiny, we would expect the effect of newspaper closures on pay disparity to be concentrated in the low newspaper counties.

On the other hand, if newspaper closures are driven by underlying economic conditions, we would expect to observe an effect on pay disparity regardless of the number of local newspapers.

In Panel A of Table 6, we interact *Closure* with *Low NP county*, which takes the value of one for counties with two or fewer newspapers pre-closure and zero otherwise.[23] As in our previous analyses, we include state-year fixed effects to ensure that the moderating effect of *Low NP county* is estimated within the same state and year. The results show that the coefficients on *Closure* × *Low NP county* are positive and significant at the 5% level, whereas those on *Closure* are statistically insignificant. These findings are consistent with our conjecture, indicating that the effect of newspaper closures on pay ratios is concentrated in firms located in areas where there are fewer local newspapers.

Second, we explore whether differences in firms' geographical scopes influence the effect of newspaper closures. Prior research suggests that the press tends to focus on local firms in its reporting (Kim et al., 2021; Miller and Shanthikumar, 2015). In contrast to geographically dispersed firms, local firms typically face intense scrutiny from the local press and receive less coverage from national news outlets (Kyung and Nam, 2023). Consequently, local newspapers' watchdog role is more salient to local firms, rendering them more susceptible to disruptions in local press coverage. In turn, if newspaper closures truly affect pay ratios, this effect would be more prominent among local firms.

We define a firm as "local" if its business activities are concentrated in a small geographic area. To capture this geographical concentration, we adopt Garcia's and Norli's (2012) methodology and extract counts of state names mentioned in annual reports filed with the SEC on Form 10-K. Specifically, we count the occurrence of state names in sections "Item 1: Business," "Item 2: Properties," "Item 6: Consolidated Financial Data" and "Item 7: Management's Discussion and Analysis." The variable *Local firm* equals one if, at most, two states are mentioned in these four sections, and zero otherwise.[24]

[23] Low newspaper counties are those in the lowest quartile for the number of newspapers.
[24] Local firms are those that belong to the lowest quartile in terms of the number of states mentioned in annual reports. Similar to Garcia and Norli (2012), we exclude firms that do not mention any U.S. states in their 10-Ks.

Panel A of Table 6 reports the regression results in which the variable of interest is the interaction term between *Closure* and *Local firm*. We find that the coefficients on *Closure* × *Local firm* are positive and significant at the 5% level, indicating that the effect of newspaper closures is stronger for local firms. Together, the results from our cross-sectional tests mitigate the concern that the post-closure increase in pay ratios is explained by unobserved factors in the local environment.

4.4.3. Neighboring county matching

Next, we examine the robustness of our findings using a neighboring county–matched sample to further mitigate the concern that both newspaper closures and the resulting higher pay ratios might be driven by underlying economic conditions in the region. Specifically, in constructing the sample for this analysis, we match each county in which a closure occurs with a neighboring control county that does not experience a closure but has a similar population. The rationale behind this approach is that changes in economic conditions in the region are likely to affect both counties. However, given that the vast majority of newspapers' circulations are typically within-county (Gao et al., 2020; Gentzkow et al., 2011), the shutdown of a newspaper in one county is unlikely to significantly affect pay ratios in a neighboring control county. As a result, in this matched sample, the effect of newspaper closures on pay ratios would persist if these closures truly affect pay disparity. Conversely, the effect would disappear if the newspaper closures merely reflect changes in the local economic environment.

Table 7 presents the results of this test. Since we continue to observe positive and significant coefficients on *Closure*, the post-closure increase in pay ratios is unlikely to be driven by changing economic conditions in the region. Furthermore, the evidence in Section 3.2 showing that newspaper closures are dispersed across states with different economic conditions and over time corroborates this finding. In Table IA3 of the Internet Appendix, we also show that newspaper closures are not predictive of future percentage changes in county employment or wage levels, further suggesting that newspaper closures are not correlated with local economic conditions.

4.4.4. Falsification test

Finally, we perform a falsification test to further address the possibility that our results are driven by unobserved factors coinciding with newspaper closures. Specifically, we re-estimate our baseline regressions using a pseudo treatment indicator, denoted as $Closure_{pseudo}$. This new variable is created through a two-step randomization procedure that involves both the county and year of newspaper closures. In the first step, we randomly select 38 counties from our sample and assign pseudo newspaper closures to them. This approach ensures that the number of counties with and without newspaper closures matches that of the original closure variable. Second, for each of these selected counties, we generate a random year within the corresponding sample period to serve as the pseudo treatment year, after which we rerun the baseline regressions and record the resulting coefficients.

We repeat this randomization procedure 1,000 times and report the average coefficients on $Closure_{pseudo}$ in Table 8. Across the two specifications, with and without the disclosure detail controls, the coefficients on $Closure_{pseudo}$ based on the random data are close to zero and insignificant. These results provide additional evidence for the idea that unobservable county characteristics do not drive our findings.

5. Local press coverage and reputational concerns

The results so far provide robust evidence that the shutdown of local newspapers have a positive impact on nearby firms' pay disparity, thus pointing to a significant role that the local information environment plays in constraining within-firm pay disparity. In this section, we elucidate the underlying economic mechanisms that drive our main finding. We contend that the primary mechanism through which local newspapers exert their influence is by increasing the reputational costs of pay disparity.

Reputation can take various forms. Early studies, such as Fama (1980) and Fama and Jensen (1983), primarily focuses on managers' reputations in relation to potential employers, who determine future jobs and wages. Equally important, if not more so, is the consideration of a manager's or company's reputation vis-à-vis financial markets, as modeled by Diamond (1989) and Gomes (2001). Since this reputation can profoundly affect firms' profitability and

their ability to exploit future investment opportunities, it is important for even the most self-interested managers. Lastly, managers may also be concerned about their reputations within the broader societal context. As argued by Dyck and Zingales (2002), managers often yield to public pressure, not necessarily because it aligns with shareholders' interests but, rather, to avoid the private cost of being portrayed as "a bad guy."

Building upon these insights, we posit that negative press coverage and populist scrutiny regarding pay disparity can damage managers' reputations in the eyes of shareholders, potential employers, and the public at large. Conversely, newspaper closures alleviate these reputational concerns and make it less costly for firms to increase pay ratios. To substantiate this reputation explanation, we investigate how the local press interacts with different aspects of reputational concerns in influencing pay disparity: (i) shareholder responses; (ii) human capital in the managerial labor market; and (iii) managers' public images.

5.1. Shareholder responses to the initial pay ratio disclosure

To investigate whether the press's information dissemination role affects the reputations of managers and their firms vis-à-vis shareholders, we analyze shareholder responses to the initial disclosure of the CEO-worker pay ratio in 2018. An important advantage of this approach is that the 2018 pay ratio disclosure represents a well-defined event that allows for clear identification of shareholder reactions to firms' pay disparity (Pan et al., 2022). Prior studies demonstrate that shareholders generally respond negatively to within-firm pay disparity, both in terms of short-term equity market reactions (Pan et al., 2022) and their say-on-pay votes (Chang et al., 2023).

Motivated by these studies, we examine whether local newspapers amplify the negative shareholder responses to pay ratio disclosures. If the press actively disseminates pay ratio information to a broader audience, we would expect more pronounced negative market reactions and a larger fraction of adverse say-on-pay votes in counties with local newspapers compared to those without. On the other hand, if the press merely rebroadcast widely known information, we expect no significant differences in shareholder responses between counties with and without newspapers.

For the dependent variables, we replace our pay ratio measure with two proxies for shareholder responses. First, we examine the seven-day cumulative abnormal return (CAR) around the time when firms' pay ratios are initially announced. Following Pan et al. (2022), we construct *CAR [-1, +5]* as the cumulative abnormal return between event days −1 and + 5. We calculate abnormal returns as the difference between a firm's daily return and the value-weighted CRSP market return, with both returns excluding dividends. Day 0 in event time is the earliest filing date in 2018 of either the preliminary or the definitive proxy statement.[25] Second, we use the percentage of votes against the say-on-pay proposal at the subsequent shareholder meeting to capture institutional investor responses to the initial pay ratio disclosure. In line with Ertimur et al. (2011), we calculate *% Votes against* as the number of votes cast against the proposal divided by the total number of votes cast on the proposal. As panel analyses are not feasible for these shareholder response tests, we rely on cross-sectional regressions that focus on to the first year of the pay ratio disclosure.

In Panel A of Table 9, we examine whether equity market reactions to the pay disparity differ between counties with and without newspapers. The variable of interest is the interaction term between *LN Pay ratio* and *County with NP*, where *County with NP* is a dummy variable that equals one if a county had at least one newspaper in 2018 and otherwise zero. We find that the coefficients on *LN Pay ratio* × *County with NP* are negative and significant at the 1% level, whereas those on *LN Pay ratio* are statistically insignificant. These results suggest that the significantly negative market reaction to a high pay ratio is concentrated in counties with newspapers.

Panel B of Table 9 presents the results of examining shareholder responses to pay ratio disclosures via say-on-pay votes. Two observations are noteworthy. First, the coefficients on *LN Pay ratio* are positive and significant, consistent with prior evidence that shareholders voice discontent regarding pay disparity through adverse say-on-pay votes (e.g., Crawford et al., 2021; Chang et al., 2023). Second, the coefficients on the interaction term *LN Pay ratio* ×

[25] To control for outliers, we follow Pan et al. (2022) and eliminate firms with daily abnormal returns that deviate by more than three standard deviations from the sample mean, where both the mean and the standard deviation of daily abnormal returns are calculated across all stocks in our sample across all days in 2018.

County with NP are also positive and significant, indicating that the increase in adverse say-on-pay votes following pay ratio disclosures is more prominent in counties with newspapers compared to those without.

Collectively, these results suggest that the local press plays a central role in disseminating pay ratio information to a broader audience. These findings also align with those of Kang and Nam (2021), who find that newspapers are a key channel through which institutional investors acquire local information.

5.2. Human capital in the managerial labor market

Managers have human capital at risk because of their reputations in the managerial labor market. To the extent that negative press coverage on pay disparity erodes managers' reputations and human capital, the closure of newspapers may alleviate these concerns and facilitate higher pay ratios. To substantiate this argument, we explore whether the effect of newspaper closures varies depending on the CEO's age, which serves as a proxy for the strength of their human capital concerns.

Models that incorporate career concerns, such as those of Hirshleifer and Thakor (1992) and Holmstrom (1999), suggest that younger CEOs might be more severely punished for press negativity through reduced human capital because they do not yet have reputations as high-quality managers. Additionally, since younger CEOs are further from retirement, they are likely to be more susceptible to the loss of human capital in the managerial labor market than their older counterparts. Hence, if local newspapers and, in turn, their closures influence pay disparity by shaping managers' reputations and human capital, then we would expect a more pronounced closure effect in firms led by young CEOs.

Table 10 reports the results of pay ratio regressions in which the variable of interest is the interaction term between *Closure* and *Young CEO*. We define *Young CEO* as a dummy variable that equals one if the age of the CEO falls in the lowest quartile of the CEO age distribution, and zero otherwise. Consistent with our conjecture, the coefficients on *Closure* × *Young CEO* are positive and significant, suggesting that the post-closure increase in pay ratios is more prominent for firms led by young CEOs.

5.3. Managers' public images

Managers do not only care about their reputations in the eyes of shareholders and potential employers since they are also concerned about their reputations in the eyes of the public at large, that is, their public images. Dyck and Zingales (2002) indicate that negative press coverage can harm managers' reputations within their communities, exerting social pressure on them and their families. In this context, reputational costs can be thought of as the personal disutility of a dent on the manager's public image (Dyck et al., 2008). Simply put, people dislike being singled out as the "bad guys." In societies where the social norm is averse to inequality, being identified as a socially irresponsible manager who contributes to the overall income inequality can lead to social shaming. Following this line of reasoning, we investigate whether the effect of newspaper closures varies based on local attitudes toward income inequality. If local newspapers and, in turn, their closures influence pay disparity through their impact on managers' public images, then we would expect a more pronounced closure effect for firms located in more inequality-averse counties, where negative coverage of pay disparity is more likely to lead to social shaming.

We test this conjecture in Table 11, employing two measures to capture local attitudes toward income inequality. Our first measure exploits the idea that inequality aversion is correlated with political views (e.g., Alesina and Giuliano, 2011; Luttmer and Singhal, 2011). According to Pan et al. (2022), in the U.S., the Democratic Party aligns more closely with a Rawlsian view that redistribution enhances social justice, while the Republican Party leans toward a libertarian view that market outcomes are generally fair. Therefore, we use the degree of support for the Democratic Party in a county as a proxy for the revealed inequality aversion in that county. *High Democratic* is a dummy variable that equals one if *% Democratic* is in the top quartile of its distribution and zero otherwise, where *% Democratic* is the percentage of votes obtained by the Democratic Party in the 2020 Presidential Election in a county.[26]

[26] We collect the election data from the MIT Election Data and Science Lab.

Our second measure is based on local social capital. Negative press coverage concerning income inequality is more likely to go viral in communities with high social capital, given their dense social networks and the prescribed values associated with cooperative norms (Hoi et al., 2019). Following Hasan et al. (2017) and Hoi et al. (2019), we construct *Social capital* using the first principal component from a factor analysis based on four factors that capture cooperative norms and social networks in US counties: (i) *Pvote,* which is voter turnouts in presidential elections; (ii) *Respn*, response rates in US census surveys; (iii) *Nccs*, total numbers of nonprofit organizations; and (iv) *Assn,* total number of ten types of social organizations.[27] We then construct *High social capital* as a dummy variable that equals one if *Social capital* is in the top quartile of its distribution, and zero otherwise.

Panels A and B of Table 11 present the results of examining the impact of local attitudes toward inequality, using *High Democratic* and *High social capital*, respectively. Regardless of the measure used, the coefficients on the interaction terms, namely *Closure* × *High Democratic* and *Closure* × *High social capital*, are positive and significant. These results suggest that the effect of newspaper closures is stronger in more inequality-averse counties as this is where negative coverage of pay disparity is more likely to incite public outrage. Moreover, we note that the coefficients on *High Democratic* and *High social capital* are negative as expected, even though they are insignificant.

6. Conclusion

We examine whether local newspapers reduce within-firm pay disparity by leveraging the recently mandated disclosures of CEO-worker pay ratios and the staggered shutdown of local newspapers. The results suggest that when a local newspaper shuts down, nearby firms have higher pay ratios, particularly for localized firms and those in counties with fewer

[27] We construct the social capital index using data from several sources. We obtain voter turnout rate data from the MIT Election Data and Science Lab, census response rate data from the U.S. Census Bureau, and data on the total numbers of ten types of social organizations from the County Business Patterns. Additionally, we collect data on the total numbers of non-profit organizations from the National Center for Charitable Statistics. We could only directly estimate *Social capital* for the period 2017–2019. Therefore, following the approach of Hilary and Hui (2009) and Hoi et al. (2019), we backfill the data for the missing years using estimates of *Social capital* in the preceding year for which data are available. Specifically, we fill in the missing data for 2020 and 2021 using *Social capital* from 2019.

newspaper operations. Further analyses affirm that the post-closure increase in the pay ratio is unlikely to be driven by either of its components alone or underlying economic conditions.

Exploring the underlying mechanisms, we find evidence that newspapers and, in turn, their closures have an effect on pay disparity because of their impact on managers' reputational concerns in relation to shareholder responses, human capital, and public image. Collectively, our results suggest that local newspapers play a crucial role in disseminating pay ratio information and initiating external scrutiny on firms' pay disparity. From a policy perspective, these findings illustrate how the pay ratio disclosure mandate interacts with the local information environment to influence corporate policy, highlighting the importance of the press in determining the effectiveness of the reform.

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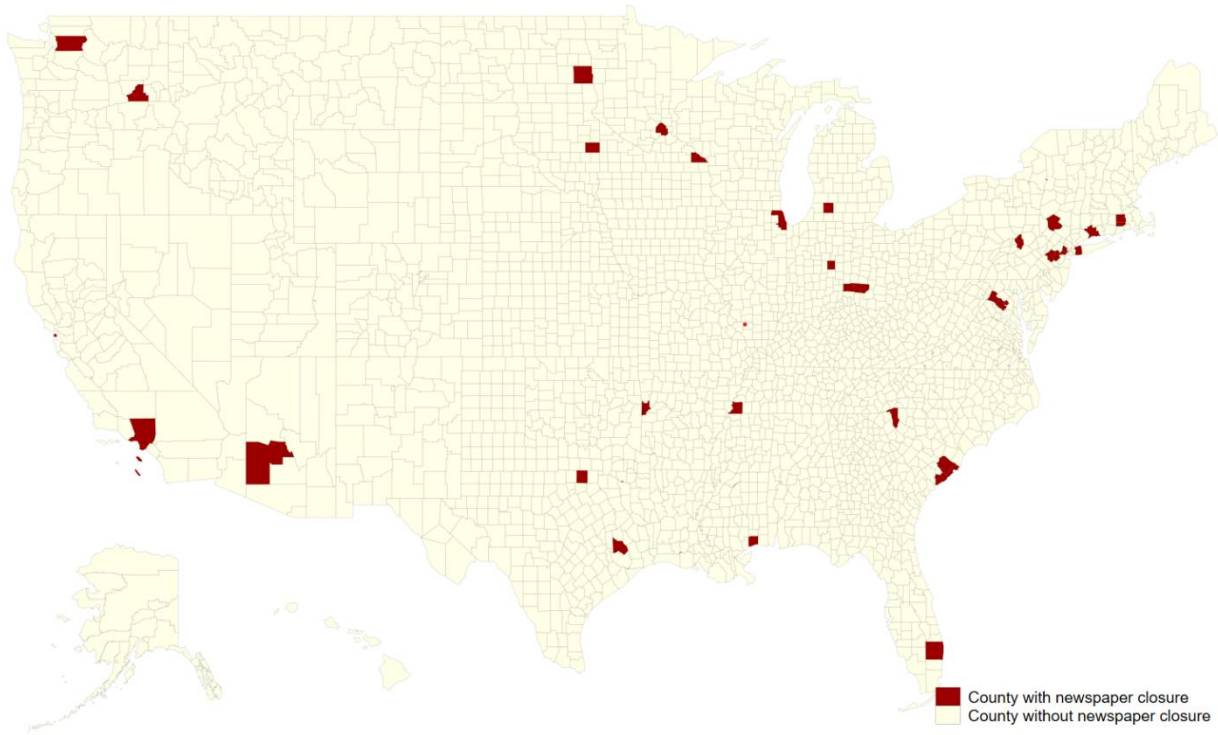

Figure 1. Map of newspaper closures.
This map shows the geographic distribution of the 38 counties affected by the 19 newspaper closures used in our analyses.

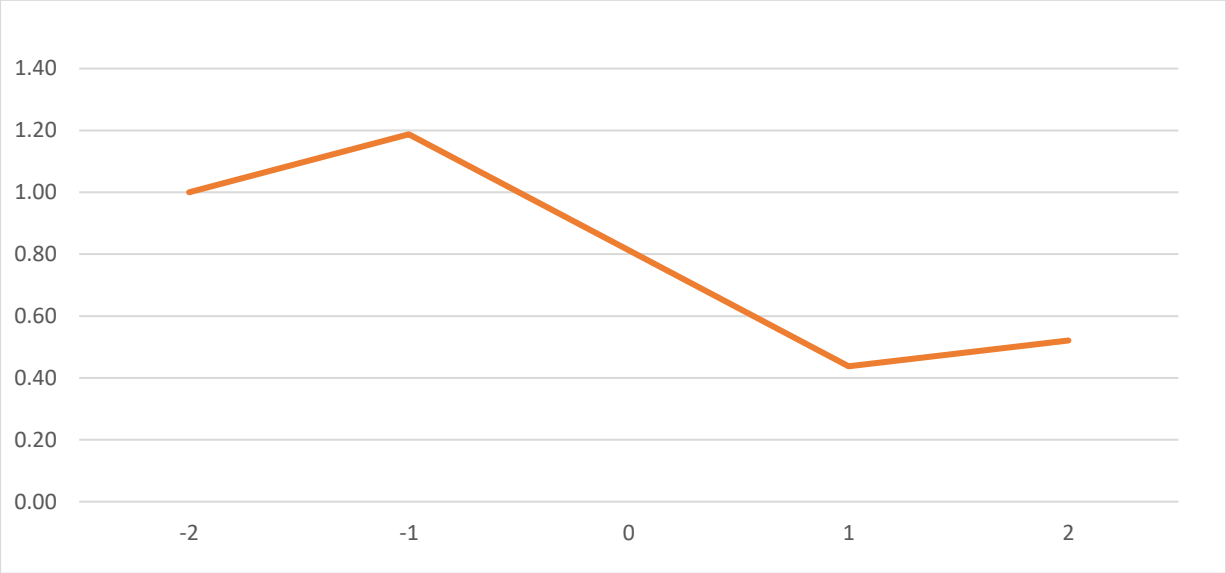

Figure 2. Change over time in local news coverage of CEO-worker pay disparity

This chart illustrates the change over time in local news coverage pertaining to CEO-worker pay disparity around the time of newspaper closures. For firms headquartered in a closure county, we count the number of news articles published by local newspapers, retrieved from Factiva, that discuss topics related to the firms' CEO-worker pay disparities. The *y*-axis denotes the value of each year as relative to the two years prior to a local newspaper closure, in terms of the number of relevant articles. The *x*-axis denotes the year relative to the newspaper closure (year 0).

Table 1. Descriptive statistics

This table presents summary statistics for the pay ratio and its components in Panel A, pay variables by (one-digit SIC) industry in Panel B, pay variables by year in Panel C, disclosure details reported in the pay ratio section of the proxy statement in Panel D, and firm characteristic that are potentially related to the pay ratio in Panel E. All variables are defined in the Appendix.

Panel A. Pay variables

Variable	N	Mean	Std. dev.	25th	Median	75th
Pay ratio	9,770	139.193	284.111	32.800	70.000	146.000
CEO pay (in thousand $)	9,770	6,782.068	5,943.485	2,525.465	5,079.197	9,112.109
Worker pay (in thousand $)	9,770	86.009	63.565	46.321	67.893	106.238
LN Pay ratio	9,770	4.238	1.175	3.520	4.263	4.990
LN CEO pay	9,770	15.282	1.342	14.742	15.441	16.025
LN Worker pay	9,770	11.117	0.762	10.743	11.126	11.573

Panel B. Pay variables by industry

		Pay ratio		CEO pay		Worker pay	
SIC1-Industry	N	Median	Mean	Median	Mean	Median	Mean
Finance, insurance, real estate	2,476	45.000	70.695	3,740.056	5,365.983	71.325	92.972
Agriculture, forestry, fishing	22	38.750	62.432	1,845.108	3,308.634	41.478	48.785
Mining	444	51.000	66.061	5,746.792	7,025.055	116.134	118.534
Construction	161	70.000	87.041	5,346.244	6,933.279	82.267	82.664
Transportation and utilities	772	68.000	116.720	5,315.768	7,816.989	81.259	89.381
Wholesale trade	256	84.000	120.738	4,871.595	5,574.582	57.510	57.389
Services	1,490	88.000	148.346	6,213.396	7,993.819	70.352	78.962
Manufacturing	3,539	81.000	153.661	5,481.551	7,137.113	65.425	91.431
Retail trade	589	222.000	422.948	5,340.240	6,441.897	22.219	28.935

Panel C. Pay variables by year

		Pay patio		CEO pay		Worker pay	
Year	N	Median	Mean	Median	Mean	Median	Mean
2017	1,786	56.780	119.489	3,984.451	5,548.407	64.166	81.425
2018	2,045	70.000	128.339	4,662.468	6,308.391	65.422	80.899
2019	1,995	70.000	135.393	5,048.133	6,605.766	67.196	84.745
2020	1,962	69.530	149.144	5,306.797	6,995.408	69.574	89.285
2021	1,982	83.000	162.124	6,525.483	8,348.737	72.068	93.441

Panel D. Disclosure details

	N	Mean	Std. dev.	Median
Several pay ratios	9,770	0.091	0.288	0.000
Part-time worker	9,770	0.021	0.142	0.000
Fraction non-US	9,770	0.111	0.242	0.000
De minimis	9,770	0.223	0.416	0.000
Cost-of-living adj.	9,770	0.006	0.079	0.000
LN Length PR section	9,770	5.865	0.415	5.886

Panel E. Firm characteristics

	N	Mean	Std. dev.	25th	Median	75th
Size	9,770	7.755	1.645	6.612	7.679	8.811
Book to market	9,770	0.663	0.301	0.419	0.676	0.920
Capex	9,770	0.030	0.039	0.004	0.018	0.040
ROA	9,770	0.039	0.131	0.017	0.048	0.094
Stock return	9,770	0.140	0.471	-0.140	0.070	0.326
Leverage	9,770	0.295	0.220	0.097	0.280	0.440

Table 2. Newspaper closures by year

This table presents the distribution of newspaper closures in our sample by year. We only include firms that are present in both the pre- and post-closure periods. As our sample spans the period 2017–2021, this research design implies that newspaper closures before 2018 or after 2020 are excluded from our analyses to ensure that the firms included are present both in the pre- and post-closure periods**.**

Year	Number of newspaper closures	% of total
2017	-	-
2018	5	26%
2019	6	32%
2020	8	42%
2021	-	-
Total	19	100%

Table 3. Newspaper closures and within-firm pay disparity

This table examines the effect of newspaper closures on within-firm pay disparity. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio		
	(1)	(2)	(3)
Closure	0.225**	0.170**	0.153**
	(2.576)	(2.494)	(2.366)
Size		0.392***	0.376***
		(33.798)	(31.563)
Book to market		0.930***	0.890***
		(11.684)	(11.547)
Capex		0.060	0.070
		(0.118)	(0.142)
ROA		0.744***	0.722***
		(5.250)	(5.183)
Return		0.287***	0.281***
		(12.604)	(12.484)
Leverage		0.651***	0.603***
		(7.233)	(6.811)
Several pay ratios			-0.259***
			(-5.219)
Part-time worker			0.731***
			(4.774)
Fraction non-US			0.479***
			(6.403)
De minimis			0.069*
			(1.801)
Cost-of-living adj.			0.107
			(0.668)
LN Length PR section			0.108***
			(2.912)
Industry FE	Yes	Yes	Yes
State-year FE	Yes	Yes	Yes
Observations	9,770	9,770	9,770
Adjusted R2	0.229	0.507	0.527

Table 4. Pay disparity versus pay levels

This table reports the relation between newspaper closures and the reported pay ratios and pay levels. Panel A re-estimates our baseline regressions after controlling for pay levels. Panel B examines the effect of newspaper closures on the two components of the pay ratio. The main variables are as follows. *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. *LN CEO pay* is the natural logarithm of the total annual CEO pay plus one. *LN Worker pay* is the natural logarithm of the total annual median worker pay. *Closure* is a dummy variable that takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Controlling for pay levels

	LN Pay ratio			
	(1)	(2)	(3)	(4)
Closure	0.121**	0.094**	0.108**	0.087*
	(2.149)	(1.992)	(2.048)	(1.869)
LN CEO pay	0.494***		0.491***	
	(14.117)		(14.569)	
LN Worker pay		-0.802***		-0.780***
		(-27.334)		(-26.033)
Control for disclosure details	No	No	Yes	Yes
Control for firm characteristics	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
State-year FE	Yes	Yes	Yes	Yes
Observations	9,770	9,770	9,770	9,770
Adjusted R^2	0.730	0.644	0.745	0.648

Panel B. Newspaper closures and pay levels

	LN CEO pay		LN Worker pay	
	(1)	(2)	(3)	(4)
Closure	0.091*	-0.052	-0.084*	-0.034
	(1.833)	(-1.064)	(-1.691)	(-0.888)
LN Pay ratio		0.940***		-0.330***
		(13.363)		(-16.070)
Control for disclosure details	Yes	Yes	Yes	Yes
Control for firm characteristics	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
State-year FE	Yes	Yes	Yes	Yes
Observations	9,770	9,770	9,770	9,770
Adjusted R^2	0.305	0.625	0.525	0.647

Table 5. Dynamic effects

This table reports the results from a dynamic-effects model. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variables include various treatment indicators for the years surrounding the closure event. $Closure_{t-2}$ is a dummy variable that equals one for two or more years before the newspaper closure, and zero otherwise. $Closure_{t-1}$ is a dummy variable indicating the year before the newspaper closure. $Closure_{t+1}$ is a dummy variable indicating the year after the newspaper closure. $Closure_{t+2}$ is a dummy variable that equals one for two or more years after the newspaper closure, and zero otherwise. These treatment windows are benchmarked against the year of the newspaper closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio	
	(1)	(2)
$Closure_{t-2}$	0.062	0.050
	(0.839)	(0.695)
$Closure_{t-1}$	0.104	0.100
	(1.530)	(1.505)
$Closure_{t+1}$	0.170**	0.156**
	(2.284)	(2.196)
$Closure_{t+2}$	0.178**	0.157**
	(2.291)	(2.106)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,770	9,770
Adjusted R^2	0.507	0.527

Table 6. Cross sectional tests

This table presents the results of cross-sectional analyses that investigate whether variation in firms' exposure to local press coverage shocks moderate the effect of newspaper closures on pay disparity. Panel A explores the role of the level of local press coverage in moderating the newspaper closure effect, while Panel B assesses the role of the firm's geographical scope in moderating the newspaper closure effect. The main variables are as follows. *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. *Closure* is a dummy variable that takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. *Low NP county* is a dummy variable that takes the value of one for counties with two or fewer newspapers pre-closure, and zero otherwise. *Local firm* is a dummy variable that equals one if at most two states are mentioned in a firm's annual report, and zero otherwise. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Level of local press coverage

	LN Pay ratio	
	(1)	(2)
Closure	-0.158	-0.139
	(-1.351)	(-1.173)
Low NP county	-0.021	-0.025
	(-0.485)	(-0.583)
Closure × Low NP county	0.434***	0.385***
	(3.050)	(2.738)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,770	9,770
Adjusted R^2	0.508	0.527

Panel B. Geographical scope of the firm

	LN Pay ratio	
	(1)	(2)
Closure	0.120	0.105
	(1.484)	(1.364)
Local firm	-0.005	-0.083*
	(-0.095)	(-1.674)
Closure × Local firm	0.381**	0.326**
	(2.182)	(2.081)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	7,627	7,627
Adjusted R^2	0.500	0.520

Table 7. Neighboring county matching

This table presents the results of the newspaper closure effect on pay disparity using a neighboring-county matched sample. In constructing the sample for this analysis, we match each county where a closure occurs with a neighboring control county (within 50 miles radius) that does not experience a closure but has a similar population size. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio	
	(2)	(3)
Closure	0.297***	0.274***
	(3.240)	(3.148)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	2,394	2,394
Adjusted R^2	0.524	0.541

Table 8. Falsification test

This table presents the results from falsification tests on the pay ratio following the closure of local newspapers. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variable $Closure_{pseudo}$ is a pseudo treatment indicator constructed using a two-step randomization procedure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio	
	(1)	(2)
$Closure_{pseudo}$	-0.001	0.001
	(-0.001)	(0.035)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,770	9,770

Table 9. Local newspapers and shareholder responses

This table investigates whether local newspapers affects shareholder responses to the initial pay ratio disclosure. Panel A examines shareholder response via equity market reactions. Panel B examines shareholder response via say-on-pay votes. The main variables are as follows. *CAR [-1, +5]* is the cumulative abnormal return between event days -1 and +5, where abnormal returns are computed as the difference between a firm's daily return and the value-weighted CRSP market return, with both returns excluding dividends. Day 0 in event time is identified as the earliest filing date in 2018 of either the preliminary or the definitive proxy statement. *% Votes against* is the number of votes cast against the proposal divided by the total number of votes cast on the proposal. *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. *County with NP* is a dummy variable that equals one if a county has at least one newspaper in 2018, and zero otherwise. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. Similar to Pan et al. (2022), the *t*-statistics reported in parentheses in Panel A (Panel B) are based on robust standard errors double-clustered by announcement (annual meeting) date and state. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Shareholder response via equity market reactions

	CAR [-1, +5]	
	(1)	(2)
LN Pay ratio	0.001	0.001
	(0.281)	(0.334)
County with NP	0.013***	0.013***
	(3.197)	(3.333)
LN Pay ratio × County with NP	-0.003***	-0.003***
	(-2.825)	(-2.976)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
Observations	2,041	2,041
Adjusted R^2	0.032	0.031

Panel B. Shareholder response via say-on-pay votes

	% Votes against	
	(1)	(2)
LN Pay ratio	0.019***	0.020***
	(6.498)	(5.657)
County with NP	-0.030*	-0.030*
	(-1.731)	(-1.948)
LN Pay ratio × County with NP	0.006*	0.006**
	(1.822)	(2.042)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
Observations	1,786	1,786
Adjusted R^2	0.036	0.039

Table 10. CEO age and the newspaper closure effect

This table presents results for the differential effect of newspaper closures on within-firm pay disparity for firms led by young CEOs and those led by old CEOs. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variables are as follows. *Closure* is the treatment indicator that takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. *Young CEO* is a dummy variable that equals one if the age of the CEO is in the lowest quartile of the CEO age distribution, and zero otherwise. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio	
	(1)	(2)
Closure	0.131	0.107
	(1.521)	(1.304)
Young CEO	-0.012	-0.040
	(-0.278)	(-0.965)
Closure × Young CEO	0.349**	0.285**
	(2.228)	(2.028)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	6,609	6,609
Adjusted R^2	0.454	0.483

Table 11. Inequality aversion and the newspaper closure effect

This table examines whether local attitudes toward income inequality affects the effect of newspaper closures on within-firm pay disparity. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variables are as follows. *Closure* is the treatment indicator that takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. *High Democratic* is a dummy variable that equals one if *% Democratic* is in the top quartile of its distribution and zero otherwise, where *% Democratic* is the percentage of votes obtained by the Democratic Party in 2020 Presidential Election in a count. *High social capital* is a dummy variable that equals one if *Social capital* is in the top quartile of its distribution and zero otherwise, where *Social capital* is the first principal component from a factor analysis based on voter turnout rates, response rates in US census surveys, total numbers of ten types of social organizations, and total numbers of non-profit organizations. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Inequality aversion proxied by democratic leaning

	LN Pay ratio	
	(1)	(2)
Closure	0.001	-0.020
	(0.005)	(-0.277)
High Democratic	-0.055	-0.058
	(-1.036)	(-1.132)
Closure × High Democratic	0.462***	0.470***
	(3.266)	(3.553)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,770	9,770
Adjusted R^2	0.508	0.528

Panel B. Inequality aversion proxied by social capital

	LN Pay ratio	
	(1)	(2)
Closure	0.142**	0.126*
	(1.986)	(1.845)
High social capital	-0.019	-0.022
	(-0.401)	(-0.479)
Closure × High social capital	0.304*	0.296*
	(1.684)	(1.684)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,770	9,770
Adjusted R^2	0.507	0.527

Appendix. Variable definitions

Variables	Definition	Source
Pay variables		
LN Pay ratio	The natural logarithm of one plus the pay ratio between the total annual CEO pay and the total annual median worker pay reported in the firm's proxy statement.	SEC Edgar
LN CEO pay	The natural logarithm of the reported total annual CEO pay (thousands $) plus one.	SEC Edgar
LN Worker pay	The natural logarithm of the total annual median worker compensation (thousand $).	SEC Edgar
Disclosure details		
Several pay ratios	A dummy variable that equals one if a firm reports two or more pay ratios in the definitive proxy statement for a firm year and zero otherwise.	SEC Edgar
Fraction non-US	The reported proportion of non-U.S. employees in the definitive proxy statement. For companies that do not report this information, it is equal to the number of employees in foreign countries divided by the total number of employees if both numbers are available through Compustat and Compustat segment data. For all other companies, this variable is equal to zero.	SEC Edgar, Compustat segment, and Compustat.
De minimis	A dummy variable that is equal to one if in the process of identifying its median employee a firm excludes some non-U.S. employees under the de minimis exemption, and zero otherwise.	SEC Edgar
Part-time worker	A dummy variable that equals one if a firm's median employee is a part-time employee and zero otherwise, as reported in the firm's proxy statement.	SEC Edgar
Cost-of-living adj.	A dummy variable that equals one if a firm applies the cost-of-living adjustment to the calculation of the total annual median worker pay and zero otherwise.	SEC Edgar
LN Length PR section	The natural logarithm of the number of characters of the pay ratio section in the definitive proxy statement plus one.	SEC Edgar

Local Newspaper closure		
Closure	A dummy variable that equals one for the years following a newspaper closure, and zero for the years prior to the closure.	Editor and Publisher Yearbook, U.S. Newspaper Directory of Chronicling America, Newspaper Death Watch, and other news content.
Firm characteristics		
Size	Firm size, computed as the natural logarithm of market capitalization.	Compustat
Book to market	Book value of total assets divided by the sum of book value of assets plus market value of equity minus book value of equity.	Compustat
Capex	Capital expenditure divided by total assets.	Compustat
ROA	Earnings before taxes and interest divided by total assets.	Compustat
Return	Annual stock return.	Compustat
Leverage	The sum of debt in current liabilities plus long-term debts divided by total assets.	Compustat
Variables used in further analyses		
Low NP county	A dummy variable that equals one for counties with two or fewer local newspapers, and zero otherwise.	Editor and Publisher Yearbook, U.S. Newspaper Directory of Chronicling America, Newspaper Death Watch, and other news content.
Young CEO	A dummy variable that equals one if the age of the CEO is in the lowest quartile of the CEO age distribution, and zero otherwise.	Execucomp
High Democratic	A dummy variable that equals one if *% Democratic* is in the top quartile of its distribution and zero otherwise, where *% Democratic* is the percentage of votes obtained by the Democratic Party in 2020 Presidential Election in a count.	MEDSL
High social capital	A dummy variable that equals one if *Social capital* is in the top quartile of its distribution and zero otherwise, where *Social capital* is the first principal component from a factor analysis based on voter turnout rates, response rates in US census surveys, total numbers of ten types of social organizations, and total numbers of non-profit organizations.	MEDSL, U.S. Census Bureau, CBP, and NCCS

CAR [-1, +5]	The cumulative abnormal return between event days -1 and +5, where abnormal returns are computed as the difference between a firm's daily return and the value-weighted CRSP market return, with both returns excluding dividends. Day 0 in event time is identified as the earliest filing date in 2018 of either the preliminary or the definitive proxy statement. To control for outliers, we eliminate 148 firms with daily abnormal returns that deviate by more than three standard deviations from the sample mean, where both mean and standard deviation of daily abnormal returns are calculated across all stocks in our sample across all days in 2018.	CRSP, SEC Edgar
County with NP	A dummy variable that is equal to one if a county had at least one local newspaper in 2018, and zero otherwise.	Editor and Publisher Yearbook, U.S. Newspaper Directory of Chronicling America, Newspaper Death Watch, and other news content.
% Votes against	The number of votes cast against the proposal divided by the total number of votes cast on the proposal.	SEC Edgar
Local firm	A dummy variable that equals one if at most two states are mentioned in a firm's annual report in sections "Item 1: Business", "Item 2: Properties", "Item 6: Consolidated Financial Data", and "Item 7: Management's Discussion and Analysis" of the annual report filed on Form 10-K with the SEC.	SEC Edgar

Internet Appendix for
"Do local newspapers curb income inequality? Evidence from CEO-worker pay ratio disclosure"
(Not intended for publication)

This Internet Appendix presents the results of additional analyses and robustness tests discussed in the main text. The tables are organized as follows:

Table IA1. Alternative pay ratio measure

This table examines the effect of newspaper closures on within-firm pay disparity using an alternative pay ratio measure. The dependent variable *ln(CEO pay/Worker pay)* is the natural logarithm of the reported CEO pay over reported median worker pay. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	ln(CEO pay/Worker pay)		
	(1)	(2)	(3)
Closure	0.229***	0.173**	0.156**
	(2.615)	(2.492)	(2.387)
Control for disclosure details	No	No	Yes
Control for firm characteristics	No	Yes	Yes
Industry FE	Yes	Yes	Yes
State-year FE	Yes	Yes	Yes
Observations	9,749	9,749	9,749
Adjusted R^2	0.230	0.513	0.535

Table IA2. Stacked difference-in-differences

This table examines the effect of newspaper closures on within-firm pay disparity using a stacked difference-in-differences design. To apply the stacked DiD method, we create 19 event-specific cohorts that correspond to 19 newspaper closures. Each event cohort consists of firms treated by the closure event and control firms that never experience any newspaper closures for a 3-year panel by event time ($t-1$ to $t+1$) around the corresponding closure year t. We then stack all the event cohorts in relative time to estimate an average treatment effect. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county l, and zero for the years prior to the closure. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. All specifications include industry, state-year, and cohort fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The t-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio		
	(1)	(2)	(3)
Closure	0.253***	0.157**	0.149**
	(2.704)	(2.096)	(2.075)
Control for disclosure details	No	No	Yes
Control for firm characteristics	No	Yes	Yes
Industry FE	Yes	Yes	Yes
State-year FE	Yes	Yes	Yes
Cohort FE	Yes	Yes	Yes
Observations	96,663	96,663	96,663
Adjusted R^2	0.253	0.520	0.538

Table IA3. Newspaper closures and county employment and wage growth

This table examines the effect of newspaper closures on percentage changes in county employment or wage levels. The dependent variable *Employment Growth* (*Wage Growth*) is the percent change from preceding year in county employment (wage) level, measured in basis points. Data on county employment or wage growth are collected from the Bureau of Economic Analysis. The main explanatory variable *Closure* takes a value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. All specifications include state-year fixed effects. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust county-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	Employment growth	Wage growth
	(1)	(2)
Closure	-0.034	0.024
	(-0.125)	(0.047)
State-year FE	Yes	Yes
Observations	1,834	1,834
Adjusted R^2	0.678	0.476

Table IA4. Additional county-level controls

This table re-estimates our main specifications after controlling for additional county-level variables. The dependent variable *LN Pay ratio* is the natural logarithm of one plus the pay ratio reported in the firm's proxy statement. The main explanatory variable *Closure* takes the value of one for the years following a newspaper closure in county *l*, and zero for the years prior to the closure. GDP growth is the percentage change in the county's GDP from the preceding year (measured in basis points), obtained from the Bureau of Economic Analysis. Population is the natural logarithm of one plus the county's population, collected from the Bureau of Economic Analysis. All other variables are defined in the Appendix. Continuous variables are winsorized at the 1st and 99th percentiles. Both specifications include industry and state-year fixed effects. Industries are defined based on the two-digit Standard Industrial Classification (SIC) codes. The *t*-statistics reported in parentheses are based on the heteroscedasticity-robust firm-clustered standard errors. ∗∗∗, ∗∗, and ∗ indicate significance at the 1%, 5%, and 10% levels, respectively.

	LN Pay ratio	
	(1)	(2)
Closure	0.176**	0.153**
	(2.476)	(2.278)
GDP growth	-0.003	-0.002
	(-0.798)	(-0.629)
Population	0.035*	0.034*
	(1.851)	(1.887)
Control for disclosure details	No	Yes
Control for firm characteristics	Yes	Yes
Industry FE	Yes	Yes
State-year FE	Yes	Yes
Observations	9,583	9,583
Adjusted R^2	0.506	0.526