

The Additional Costs of CEO Compensation: The Effect of Relative Wealth Concerns of Employees

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May 2026

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Keywords: CEO compensation, relative wealth concerns, employee wages, inequality aversion,

JEL Classification: D63, G02, G34, J31

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The additional costs of CEO compensation:
The effect of relative wealth concerns of employees*

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May 29, 2026

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“A [...] concern is that paying vast sums to bosses when times are tough for common folk can have unwanted consequences, if it emboldens employees to make demands that their companies cannot afford.” *The Economist*

1. Introduction

Some of the strongest opposition to high and increasing CEO pay comes from rank-and-file employees, in particular from employees within the same firm. It is difficult to explain this phenomenon with normative preferences, because formally CEOs are employees and paid by shareholders, so regular employees should, in principle, not object to CEOs being overpaid. A potential explanation is that employees envy the higher pay of CEOs, i.e., employees suffer disutility from the gap between their own pay and the CEO’s pay.¹ Formally, such preferences are called inequality aversion, relative wealth concerns, or fair wages (see [Garcia and Strobl \(2011\)](#), [Liu and Sun \(2016\)](#), [DeMarzo and Kaniel \(2017\)](#), and [Akerlof and Yellen \(1990\)](#)).²

We consider a principal-agent model where the principal designs a contract with two agents: the CEO and the employee who is subject to relative wealth concerns. The employee represents all employees in the firm. In such a model, the wage of the employee is an increasing function of the wage of the CEO. This is because employees experience an additional disutility when the CEO pay

¹To develop this idea more formally, employee i accepts a work contract offered by firm j only if the $Wage_{i,j}$ satisfies $Wage_{i,j} \geq \Omega_i((CEO\ total)_j)$, where $\Omega_i((CEO\ total)_j)$ – employee i ’s reservation utility – is increasing in the pay $(CEO\ total)_j$ that the CEO of firm j receives. Envy is predominantly a within-firm phenomenon, because proximity, shared evaluation systems, and perceived surplus allocation intensify social comparison.

²It is widely accepted that happiness depends not only on one’s own material payoff but also on others’ payoffs. [Schmitt and Marwell \(1972\)](#) show that subjects withdraw from profitable experiments if they receive inequitable payoffs. Using data on British workers, [Clark and Oswald \(1996\)](#) show that worker satisfaction levels are negatively related to their comparison wage rates. [Cohn et al. \(2015\)](#) and [Gächter and Thöni \(2010\)](#) provide (field) experiments to corroborate the fair wage hypothesis that was proposed by [Akerlof and Yellen \(1990\)](#). According to this hypothesis, the fair wage of employees is determined not only by the market clearing wage but also by comparison with salient others. In addition, [Fehr and Schmidt \(1999\)](#) and [Bolton and Ockenfels \(2000\)](#) find that a simple model where someone’s true payoff consists of her own pay and own relative payoff to other members of her group can explain many laboratory experiments.

is raised, so the firm raises the employees' pay to compensate them for this disutility and to prevent them from leaving the firm. We take this prediction to the data and ask whether employees truly compare themselves to the CEO.

We find evidence that higher CEO compensation is positively related to employee wages within firms – in levels and in differences. To alleviate potential endogeneity concerns, we use a law change in 2006 that required individual executive compensation disclosure as an exogenous shock and find that increased salience of CEO compensation temporarily increases employee pay at treated firms after 2006.

This raises the question of the specific mechanism underlying employee envy. We find that envious behavior is geared toward CEOs themselves rather than toward the management team. By analyzing a large sample of press articles on executive compensation, we find that press reporting alone does not lead to higher employee wages. However, when the press coverage is negative, we observe an economically and statistically significant increase in employee wages.

These findings have far-reaching consequences for executive compensation. Relative wealth concerns increase the costs of executive compensation due to the need to increase employee wages. Any additional payment made to the CEO for providing incentives also leads to higher employee wages to compensate employees for their (perceived) losses from envy. For rank-and-file employees, the increase in wages is small. However, this increase scales with firm size. The average CEO in our sample receives €2.5 million a year. If a firm increases her pay by 1% (=€25,000 for the average CEO), then the firm will pay an additional compensation of €5.5 to the median employee with an average annual salary of €34,500³. For the average firm in our sample with 44,760 employees, this amounts to €247,000 per year, increasing the total wage bill by €272,000 per year. If the firm accounts for the costs of employee envy, a 1 percentage point increase in CEO compensation

³We use the increase in the pay of the median employee in this calculation because we can observe only the median but not the mean salary in our establishment data.

increases the total wage bill by more than 10% of CEO compensation on average.

The main challenge in studying the effect of high CEO compensation on employees' pay is the availability of data. We construct a CEO-employee panel data set for German firms by combining a data set on CEO compensation with a data set on employee wages. Data on CEO compensation are hand-collected from firms' annual reports. The data on employee wages come from the Research Data Center of the German Federal Employment Agency. This agency has established a complete record of employee wages in German establishments since 1975 (since 1992 for East Germany). The resulting panel data set contains more than 200,000 establishment-year observations and is available from 2000 to 2011. This unique data set enables us to test several hypotheses on the relationship between CEO compensation and employee wages.

We start by analyzing wage levels using lagged CEO compensation and control variables, while accounting for unobserved heterogeneity with firm fixed effects. We find evidence that employee wages are positively related to higher within-firm CEO compensation. When CEO compensation increases by 1%, the median employee wage increases by 0.016%. This pattern may also reflect productivity dynamics and rent-extraction: In phases where productivity is high, the pressure on wages decreases and all wages increase. We perform several tests in this paper to reduce this concern. First, we include ROA, market-to-book ratio, and total factor productivity (TFP) as control variables which help capture changes in productivity. Second, we examine changes in employee wages and regress those on lagged changes of CEO compensation, which removes the effect of time-invariant unobservables at the establishment level. Third, we use a law change, which requires firms to disclose individual executive compensation in their annual reports. Before the law change, rank-and-file employees from treated firms could observe only the total compensation a management board receives but not the individual components. This means that CEO compensation becomes more salient after the law change, allowing us to test whether employees' envy is increasing once

the CEO compensation is published. We find that employee wages increase significantly by 8.5% for treated firms after the law change before the effect attenuates again.

The analyses thus far suggest that increases in executive compensation are followed by small but consistent wage increases for rank-and-file employees. This raises the question of the precise mechanism underlying employee envy. We first use the compensation of other managers and find that envious behavior is geared toward CEOs themselves rather than toward the management team. Second, we collect a large sample of press articles and proxy employee attention and sentiment by using the sums of press articles and *negative* press articles on CEO compensation, respectively. Our analysis shows that press reporting alone does not lead to higher employee wages. However, when the press coverage is negative, we observe an economically and statistically significant increase in employee wages. This increase is also economically significant: A rank-and-file employee obtains a 0.61% higher wage if negative press coverage increases by one standard deviation.

An alternative explanation for our findings is CEO compassion, defined as an other-regarding preference whereby the CEO places positive weight on the welfare of rank-and-file employees, as reflected in a more compressed pay gap than would be predicted under purely profit-maximizing behavior. We distinguish between two different "types" of CEO compassion: First, true compassion indicates that CEOs feel bad about a large pay gap regardless of whether employees can observe the exact gap. If this is true, then the CEO should increase employee pay with her compensation. However, we find all of our effects on employee wages by lagging CEO compensation rather than using contemporaneous values of CEO compensation. Moreover, if the publication of CEO pay does not matter, the disclosure results are hard to rationalize. Thus, we find no evidence that the CEO is truly compassionate. Second, CEOs could feel compassionate *because* the firm discloses their compensation, and they feel bad about the wage gap becoming public. To analyze this possibility, we use the identification strategy of Cronqvist et al. (2009), who argue that CEOs feel more compassion

toward employees who are geographically closer to them. Therefore, we insert a cross-effect of the state variable where the headquarters is situated with CEO pay and find an insignificant and positive coefficient. We conclude that employee envy is the best explanation of our findings.

Finally, we regress employee turnover on CEO pay. [Wade et al. \(2006\)](#) show that CEO overpayment is associated with higher turnover for other managers. Does this relationship also hold for rank-and-file employees? We find negative but mostly insignificant results. Thus, CEO compensation does not seem to be strongly related to employee turnover.

Overall, we document employee envy toward the CEO, accompanied by pronounced attention and negative sentiment biases. When negative sentiment is elevated—proxied by adverse press coverage of executive compensation—employees experience a significant increase in wages. These wage adjustments appear to reflect compensation increases that would otherwise have been implemented more gradually over subsequent periods. As envious behavior subsides, firms revert toward their baseline wage distribution. This interpretation is consistent with evidence that boards in the UK are reluctant to grant CEOs compensation substantially above that of their peers, in part to avoid triggering upward pressure on employee wages (see [Edmans et al. \(2023\)](#)).

Several empirical studies have examined the relation between CEO compensation and employee wages. [Cronqvist et al. \(2009\)](#) work with Swedish data and relate managerial entrenchment to wages of regular employees. They find that more entrenched CEOs pay higher employee wages, especially for employees closer to the CEO, both geographically and hierarchically. They argue that CEOs derive private benefits from treating colleagues in their vicinity nicely. [Wade et al. \(2006\)](#) regress CEO compensation on CEOs’ personal traits and firm variables. They use the residuals from this regression as a proxy for CEO over- or underpayment and show that CEO overpayment is related to higher pay for other managers (see also [Bloom and Michel \(2002\)](#)).

This paper focuses on the participation constraint. However, there is a substantial literature on employee incentives, i.e., the incentive compatibility constraint. [Cullen and Perez-Truglia \(2022\)](#) show, in a field experiment, that vertical pay differences can be motivating when workers have the

prospect of promotion to higher-paying positions. [Mueller et al. \(2017b\)](#) find that larger inequalities between top- and bottom-level jobs are associated with higher productivity in British firms. For U.S. firms, [Faleye et al. \(2013\)](#) do not find a significant effect of increased pay gaps on employee productivity, except in firms with strong tournament incentives. Similarly, [Kale et al. \(2009\)](#) show that, among U.S. top management teams, a larger pay gap between the CEO and senior managers is associated with higher firm performance. Taken together, these studies highlight the incentive compatibility constraint, whereas our paper focuses on the participation constraint. Both channels—participation and incentive compatibility—are consistent with models of relative wealth concerns, as argued by [Grund and Sliwka \(2005\)](#) and [Neilson and Stowe \(2010\)](#).

Our analysis—particularly the difference-in-differences results—suggests an additional mechanism complementing [Pan et al. \(2022\)](#), who study the first-time disclosure of CEO–employee pay ratios in 2018 and document that firms with higher pay gaps subsequently underperform. They attribute this underperformance to inequality-averse shareholders. Also, [Bozos et al. \(2025\)](#) show that firms disclosing larger wage gaps experience a significant decline in customer demand.

The idea that pay transparency affects wages is well established. A recent literature examines the relationship between pay transparency and wage compression (e.g., [Bennedsen et al. \(2023\)](#), [Cullen and Pakzad-Hurson \(2023\)](#), [Cullen and Perez-Truglia \(2022\)](#), [Mas \(2017\)](#)). Our paper differs in at least two important respects. First, we provide evidence that employees react with envy toward the CEO, rather than focusing on wage compression, employee incentives, or gender wage gaps. Second, employees are able to observe CEO compensation during our sample period. However, they are not able to observe the compensation of other rank-and-file employees, as pay transparency legislation in Germany was only introduced in 2017 (see Section [2.1](#)).

Finally, [Mueller et al. \(2017a\)](#) show, on the one hand, that larger firms exhibit greater within-firm pay inequality, and on the other, that firm size has been increasing across 15 developed countries. As a result, boards of large firms face a trade-off between providing strong incentives to CEOs and avoiding heightened scrutiny from potentially envious employees.

2. Data

The sample contains all companies included in the two main German stock market indices, DAX and MDAX, between 2000 and 2011. We hand collect data on executive compensation and corporate governance from annual reports and Hoppenstedt company profiles. We do not include unlisted firms because information on executive compensation is usually unavailable for these firms. The stock market data come from *Datastream*, and the balance sheet and accounting data come from *Worldscope*.

2.1 Employees' compensation

Employment and wage data at the establishment level are obtained from the Institute of Employment Research (IAB). The IAB is the research organization of the German Federal Employment Agency, the Bundesagentur für Arbeit (BA). The BA collects employee and employer contributions to unemployment insurance and distributes unemployment benefits. All German businesses are required to report detailed information on employment and wages to the BA. Individual-level data are aggregated at the establishment level, made anonymous, and offered for scientific use by the IAB (the Establishment History Panel). An establishment is any facility with a separate physical address, such as a factory, service station, restaurant, or office building. The IAB offers detailed establishment-level data on industry, location, employment, employee education, age, nationality, and wages and provides these data as establishment-level statistics, such as sums, medians, and quartiles on wages and employment according to different classifications and breakdowns.

IAB does not have a firm identifier, which is why manual matching is necessary. At our request, the IAB matched our sample of listed firms with their establishment-level database using an automatic procedure, based on company name and address information (city, zip code, street, and house number). Additionally, we provide the IAB with the names of major subsidiaries listed in

the annual reports of our sample firms in 2006. All cases not unambiguously matched by the automatic matching procedure are checked manually to avoid mismatching. The matching procedure is performed for 2004, 2005, and 2006. Firms are dropped if they do not exist during the period 2004 through 2006. All establishments are matched only once to our sample firms. This matching procedure does not allow us to identify changes in establishment ownership after 2006. Thus, if an establishment is acquired before 2004 or sold to another firm after 2006, it is treated as if it belonged to the matched firm after the acquisition or before the sale. This blurs the matches between firms and establishments and may lead to an attenuation bias working against finding significant results. Table I provides an overview of our sample of firms and establishments over time.

German establishments are required to report the salaries of their employees up to an upper earnings limit (social security contribution ceiling) that is annually adjusted (West German states: €52,800 in 2000 up to €66,000 in 2011. East German states: €43,600 in 2000 up to €57,600 in 2011). When this limit has been reached, establishments are required only to report the ceiling. In our data set, the median average wage for the establishment is equal to the ceiling value for the respective year for 5.12% of the observations. Therefore, we set the employee wage as a missing value when the upper limit is reached.

While the fiscal years of German firms are mostly from January to December, the establishment years for the IAB data are from July to June. Therefore, we lead all the variables from *Worldscope* by six months relative to IAB years. Effectively, we assign year-end values from *Worldscope* to June 30 information on employment and wages of the same year.

2.2 CEO compensation

We hand-collected data on compensation for CEOs and other members of the management board from firms' annual reports. If a firm discloses the individual compensation, we record the payment for each executive, while for all the other firms, the total compensation for the management board

is recorded.

Managerial compensation consists of several components: a fixed salary, remuneration in kind, annual bonus, and compensation from long-term incentive programs. Long-term incentive programs include stock options, stock appreciation rights, and other stock-based instruments. All these separate components of compensation are recorded if available. Our principal variable *CEO total* is the aggregate compensation that is mentioned in the Table “Board of Management Compensation - Aggregate Compensation” in the annual report. This is the aggregate value of the realized cash and bonus payments and the promised long-term compensation. It seems natural that employees focus on this value because it is usually reported in the press. Some executives in our panel data set join or leave the management board during the year. Their remuneration values are then adjusted for the period in office to make them comparable to the standard annual compensation.

2.3 Measures of firm performance and productivity

In addition to the performance measures ROA and the market-to-book ratio, we employ total factor productivity (TFP), constructed following the methodology of Faleye et al. (2006, 2013). Specifically, we assume that firm output follows a Cobb–Douglas production technology, where output is proxied by net sales, labor input by the number of employees, and capital input by net property, plant, and equipment. We estimate the log-linearized production function separately for each two-digit SIC industry to account for heterogeneity in production technologies across industries. Firm-level TFP is then measured as the residual from these industry-specific regressions.

2.4 Press data

We collected all news articles on management compensation published between 2002 and 2011 in any major German newspaper or news magazine. In total, we identified 658 articles, published mostly in the business press, on the management compensation of our sample firms during this

period.⁴ Then, we manually classified each article’s tone as either positive, neutral, or negative. We create two press variables, which are at the firm-year level: (1) The variable *Total Press* is the total number of press reports on a firm’s management compensation. (2) The variable *Negative Press* is the number of press reports on a firm’s management compensation with a negative tone.

2.5 Summary statistics

Table 2 presents summary statistics and variable definitions for firm-level variables (Panel A) and establishment-level variables (Panel B).

The average firm in our sample has sales of €13.1 billion (median: 2.1 billion), which shows that our sample mostly consists of large firms. The average CEO has total annual compensation of €2.5 million and is 54 years old. The average median annual gross wage of full-time employees in our sample is €34,482 (median: 34,369). We find 658 press publications on executive compensation for our sample firms: an average per firm-year of 0.544 (*Total Press*) of which the press tone is negative toward CEO compensation in 0.139 on average (*Negative Press*).

We also consider changes in wages. Following Davis et al. (2014), we define the change in employee pay as follows:

$$\Delta Wage_t = \frac{Wage_t - Wage_{t-1}}{0.5(Wage_t + Wage_{t-1})} \quad (1)$$

with t index years.⁵ Similarly, we use the same growth rate definition for *CEO total*. The average growth rate of employee pay is 1.8% and that of CEO compensation is 5.5%.

Figure 1 contains a graphical representation of the yearly growth rate of average board compen-

⁴We selected the publications Handelsblatt, Börsen Zeitung, Wirtschaftswoche, Frankfurter Allgemeine Zeitung, Welt, Berliner Zeitung, Spiegel, Focus, and Manager Magazin on wiso-net.de. We inserted the firm’s name, “Vorstand”, and “Vergütung” simultaneously to retrieve articles. We also searched for the firm’s name, the family name of the CEO, and “Vorstandsgeh*”, or for the firm’s name, the family name of the CEO, and “Vergütung”.

⁵This growth rate metric can take values between -200% and +200% and is less skewed than standard growth rates. Davis et al. (2014) note that this growth rate measure has become standard in analyses of establishment and firm dynamics.

sation and the yearly growth rate of average employee wages over our sample period. We use board compensation instead of CEO compensation because board compensation is available for all firms and all years. The correlation between management board compensation growth and employee wage growth is 0.56.

2.6 Institutional setting

Historically, wages in German firms were mostly set through collective bargaining agreements between trade unions and employers' associations. However, in the last three decades, a major shift away from industry-level agreements has taken place. [Hassel \(1999\)](#) reports that in 1995, 53.4% of the plants were covered by industry-level wage agreements, 8.2% by firm-level agreements, and 38.4% were not covered at all. Although their sample may not be fully comparable to that of [Hassel \(1999\)](#), [Addison et al. \(2010\)](#) report that only 47.3% of the German plants had industry-level agreements in 2000, a number that drops to 35.4% by 2008. Firm-level agreements were almost stable, accounting for 2.5% in 2000 and 2.7% in 2008, whereas the plants not covered by any collective bargaining agreement increased from 50.1% in 2000 to 61.9% in 2008. Over the same period, unionization also decreased considerably in Germany. Based on survey data, [Schnabel and Wagner \(2007\)](#) estimate unionization to be approximately 33% in 1992, declining to approximately 20% in 2004. If industry- or firm-level agreements exist, these agreements are binding for all employees, as German law forbids discriminatory wage policies that disadvantage nonunion members.

As a reaction to the declining popularity of collective bargaining agreements, trade unions and employers' associations are allowed so-called opening-clauses. Since the mid-1980s, labor regulation (including wage setting) has become increasingly flexible even for firms covered by collective bargaining agreements. Many areas of regulation are no longer determined at the industry level.

Instead, works councils at the establishment level directly negotiate agreements with employers (Ellguth et al. (2012)). In particular, large firms (as in our sample) utilize these opening-clauses. Hassel and Rehder (2001) show that 55 of the 120 biggest companies in Germany negotiated a firm-level pact that deviates from the industry-level agreement during the 1990s.

However, even if firms do not use an opening-clause, they can deviate from the collective bargaining agreement as long as they pay wages above the level stipulated in the agreement. Collective bargaining agreements determine only the minimum standards. Jung and Schnabel (2011) show that more than 43% of the establishments covered by a collective agreement pay wages above the level stipulated in the collective agreement. For this 43%, the average actual wages exceed wages stipulated by the collective bargaining agreement by approximately 10%. Both numbers increase with the size of an establishment, i.e., positive deviations are more likely for the large firms in our data set. Taken together, these studies show that wage setting is rather flexible (in both directions) at the firm level in Germany.

3. The relation between CEO compensation and employee wages

3.1 Wage level results

We hypothesize that employees who have relative wealth concerns experience an additional disutility when CEO pay increases. Therefore, the firm might raise the employees' salary to compensate them for this disutility and to prevent them from leaving the firm. This mechanism predicts a positive relationship between CEO compensation and employee salaries. We start by analyzing the relation

between CEO compensation and employee wages using the following OLS regression model:

$$\ln(Wage)_{i,t} = \beta \ln(CEO\ total)_{j,t-1} + \gamma X_{i,t-1} + \delta Z_{j,t-1} + \alpha_t + \alpha_j + \alpha_s + \varepsilon_{i,t} \quad (2)$$

The dependent variable, $\ln(Wage)_{i,t}$, is the logarithm of the median annual wage in establishment i and year t .⁶ $\ln(CEO\ total)_{j,t-1}$ is the logarithm of the CEO's total compensation over the prior year $t - 1$, where j indexes the firm the establishment belongs. We control for year fixed effects, α_t , firm fixed effects, α_j , and state fixed effects, α_s . $X_{i,t-1}$ is a vector of control variables at the establishment level, which includes variables such as number of employees, median age, qualifications, and the nationality of employees. $Z_{j,t-1}$ is a set of control variables at the firm level such as profitability, total factor productivity, size, leverage, union board representation, CEO ownership, and tenure. We use White (1980) robust standard errors that allow for clustering at the firm level.

Table 3 presents our results. Column (1) only includes $\ln(CEO\ total)$, firm, state, and year fixed effects. The following columns slowly build the full model. First, establishment level controls are added in column (2), and then stepwise firm-level controls are added in columns (3) to (5). Across all columns, we observe that firms that pay their CEOs more also pay significantly higher wages to their other employees. In columns (3) to (5), we also include ROA and the market-to-book ratio, which control for firm profitability.

In column (5) the coefficient for $\ln(CEO\ total)$ is 0.016 ($t = 2.48$). This result indicates that if CEO compensation increases by 1%, the median employee's wage increases by 0.016%. The average CEO in our sample receives €2.5 million a year. If a firm increases its pay by 1% (=€25,000) for the average CEO, then the firm will pay additional compensation of €5.52 to the employee with an average median annual salary of €34,482. While this is quite small for the average employee,

⁶We use the pay of the median employee in this regression because we can observe the median but not the mean salary in our establishment data.

it scales up on the firm level: For the average firm in our sample with 44,760 domestic employees, this increase amounts to €247,000 per year, increasing the total wage bill by €272,000 per year. If the firm takes the costs of employee envy into account, a 1 percentage point increase in CEO compensation increases the total wage bill by more than 10% of CEO compensation on average.

These results are obtained after controlling for time-invariant unobservable and time-variant observable characteristics known to influence employee wages. In particular, we control for establishment and firm size, employee characteristics, profitability, productivity, leverage, and union presence. As expected, employee wages are higher when employees are better educated, German, male, work in larger establishments, and hold white-collar jobs or managerial positions, and the CEO has a 5% ownership stake in the firm (see, for example, [Cronqvist et al. \(2009\)](#), [Brown and Medoff \(1989\)](#)).

The coefficient on union representation is significantly negative, indicating that, within firms, union presence on the board is associated with lower employee wages. This finding is consistent with [Kim et al. \(2018\)](#), who study employee representation on corporate boards of German firms. They show that (skilled) employees of firms with 50% labor representation on boards are better protected against layoffs during adverse industry shocks, but in turn receive lower wages. [Lin et al. \(2019\)](#) use a similar empirical setting and show that union representation is positively related to CEO pay, this provides additional support for including CEO compensation alongside union representation when explaining employee wages.

Robustness checks

While we control for a number of variables in the regressions in Table [3](#), other potentially unobservable variables may affect our results. To reduce such concerns, we report further results with

additional firm-level controls in Table [A1](#) in the appendix. In column (1), we add the firm’s annual *Stock return* as an alternative measure of firm performance, and, in column (2), we add the *Board size*, defined as the number of members on the management board. The results show that employees’ wages are hardly influenced by stock returns or board size beyond what is already captured in our other control variables. The statistical and economic significance of the coefficient on $\ln(CEO\ total)$ is not affected. In column (3), we add additional CEO characteristics: (1) *CEO switch* equals one if a new CEO is appointed in $t-1$; (2) *CEO age* in years; (3) *CEO out-hiring* equals one if the CEO is recruited from outside the firm. *CEO age* is highly significantly negatively related to employee pay, while *CEO out-hiring* has a significant positive relation to employee pay, but none of these CEO characteristics affect $\ln(CEO\ total)$. In column (4), we add *R&D to sales*, which interprets missing values as zero, and a dummy for missing R&D observations. The results in Table [A1](#) show that the variable *R&D to sales* is insignificant, but the dummy for the missing R&D observation is highly significant. The firms that do not report their R&D expenditures pay their employees more, and the coefficient on $\ln(CEO\ total)$ slightly decreases but stays significant. In column (5), we split the dummy variable *Union* into four dummy variables to control separately for the influence of the three largest German unions (IG BCE, IG Metall, and ver.di). We find that there are significant differences between trade unions, but the coefficient for $\ln(CEO\ total)$ stays constant. In column (6), we replace $\ln(CEO\ total)$ with $\ln(CEO\ fixed)$ to remove any firm performance sensitivity from the contract of the CEO. This coefficient is significantly positive, meaning that employee wages also increase with the fixed salary of CEOs.

Thus far, we have controlled for only time-invariant firm-level unobservables. To rule out the possibility that the relationship between CEO compensation and employee wages is driven by industry-, establishment- or CEO-level unobservables, we (1) add industry fixed effects (Panel A) and substitute the firm with (2) establishment fixed effects (Panel B), or (3) CEO fixed effects (Panel C) in

Table A2 in the appendix.⁷ These additional tests are demanding on the data because the wages of both the CEO and the employees are rather sticky. The results are reassuring, nevertheless. In all columns, the economic and statistical significance of the $\ln(CEO\ total)$ is similar to our baseline fixed-effect regression. Finally, we might be concerned that CEO compensation affects employees' wages because of unobservable time-varying factors at the industry level or the state level. We add industry $\times$ year fixed effects (Panel D) and state $\times$ year fixed effects (Panel E). We find that neither the economic nor the statistical significance of $\ln(CEO\ total)$ is materially affected. This analysis suggests that time-varying industry and state level unobservables do not induce our results.

3.2 Wage changes

To further alleviate concerns that unobservables are driving our results, we ask whether the *changes* in employee wages are associated with *changes* in CEO pay. The regression of changes on changes removes the effect of time-invariant unobservables at the establishment level. We estimate the following OLS regression model:

$$\Delta Wage_{i,t} = \beta \Delta(CEO\ total)_{j,t-1} + \gamma X_{i,j,t-1} + \delta Z_{j,t-1} + \alpha_t + \alpha_k + \alpha_s + \varepsilon_{i,t} \quad (3)$$

The dependent variable, $\Delta Wage_{i,t}$ is defined in Equation (1) in establishment i and year t . $\Delta(CEO\ total)_{j,t-1}$ is likewise for $CEO\ total$ over the prior year $t - 1$, where j indexes the firm the establishment belongs. We control for year fixed effects, α_t , industry fixed effects, α_k , and state fixed effects, α_s . $X_{i,j,t-1}$ and $Z_{j,t-1}$ is a set of control variables. We use White (1980) robust standard errors that allow for clustering at the firm level. This analysis places strong requirements on our data because wages are generally very sticky. To rule out the possibility that the increase

⁷We can include both firm and industry fixed effects because the industry can differ across establishments.

in employees' wages is driven by fast-growing (or fast-shrinking) establishments, we drop the observations where the absolute yearly growth rate in the number of employees in an establishment is above the 95th percentile.

Table 4 shows that the coefficients on $\Delta(CEO\ total)$ are statistically significant at the 10% level in all columns. The economic significance is slightly lower than our prior results in levels, as a one percentage point increase in the annual growth rate of CEO total compensation increases the annual growth rate of employee wages by about one basis point.

Here we identify a few interesting control estimates. First, we observe that a higher percentage of women working in an establishment leads to higher wage increases, although men earn more than women in levels *ceteris paribus* (compare with Table 3). The issue of gender pay disparity has also sparked discussions in Germany. The results suggest that the gender pay gap is shrinking but still exists.⁸ Second, there is a correlation between union members serving on the supervisory board and higher wage increases for regular employees. Therefore, union representation in the supervisory board appears to be beneficial for employee wage growth. Third, the CEO ownership dummy is negatively related to wage increases of rank-and-file employees. This finding suggests that the CEO's incentives seem to play a significant role in moderating wage increases. Fourth, we find a positive relationship between CEO tenure and changes in employees' wages. Tenure is often viewed as a measure of CEO entrenchment, which implies that more entrenched CEOs are more likely to increase wages for rank-and-file employees.

3.3 Law change requiring individual executive compensation disclosure

The main endogeneity concern with our baseline regression is the omitted variable bias. If there is an unobserved characteristic (e.g., firm quality) that causes both CEOs and employees to be paid

⁸Bennedsen et al. (2023) review the literature on the gender pay gap.

well, our OLS estimates would be biased. To overcome this concern, we use a law change that is, in our opinion, uncorrelated with any performance-related characteristic, such as firm quality, but allows employees to observe CEO wages more accurately and with greater salience.

Since 2002, the German Corporate Governance Code (GCGC) has suggested reporting the individual compensation of management board members of listed firms. However, many firms did not follow this suggestion and reported only the required aggregate compensation for all management board members together. Companies often stated that they did not see how their shareholders could benefit from individual disclosure, as their management boards are collectively responsible for running the companies. After it became apparent in 2003 and 2004 that most firms were not complying with the GCGC, a public debate started about making disclosure mandatory. Finally, in 2005, the federal parliament enacted a law that required firms to disclose their individual compensation. It became effective in 2006. The GCGC from 2006 required firms to disclose the compensation of individual members of the management board in their annual reports, unless decided otherwise in the annual general meeting by three-quarters majority.⁹

The law was motivated by the argument that it is necessary for shareholders to know the individual remuneration. Only detailed knowledge of compensation practices would allow shareholders to decide whether compensation is adequate with respect to the duties of the individual management board member and the situation of the company. In the proponents' view, individual disclosure is a shareholder protection device. This view is exemplified by the justice minister arguing: "When you're forced to disclose these things, it acts as a sort of self-control."¹⁰ This regulation does not

⁹The German Corporate Governance Code (2006), Clause 4.2.4, requires that "The total compensation of each member of the Management Board is to be disclosed by name, divided into non-performance-related, performance-related, and long-term incentive components, unless decided otherwise by the General Meeting by three quarters majority." This means that the compensation of each member of the management board from 2006 onward must be disclosed unless the annual general meeting decides otherwise by a three-quarters majority. For comparison, according to the German Corporate Governance Code (2005), Clause 4.2.4, "Compensation of the members of the Management Board shall be reported in the Notes of the Consolidated Financial Statements subdivided according to fixed, performance related and long-term incentive components." According to the Code, the word "shall" indicates a recommendation but not a regulation.

¹⁰see Deutsche Welle from May 18, 2005: <https://p.dw.com/p/6f1t>. For the draft bill, see Deutscher Bundestag printed matter 15/5577: <http://dip21.bundestag.de/dip21/btd/15/055/1505577.pdf>

directly affect employee wages, but it changes the channel through which employees observe their firm’s CEO compensation. Before the regulation came into effect, the employees could generally observe only the aggregate remuneration of all members on the management board. After the regulation was adopted by the firms, the employees have been able to directly observe CEO compensation, which is on average 44% higher than the compensation of an average management board member in 2006. The reform increases the salience of CEO compensation by requiring individualized disclosure, thereby plausibly raising employee attention to CEO pay.¹¹

We estimate standard difference-in-differences regressions, using the logarithm of median employee wage as the dependent variable. The post-period starts in 2006, the year individual compensation disclosure became mandatory. The treatment group consists of all establishments of firms that start individual reporting in 2006. We define the control group as those companies that disclosed their CEO compensation prior to 2005 and continued to do so in 2006 and beyond.¹² This approach is consistent with Cullen and Perez-Truglia (2022), who show that employees systematically underestimate their bosses’ wages. Their findings suggest that employees—despite observing

¹¹Some firms in our sample have their shares cross-listed on American exchanges with stricter disclosure requirements. However, for international cross-listings, the U.S. Securities and Exchange Commission allows firms “to disclose executive compensation on an aggregate basis and need not supply a Compensation Discussion & Analysis, as is required for domestic companies.” See <https://www.sec.gov/divisions/corpfin/internatl/foreign-private-issuers-overview.shtml>. This means that cross-listed firms were required to publish individual compensation data starting only in 2006.

¹²For the control group, we exclude the year in which each firm first began disclosing individual compensation and the next year.

The *treatment* group comprises 22 firms: BASF AG, Beiersdorf AG, Daimler Chrysler AG, Deutz AG, Drägerwerke AG, Dyckerhoff AG, Fielmann AG, Fresenius AG, Henkel KGaA, IDS Scheer, Jenoptik AG, K+S AG, LEONI AG, Linde AG, Loewe AG, Medion AG, Münchener Rück AG, Pfeiffer Vacuum, Puma AG, Rheinmetall AG, Vossloh AG, and Zapf Creation AG.

The *control* group comprises 49 firms: Allianz AG, Altana AG, AWD Holding AG, AXA Konzern AG, Bayer AG, Beate Uhse AG, Bilfinger Berger AG, Commerzbank AG, Continental AG, Deutsche Bank AG, Deutsche Börse AG, Deutsche Lufthansa AG, Deutsche Post AG, Deutsche Telekom AG, DIS Deutscher Industrie Service AG, Douglas Holding AG, E.ON AG, EPCOS AG, Evotec, Fraport AG, GfK AG, GPC Biotech, Heidelberger Druckmaschinen AG, Hochtief AG, IKB Deutsche Industriebank AG, IVG Holding AG, Kontron, MAN AG, MediGene, METRO AG, MLP AG, REpower Systems AG, Rhön-Klinikum AG, RWE AG, SAP AG, Schering AG, Schwarz Pharma AG, SGL Carbon AG, Siemens AG, Singulus, Software AG, Stada Arzneimittel AG, Techem AG, ThyssenKrupp AG, TUI AG, United Internet, Varta AG, Volkswagen AG, WCM Beteiligungs- und Grundbesitz-AG..

A total of 29 firms are excluded from the difference-in-differences analysis for the following reasons: 10 firms initiated disclosure in 2005, when the law had been enacted but had not yet become effective; 18 firms opted out of the disclosure requirement; and 1 firm is organized as a “Kommanditgesellschaft auf Aktien”, to which the regulation does not apply.

aggregate management compensation prior to the reform—are likely to be surprised by the level of CEO pay once it is disclosed.

We turn to an extended data set. While both data sets share the post-disclosure period, the difference-in-differences specification additionally incorporates pre-disclosure observations to identify the effect of the initial CEO pay disclosure.

We estimate the following model:

$$\ln(Wage)_{i,t} = \sum_{l=-3, l \neq -3}^3 \beta_l [\text{treat2006}_j \times \mathbf{1}\{t - 2006 = l\}] + \gamma X_{i,t-1} + \delta Z_{j,t-1} + \alpha_s + \varepsilon_{i,t}, \quad (4)$$

where $\ln(Wage)_{i,t}$ denotes the logarithm of the median annual wage in establishment i and year t and treat2006_j indicates whether firm j is exposed to the 2006 reform. We focus on the median wage because the data allow us to observe the median, but not the mean, at the establishment level. The specification includes state fixed effects, α_s , as well as the standard sets of lagged control variables, $X_{i,t-1}$ and $Z_{j,t-1}$. We use White (1980) robust standard errors that allow for clustering at the firm level.

We hypothesize that the increase in the salience of CEO compensation raises employee attention in treated firms and, in turn, intensifies envy, leading to stronger growth in employee pay relative to control firms. We expect this relative wage effect to be transitory, as employee attention—and thus envy—should attenuate over time.

We acknowledge that firms self-select before the law and may use the opt-out provision, which likely biases against finding an effect. Since employees can already observe broader management compensation, the reform mainly increases the visibility of CEO pay relative to other executives. This implies a natural partition of firms based on the CEO–executive pay gap: firms with voluntary disclosure (control group) likely exhibit small gaps; treated firms exhibit larger gaps revealed by the reform; and firms that opt out plausibly have the largest gaps. Accordingly, the strongest employee response is expected among opt-out firms. However, as these firms do not disclose and are excluded from the treatment group, the estimated effects reflect responses to comparatively smaller, newly revealed gaps. This selection likely attenuates our estimates, which should therefore be interpreted as a lower bound of the true effect.

Table A3 shows a comparison between the treatment and the control group in 2006. We find only two marginally significant differences out of 28 variables at the firm level. On the establishment level, we find a lower share of white-collar employees for the treatment group, which is also reflected by fewer women and more low-qualified employees working for treated firms. Overall, both groups seem to be quite similar across observable characteristics.

Figure 2 plots the annual $Treatment \times Post$ effects for the period from -3 to +3 around the law change in 2006. The effects are estimated relative to the year $t = -3$. The regression includes the same control variables as column (5) in Table 4. In support of the parallel trends assumption, the coefficient estimates in the pre-period are close to zero and statistically insignificant. Starting in $t = 0$ the difference between treated and controls starts to open up and becomes significantly positive (at the 5%-level) in $t = +1$. In the subsequent periods, the coefficients remain positive but converge toward zero. As predicted, the treatment effect of the law change vanishes rather quickly from an 8.5% difference in worker wages in $t = +1$ to 2.8% in $t = +3$.

We report the full regression results in Table A4. While these estimates are not directly comparable to those in Tables 3 and 4, they are economically larger, consistent with the notion that employee attention to CEO compensation plays an important role in inducing envy.

4. How does CEO compensation affect employee wages?

The preceding analysis suggests that regular employees become more envious when executive compensation receives greater attention. The legal debate over the disclosure of individual compensation, which underlies our difference-in-differences analysis, may constitute such an episode. Absent this attention-triggering mechanism, envy appears to play only a minor role in shaping employee wages. In this section, we provide three complementary perspectives on this issue.

4.1 Envy toward the management team

CEO compensation can affect employee wages through either a direct or an indirect channel. In the direct channel, employees observe CEO compensation in published reports or in the press and

derive disutility directly from this comparison. Envious behavior should therefore be stronger when management compensation figures are more salient. In the indirect channel, which is a trickle-down effect, top managers compare their wages with those of the CEO, regular managers compare their wages with those of top managers, and regular employees compare their wages with those of lower managers. High CEO compensation would then gradually reach regular employees through the wage hierarchy. We can test these two hypotheses only indirectly by distinguishing CEO compensation from the compensation of other management board members.

We begin by comparing total board compensation, $\ln(\textit{Board total})$, in column (1) of Table 5 with CEO compensation, $\ln(\textit{CEO total})$, in column (2). CEO compensation exhibits both a larger and more statistically significant coefficient. This suggests that the CEO is more salient for employees than other members of the management board. This interpretation is supported by column (3), which considers the compensation of other board members, $\ln(\textit{Other total})$. The coefficient is smaller and only marginally significant, indicating that employee responses are primarily driven by CEO compensation rather than by the broader management team. Finally, column (4) presents a horse-race specification including both $\ln(\textit{CEO total})$ and $\ln(\textit{Other total})$. The coefficient on $\ln(\textit{CEO total})$ increases and remains statistically significant, whereas the coefficient on $\ln(\textit{Other total})$ becomes close to zero, reinforcing the central role of CEO compensation.

These findings suggest that employees benchmark their wages primarily against the most salient component of executive compensation. In particular, employees appear to compare their pay to that of the CEO rather than to other members of the management team. Overall, the evidence strongly supports the direct channel, whereby employees anchor their wage comparisons on the salient compensation of the CEO.

4.2 The role of press reporting

In order to become envious, employees must first be aware of CEO compensation (attention) and subsequently form fairness-related evaluations (sentiment). We proxy attention using the volume of press coverage on CEO compensation and sentiment using the share of negative press coverage. To examine this channel in greater detail, we draw on the press data described in Section 2.4.

We rerun the analysis from Table 3, columns (2), (4), and (5), using the same control variables but changing the explanatory variables of interest. The results are presented in Table 6, Panels A and B. In the first specification (columns 1 to 3), we replace once-lagged $\ln(CEO\ total)$ with the twice-lagged press variable, *Total Press*, defined as the number of press reports on a firm’s management compensation per year. In the second specification (columns 4 to 6), we include both twice-lagged *Total Press* and twice-lagged $\ln(CEO\ total)$. We then repeat the same two specifications with *Negative Press*, defined as the number of press reports on a firm’s management compensation per year with a negative press tone.

The results in Panel A show that the coefficient on press reporting about management compensation is significantly negative and small when the regression does not control for firm-level variables (columns (1) and (4)). However, once firm-level controls are included, the coefficient becomes statistically insignificant (columns (2), (3), (5), and (6)). This finding suggest that attention alone does not lead to envious behavior.

In Panel B we look at the effect of negative press reporting. The results show that if the press reports negatively about executive compensation, there is a statistically significant positive effect on employee pay. What does this mean for the economic effect? *Negative Press* has a standard deviation of 0.675. Accordingly, the estimate in Panel B, column (6) suggests that a one-standard-deviation increase in negative press coverage of CEO compensation is associated with an additional 0.61 percent increase in rank-and-file employee wages, equivalent to €209 at the mean wage of €34,482.

One difference from the baseline analyses is the timing of the explanatory variables. In the press analysis in Table 6, we use two-year lags for both the press variables and $\ln(CEO\ total)$. In the rest of the paper however, we use once-lagged CEO compensation. This timing choice is motivated by the difference-in-differences results in Figure 2, where the main wage response occurs one year after the disclosure event. In Table A5, we present the same analysis as in Table 6 using the one-year lags for both the press variables and $\ln(CEO\ total)$; the press variables, including *Negative Press*, are statistically insignificant. The reason for the longer lag in the press analysis is necessarily

speculative. In the disclosure setting, firms with large wage gaps may anticipate employee reactions and prepare wage adjustments once CEO pay becomes salient. By contrast, negative press coverage may first have to generate employee attention and sentiment before it translates into wage demands and firm responses. This process may take longer, so we allow the press effect to materialize over a two-year horizon.

4.3 Alternative explanation: CEO compassion

An alternative explanation for employee envy is CEO compassion, defined as an other-regarding preference whereby the CEO places positive weight on the welfare of rank-and-file employees, as reflected in a more compressed pay gap than would be predicted under purely profit-maximizing behavior. We distinguish between two potential interpretations of CEO compassion.

First, true compassion indicates that CEOs feel bad about a large pay gap regardless of whether employees can observe the exact gap. If our results were driven solely by such compassion, the disclosure of CEO pay would have no effect on employee wages in the difference-in-differences analyses reported in Table [A4](#), but it does increase employee wages. Furthermore, the timing of the effects is inconsistent with this interpretation. Under true compassion, a CEO would adjust employee wages contemporaneously with changes in her own compensation. In contrast, our findings in Table [3](#) show that employee wages respond to lagged CEO compensation, while contemporaneous CEO pay has no significant effect after adding firm-level controls (see Table [A6](#)). Taken together, these results provide no evidence in support of the true compassion hypothesis.

Second, CEOs may exhibit compassion as a response to the disclosure of their compensation, becoming more sensitive to the income differential vis-à-vis rank-and-file employees. To examine this possibility, we adopt an identification strategy similar to [Cronqvist et al. \(2009\)](#), which posits that CEOs are more likely to exhibit pro-social behavior toward employees who are geographically closer to them. Using worker wages as the dependent variable, we augment our baseline specification by including an interaction between *Close to head*—an indicator equal to one if the establishment is

located in the same state as the firm’s headquarters—and $\ln(CEO\ total)$. Table 7 reports results for three specifications with industry fixed effects and three with firm fixed effects. Across all columns, the interaction term is positive but statistically insignificant. We therefore find no evidence that CEO compassion—at least as proxied by geographic proximity—drives the relationship between CEO compensation and employee pay.

5. Employee turnover

Wade et al. (2006) show that CEO overcompensation is associated with higher turnover among other managers (see also Bloom and Michel (2002)). How does this relationship extend to rank-and-file employees?

We examine this question using employee outflow data provided by the IAB. Specifically, we construct the variable *Outflow* as the ratio of employee outflows in year t to the number of employees in $t-1$ at the establishment level. This measure does not distinguish between forced and voluntary turnover, nor between fixed-term and permanent contracts, the latter being more difficult to terminate. To ensure that our results are not driven by establishments undergoing extreme expansion or contraction, we exclude observations where the absolute annual employment growth rate exceeds the 95th percentile.

Table 8 reports the results for overall employee outflows (columns (1)–(3)) and for white-collar employees only (columns (4)–(6)). We adopt the same specification as in Table 3, including $\ln(Wage)$ as an additional control. Across all columns, the estimated relationship between CEO compensation and *Outflow* is negative, but statistically insignificant in five out of six specifications. Overall, we find no robust evidence that employee turnover is systematically related to executive compensation. One possible interpretation is that employees are, on average, sufficiently compensated to offset concerns about relative pay, thereby reducing the attractiveness of outside options and limiting turnover. From a corporate perspective, this is consistent with the objective of maintaining low turnover, as a well-paid CEO may contribute to limiting employee mobility, which would otherwise risk eroding shareholder value.

6. Conclusion

We document a positive effect of CEO compensation on the wages of rank-and-file employees. This pattern is not explained by established determinants of employee wages and is unlikely to be caused by unobservables at the industry, firm, CEO, establishment, or state level. In addition, this effect remains when we examine wage changes. Our difference-in-differences analysis, conducted after a legal change that makes individual disclosure of management compensation much more likely, supports a causal interpretation of our findings.

What is the precise mechanism underlying employees' relative wealth concerns, given that employees seem to gain very little from their envious behavior? We provide the following observations. First, envious behavior is geared toward CEOs rather than toward the entire management team. Second, we search for articles in the German business press about management compensation. We find that the sum of press articles that criticize management compensation (our negative sentiment proxy) is significantly positively related to employee wages two years later. These observations are consistent with sentiment toward CEO compensation playing a key role in stirring up employees' relative wealth concerns. We also find no clear evidence that employee turnover is related to executive pay.

In summary, all our results indicate that most firms voluntarily increase employee wages to prevent labor demands and unrest, which can seriously disrupt business. The evidence points to the following mechanism. When management compensation, especially CEO compensation, becomes more salient, employees pay more attention to it and demand additional compensation because of relative wealth concerns. Therefore, our results are another example that additional transparency requirements can have unintended (and costly) consequences for firms (see, for example, Faulkender and Yang (2013), Gipper (2021)).

A natural open question is whether we can generalize the results obtained for Germany to other

countries, for example, the US. The US is known to have larger wage gaps between CEOs and rank-and-file employees as well as more social tolerance for inequality. Therefore, we expect that the effect of envious behavior is dampened in the US compared to Germany. Consistent with this conjecture, we find that CEOs in Germany are compensated less than CEOs in the US. Therefore, an interesting extension of our work would be a cross-country comparison. In countries that experience higher inequality aversion, the executive pay (all else equal) should be lower. [Gabaix and Landier \(2008\)](#) test this hypothesis using the World Value Survey. However, they have only 17 observations and obtain insignificant results. A promising research project might be to construct a larger data set that allows us to sufficiently control for all known effects on pay levels.

Our evidence on employees' relative wealth concerns implies that managerial compensation incurs additional "inequality costs", which must be taken into consideration when determining the optimal contracts for both CEOs and employees. Any additional payment made to the CEO for providing incentives also leads to higher employee wages to compensate employees for their (perceived) utility losses from relative wealth concerns. These costs must be considered by boards and shareholders when determining the optimal level of CEO compensation.

References

- Addison, J. T., Bryson, A., Teixeira, P., Pahnke, A. and Bellmann, L.: 2010, The state of collective bargaining and worker representation in Germany: The erosion continues, *Technical Report 5030*, Bonn.
- Akerlof, G. A. and Yellen, J. L.: 1990, The fair wage-effort hypothesis and unemployment, *The Quarterly Journal of Economics* **105**, 255–283.
- Bennedsen, M., Larsen, B. and Wei, J.: 2023, Gender wage transparency and the gender pay gap: A survey, *Journal of Economic Surveys* **37**(5), 1743–1777. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/joes.12545>.
URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/joes.12545>
- Bloom, M. and Michel, J. G.: 2002, The relationships among organizational context, pay dispersion, and managerial turnover, *Academy of Management Journal* **45**, 33–42.
- Bolton, G. E. and Ockenfels, A.: 2000, ERC: A theory of equity, reciprocity, and competition, *American Economic Review* **90**, 166–193.
- Bozos, K., Chen, J., Gao, Y., Tian, X. and Yuan, J.: 2025, Do Consumers Care about Pay Inequality? Evidence from Household Purchase Data.
URL: <https://papers.ssrn.com/abstract=5118911>
- Brown, C. and Medoff, J.: 1989, The employer size-wage effect, *Journal of Political Economy* **97**, 1027–1059.
- Clark, A. E. and Oswald, A. J.: 1996, Satisfaction and comparison income, *Journal of Public Economics* **61**, 359–381.
- Cohn, A., Fehr, E. and Goette, L.: 2015, Fair wages and effort provision: Combining evidence from a choice experiment and a field experiment, *Management Science* **61**, 1777–1794.
- Cronqvist, H., Heyman, F., Nilsson, M., Svaleryd, H. and Vlachos, J.: 2009, Do entrenched managers pay their workers more?, *The Journal of Finance* **64**, 309–339.

- Cullen, Z. B. and Pakzad-Hurson, B.: 2023, Equilibrium Effects of Pay Transparency, *Econometrica* **91**(3), 765–802. _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.3982/ECTA19788>.
URL: <https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA19788>
- Cullen, Z. and Perez-Truglia, R.: 2022, How much does your boss make? The effects of salary comparisons, *The Journal of Political Economy* **130**, 766–822.
- Davis, S. J., Haltiwanger, J., Handley, K., Jarmin, R., Lerner, J. and Miranda, J.: 2014, Private equity, jobs, and productivity, *American Economic Review* **104**, 3956–90.
- DeMarzo, P. and Kaniel, R.: 2017, Relative pay for non-relative performance: Keeping up with the Joneses with optimal contracts. CEPR Discussion Papers DP11538.
- Edmans, A., Gosling, T. and Jenter, D.: 2023, CEO compensation: Evidence from the field, *Journal of Financial Economics* **150**, 103718.
- Ellguth, P., Gerner, H.-D. and Stegmaier, J.: 2012, Wage bargaining in Germany: The role of works councils and opening clauses, *IAB-Discussion Paper 5/2012*, Nürnberg.
- Faleye, O., Reis, E. and Venkateswaran, A.: 2013, The determinants and effects of CEO-employee pay ratios, *Journal of Banking & Finance* **37**, 3258–3272.
- Faulkender, M. and Yang, J.: 2013, Is disclosure an effective cleansing mechanism? the dynamics of compensation peer benchmarking, *The Review of Financial Studies* **26**(3), 806–839.
URL: <https://doi.org/10.1093/rfs/hhs115>
- Fehr, E. and Schmidt, K. M.: 1999, A theory of fairness, competition, and cooperation, *Quarterly Journal of Economics* **114**, 817–868.
- Gabaix, X. and Landier, A.: 2008, Why has CEO pay increased so much?, *The Quarterly Journal of Economics* **123**, 49–100.
- Gächter, S. and Thönid, C.: 2010, Social comparison and performance: Experimental evidence on the fair wage-effort hypothesis, *Journal of Economic Behavior & Organization* **76**, 531–543.
- Garcia, D. and Strobl, G.: 2011, Relative wealth concerns and complementarities in information acquisition, *The Review of Financial Studies* **24**, 169–207.

- Gipper, B.: 2021, The economic effects of expanded compensation disclosures, *Journal of Accounting and Economics* **71**(1), 101338.
URL: <https://www.sciencedirect.com/science/article/pii/S0165410120300409>
- Grund, C. and Sliwka, D.: 2005, Envy and compassion in tournaments, *Journal of Economics & Management Strategy* **14**, 187–207.
- Hassel, A.: 1999, The erosion of the German system of industrial relations, *British Journal of Industrial Relations* **37**, 483–505.
- Hassel, A. and Rehder, B.: 2001, Institutional change in the German wage bargaining system: The role of big companies, *MPIfG Working Paper 01/9*, Max Planck Institute for the Study of Societies.
- Jung, S. and Schnabel, C.: 2011, Paying more than necessary? The wage cushion in Germany, *LABOUR* **25**, 182–197.
- Kale, J. R., Reis, E. and Venkateswaran, A.: 2009, Rank-order tournaments and incentive alignment: The effect on firm performance, *The Journal of Finance* **64**, 1479–1512.
- Kim, E. H., Maug, E. and Schneider, C.: 2018, Labor representation in governance as an insurance mechanism*, *Review of Finance* **22**(4), 1251–1289.
URL: <https://doi.org/10.1093/rof/rfy012>
- Lin, C., Schmid, T. and Sun, Y.: 2019, Conflict or collusion? How employees in the boardroom affect compensation, Working Paper.
- Liu, Q. and Sun, B.: 2016, Relative wealth concerns, executive compensation, and systemic risk-taking. International Finance Discussion Papers 1164.
- Mas, A.: 2017, Does Transparency Lead to Pay Compression?, *Journal of Political Economy* **125**(5), 1683–1721. Publisher: The University of Chicago Press.
URL: <https://www.journals.uchicago.edu/doi/full/10.1086/693137>
- Mueller, H. M., Ouimet, P. P. and Simintzi, E.: 2017a, Wage inequality and firm growth, *American Economic Review: Papers & Proceedings* **107**, 379–383.

- Mueller, H. M., Ouimet, P. P. and Simintzi, E.: 2017b, Within-firm pay inequality, *Review of Financial Studies* **30**, 3605–3635.
- Neilson, W. S. and Stowe, J.: 2010, Piece-rate contracts for other-regarding workers, *Economic Inquiry* **48**, 575–586.
- Pan, Y., Pikulina, E. S., Siegel, S. and Wang, T. Y.: 2022, Do Equity Markets Care about Income Inequality? Evidence from Pay Ratio Disclosure, *The Journal of Finance* **77**(2), 1371–1411.
_eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/jofi.13113>.
URL: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jofi.13113>
- Schmitt, D. R. and Marwell, G.: 1972, Withdrawal and reward reallocation as responses to inequity, *Journal of Experimental Social Psychology* **8**, 207–221.
- Schnabel, C. and Wagner, J.: 2007, The persistent decline in unionization in Western and Eastern Germany, 1980-2004: What can we learn from a decomposition analysis?, *The German Journal of Industrial Relations* **14**, 118–132.
- Wade, J. B., O'Reilly, C. A. and Pollock, T. G.: 2006, Overpaid CEOs and underpaid managers: Fairness and executive compensation, *Organization Science* **17**, 527–544.

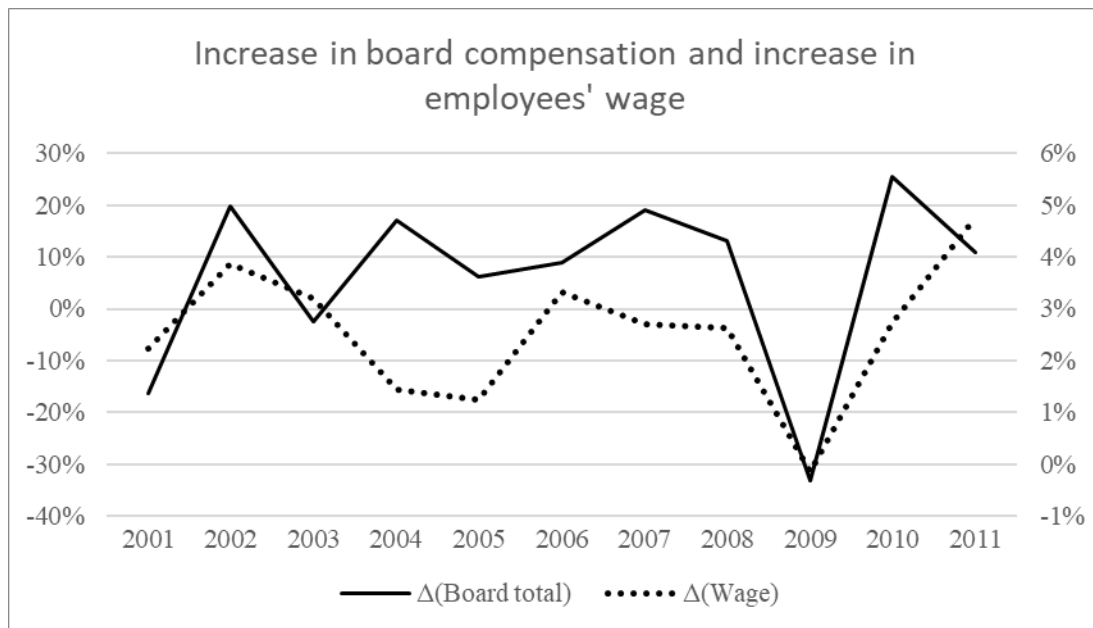


Figure 1: Yearly changes in average board compensation (solid line, left y-axis) and yearly changes in average weighted employee wage (dotted line, right y-axis). The weight is the number of establishment employees. The average is calculated from the median establishment wage because the Establishment History Panel does not record the average establishment wage.

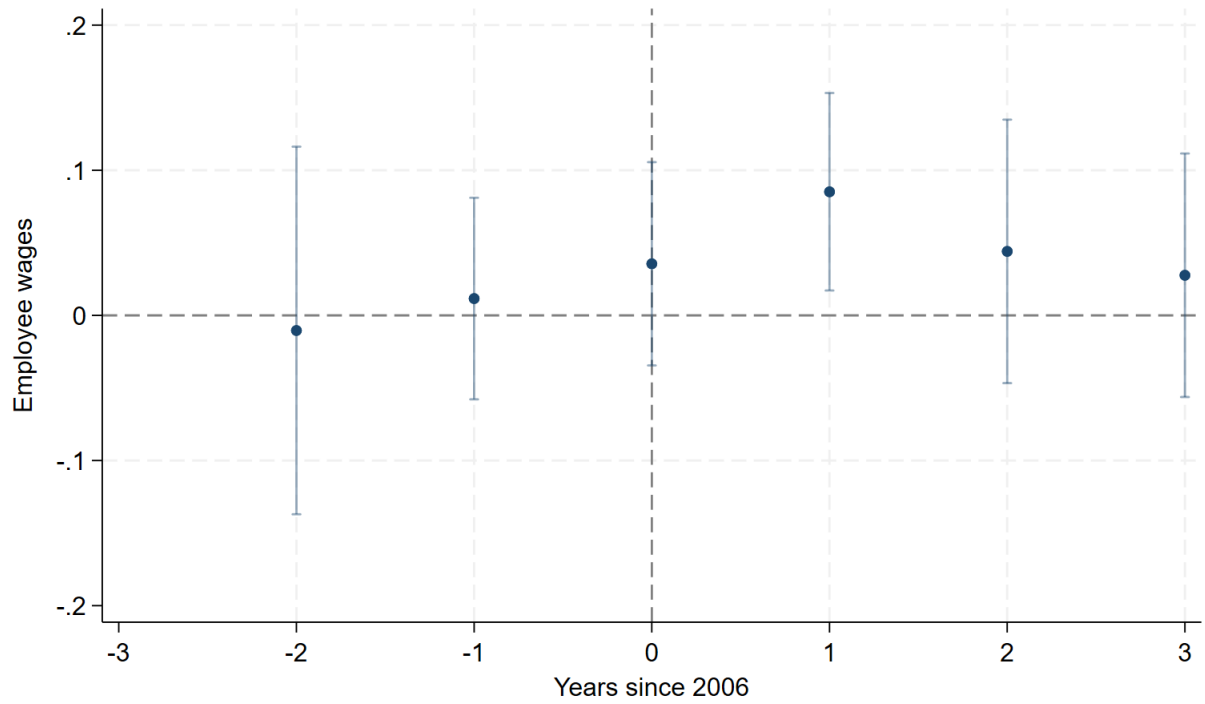


Figure 2: This figure illustrates the impact of the 2006 law mandating individual executive compensation disclosure on the logarithm of the median annual wage at the establishment level, $\ln(Wage)_{i,t}$, following equation (4). The x-axis shows event time in years relative to 2006, with $t = -3$ omitted as the reference period. The regression includes state fixed effects and the full set of control variables from Table A4, column (5). Standard errors are clustered at the firm level.

Table 1: Sample

This table displays the number of firms and establishments in the sample for each year between 2000 and 2011.

Year	Firms	Establishments
2000	94	13,646
2001	98	14,664
2002	99	15,819
2003	100	18,789
2004	99	20,870
2005	100	23,792
2006	99	25,776
2007	97	24,544
2008	95	21,464
2009	91	20,300
2010	87	17,926
2011	86	16,581

Table 2: Summary statistics

Panel A displays definitions and descriptive statistics for the main firm-level variables used in our analysis. Panel B displays definitions and descriptive statistics for the main establishment-level variables used in our analysis.

Panel A: Summary statistics for firm-level variables

Variable name	Definition	Mean	Median	Std.	Obs.
<i>Compensation</i>					
CEO total (thousands)	Annual total compensation of the CEO	2,466	1,772	2,350	595
$\Delta(\text{CEO total})$	Growth rate in CEO total	0.056	0.049	0.392	508
CEO fixed (thousands)	Annual fixed pay of the CEO	815	634	680	590
$\Delta(\text{CEO fixed})$	Growth rate in CEO fixed	0.005	0.001	0.025	503
Board total (thousands)	Average annual compensation for all management board members: total compensation for the board / board size	1,305	975	1,083	1,141
$\Delta(\text{Board total})$	Growth rate in Board total	0.060	0.063	0.377	1035
Other total (thousands)	Average annual total compensation for management board members excluding the CEO	1,363	1,062	1,039	588
$\Delta(\text{Other total})$	Growth rate in Others total	495	0.047	0.052	0.392
CEO-to-board ratio	CEO total / Board total - 1	0.47	0.40	0.62	595
<i>CEO characteristics</i>					
CEO tenure	Time since first appointed as the CEO (year)	5.95	4.50	5.64	1,010
CEO ownership	=1 if the CEO holds more than 5% of the firm outstanding shares	0.12	0.00	0.33	1,009
CEO age	Age of CEO (in years)	53.69	55.00	7.21	955
CEO switch	=1 if another person takes over the CEO position	0.11	0.00	0.32	981
CEO out-hiring	=1 if the CEO is hired from outside the firm	0.33	0.00	0.47	948
<i>Firm-level characteristics</i>					
Market capitalization (millions)	Market capitalization	7,732	1,511	14,500	1,151
ROA (%)	Return on assets	5.09	4.31	39.12	1,148
Market to book ratio	Market to book ratio	2.33	1.73	6.42	1,151
TFP	Total Factor Productivity	0.11	0.06	0.50	1,181
Size (millions)	Total sales or revenues of the firm	13,100	2,133	24,800	1,140
Leverage	Total debt / total asset	0.21	0.19	0.17	1,157
# Firm employees	Number of employees working for the firm	44,760	9,922	87,299	1,156
Employee risk	Standard deviation of change in number of employees at firm level	0.17	0.12	0.21	1,200
Union	=1 if one of the major German labor unions has representatives in the firm's supervisory board	0.59	1.00	0.49	1,200
Disclosure	=1 if the compensation of CEO is disclosed in annual reports	0.52	1.00	0.50	1,145
Stock return	Total annual stock return calculated using the return index provided by Datastream	0.11	0.06	0.50	1,181
Board size	Number of members in the executive board	4.69	4.00	2.08	1,145
R&D to sales	R&D to sales ratio	10.05	2.67	42.17	742
R&D to sales adjusted	Adjusted R&D to sales ratio	6.22	0.75	33.51	1,200
Missing R&D to sales	=1 if R&D to sales ratio is missing	0.38	0.00	0.49	1,200

Continued on next page

Table 2 continued

Variable name	Definition	Mean	Median	Std.	Obs.
<i>Press variables</i>					
Total Press	Total number of press reports on firm's management compensation	0.544	0.000	2.092	1,200
Negative Press	Number of press reports on firm's management compensation with a negative press tone	0.139	0.000	0.675	1,200
Not-Negative Press	Number of press reports on firm's management compensation with a positive or neutral press tone	0.405	0.000	1.587	1,200

Panel B: Summary statistics for establishment-level variables

Variable name	Definition	Mean	Median	Std.	Obs.
<i>Wage structure</i>					
Wage	Median gross average daily wage for full-time employees $\times 365$	34,482	34,369	13,046	186,016
$\Delta(\text{Wage})$	Growth rate in workers' wage	0.018	0.019	0.137	159,587
<i>Employee structure</i>					
# Estab. Employees	Total number of full-time employees at the establishment	64.45	5.00	660.96	234,171
Female %	Proportion of full-time female employees	0.45	0.40	0.35	196,059
Low qualified %	Proportion of full-time low-qualified employees	0.04	0.00	0.12	196,059
Qualified %	Proportion of full-time median-qualified employees	0.74	0.87	0.32	196,059
Highly qualified %	Proportion of full-time high-qualified employees	0.08	0.00	0.18	196,059
German %	Proportion of German employees	0.97	1.00	0.10	196,059
Manager %	Proportion of managers	0.03	0.00	0.13	196,059
White collar %	Proportion of white-collar workers	0.59	0.80	0.47	196,059
Employees age		41.00	41.00	8.27	234,171
<i>Other variables</i>					
Close to head	=1 if the establishment is located in the same federal state as the firm's headquarters	0.18	0.00	0.38	234,171
Outflow	Outflow of employees _t / # Branch Employees _{t-1}	0.23	0.17	0.24	118,639
Outflow white-collar	Outflow of white-collar employees _t / # Branch Employees _{t-1}	0.16	0.06	0.24	118,639
Industry	2-digit NACE code (economic division) of the the establishment (edition: 2003)				
State	Federal state where the establishment is located				

Table 3: CEO compensation and employee wages

This table presents results for firm fixed effects regressions with the log median annual wage of full-time employees as the dependent variable. All independent variables are lagged by one year. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)				
	(1)	(2)	(3)	(4)	(5)
ln(CEO total)	0.020** 2.29	0.019** 2.45	0.015** 2.38	0.015** 2.38	0.016** 2.48
ln(# Estab. employees)		0.061*** 2.83	0.061*** 2.82	0.061*** 2.82	0.061*** 2.82
Female %		-0.335** -2.58	-0.336** -2.57	-0.336** -2.57	-0.336** -2.57
Low qualified %		0.005 0.09	0.005 0.09	0.005 0.09	0.005 0.09
Qualified %		0.268*** 11.24	0.269*** 11.43	0.269*** 11.43	0.269*** 11.42
Highly qualified %		0.685*** 9.41	0.690*** 9.60	0.690*** 9.60	0.690*** 9.59
German %		0.291*** 4.57	0.294*** 4.57	0.294*** 4.57	0.294*** 4.57
Manager %		0.100* 1.96	0.098* 1.92	0.098* 1.92	0.098* 1.93
White collar %		0.170*** 8.37	0.170*** 8.44	0.170*** 8.44	0.170*** 8.44
Employee age		0.002 0.69	0.002 0.68	0.002 0.68	0.002 0.68
Close to head		-0.006 -0.51	-0.006 -0.54	-0.006 -0.54	-0.006 -0.54
ROA			0.051 0.87	0.051 0.87	0.064 1.02
Market to book ratio			0.001 0.22	0.001 0.22	0.000 0.13
TFP			-0.020 -0.82	-0.020 -0.82	-0.021 -0.86
ln(Size)			0.031 1.39	0.031 1.39	0.029 1.24
Leverage			-0.022 -1.52	-0.022 -1.52	-0.019 -1.25
Union				-0.345*** -2.87	-0.350*** -2.93
CEO ownership					0.096*
CEO tenure					1.85 0.000 0.73
Firm, state, year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.404	0.553	0.549	0.549	0.549
Number of observations	110,518	108,541	107,375	107,375	107,375

Table 4: Change in CEO compensation and change in employee wages

This table presents results for regressions with the annual change in the median annual wage of full-time employees as the dependent variable. All independent variables are lagged by one year. See Table 2 for a detailed overview of variable definitions. We exclude observations where the absolute yearly changes in the numbers of employees at the establishment level are above the 95% percentile. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	$\Delta(\text{Wage})$				
	(1)	(2)	(3)	(4)	(5)
$\Delta(\text{CEO total})$	0.012*	0.011*	0.010*	0.010*	0.010*
	1.69	1.70	1.79	1.78	1.79
$\ln(\# \text{ Estab. employees})$		0.002***	0.002**	0.002***	0.002***
		2.82	2.62	2.74	2.86
Female %		0.025**	0.026**	0.024**	0.024*
		2.22	2.18	1.95	1.89
Low qualified %		0.014**	0.012*	0.013**	0.013**
		2.03	1.92	2.01	2.09
Qualified %		-0.009***	-0.009***	-0.009***	-0.009***
		-4.49	-5.32	-5.59	-5.26
Highly qualified %		-0.017***	-0.016***	-0.017***	-0.018***
		-4.99	-4.59	-5.53	-5.47
German %		-0.010	-0.009	-0.009	-0.009
		-1.37	-1.28	-1.25	-1.22
Manager %		-0.019***	-0.019***	-0.017***	-0.018***
		-3.17	-2.78	-2.84	-2.93
White collar %		-0.003	-0.004	-0.003	-0.002
		-0.93	-1.22	-0.88	-0.62
Employee age		0.000	0.000	0.000	0.000
		-1.25	-1.30	-1.28	-1.36
Close to head		-0.004***	-0.004***	-0.004***	-0.004***
		-3.49	-5.02	-4.52	-4.42
ROA			-0.033	-0.033	-0.008
			-0.96	-1.10	-0.29
Market to book ratio			0.000	0.000	0.000
			-0.20	-0.14	-0.22
TFP			0.001	0.003	0.003
			0.09	0.47	0.46
$\ln(\text{Size})$			0.000	-0.001	-0.003*
			0.32	-0.80	-1.80
Leverage			0.020	0.025*	0.029**
			1.51	1.90	2.17
Union				0.019*	0.023***
				1.96	2.81
Employee risk				0.049	0.032
				1.56	1.33
CEO ownership					-0.015**
					-2.53
CEO tenure					0.001***
					3.24
Industry, state, and year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.002	0.006	0.006	0.007	0.007
Number of observations	89,785	89,785	88,786	88,786	88,786

Table 5: Envy towards the management team

This table presents results for regressions with the log median annual wage of full-time employees as the dependent variable. The sample includes all establishment-year observations of firms disclosing the individual CEO compensation in a given year. All independent variables are lagged by one year. See Table 2 for a detailed overview of variable definitions. The regressions control for firm, state, and year fixed effects. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)			
	(1)	(2)	(3)	(4)
ln(Board total)	0.014*			
	1.92			
ln(CEO total)		0.016**		0.018*
		2.48		1.76
ln(Other total)			0.013*	-0.003
			1.78	-0.20
Close to head	-0.006	-0.006	-0.006	-0.006
	-0.55	-0.54	-0.55	-0.54
ROA	0.071	0.064	0.076	0.063
	1.13	1.02	1.21	1.00
Market to book ratio	0.001	0.000	0.001	0.001
	0.17	0.13	0.20	0.15
TFP	-0.020	-0.021	-0.020	-0.023
	-0.76	-0.86	-0.74	-0.92
ln(Size)	0.031	0.029	0.034	0.032
	1.29	1.24	1.39	1.34
Leverage	-0.019	-0.019	-0.019	-0.021
	-1.30	-1.25	-1.31	-1.36
Union	-0.235	-0.350***	0.028***	-0.969***
	-1.34	-2.93	3.03	-8.36
CEO ownership	0.096*	0.096*	0.113**	0.114**
	1.88	1.85	2.15	2.18
CEO tenure	0.000	0.000	0.000	0.000
	0.79	0.73	0.70	0.64
Establishment variables	Yes	Yes	Yes	Yes
Firm, state, year FE	Yes	Yes	Yes	Yes
Adjusted R ²	0.549	0.549	0.549	0.549
Number of observations	107,380	107,375	107,355	107,350

Table 6: Press data and employee wages

This table presents results for regressions with the log median annual wage of full-time employees as the dependent variable. The press and CEO pay variable are lagged by two years. All other independent variables are lagged by one year. In Panel A, the variable Total Press is the number of press reports on firm's management compensation per year. In Panel B, the variable Negative Press is the number of press reports on firm's management compensation per year with a negative tone. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Panel A: Total Press

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Total Press	-0.002*** -2.70	-0.001 -0.89	-0.001 -0.89	-0.001** -2.02	-0.001 -0.72	-0.001 -0.72
ln(CEO total)				0.006 0.98	0.005 1.31	0.005 1.27
Close to head	-0.007 -0.70	-0.008 -0.75	-0.008 -0.75	-0.007 -0.70	-0.008 -0.74	-0.008 -0.75
ROA		0.077 1.07	0.077 1.03		0.071 1.01	0.073 1.00
Market to book ratio		0.012*** 3.47	0.012*** 3.43		0.012*** 3.43	0.012*** 3.37
TFP		-0.021 -0.90	-0.022 -0.92		-0.020 -0.86	-0.021 -0.87
ln(Size)		0.016 0.69	0.017 0.63		0.012 0.50	0.012 0.44
Leverage		-0.020 -1.46	-0.020 -1.37		-0.021 -1.47	-0.020 -1.37
Union		-0.401*** -3.51	-0.354* -1.92		-0.398*** -3.47	-0.336* -1.83
CEO ownership			0.063** 2.30			0.063** 2.31
CEO tenure			0.000 0.02			0.000 0.12
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm, state, and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.548	0.545	0.545	0.548	0.545	0.545
Number of observations	88,904	87,894	87,894	88,904	87,894	87,894

Panel B: Negative Press

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Negative Press	0.001	0.007***	0.007**	0.002	0.008***	0.009***
	0.26	2.65	2.37	0.64	3.09	2.87
ln(CEO total)				0.012**	0.011***	0.013**
				2.44	2.64	2.36
Close to head	-0.007	-0.008	-0.008	-0.007	-0.008	-0.008
	-0.70	-0.74	-0.74	-0.70	-0.74	-0.74
ROA		0.035	0.049		0.019	0.038
		0.49	0.67		0.27	0.54
Market to book ratio		0.011***	0.010***		0.011***	0.010**
		2.90	2.64		2.79	2.44
TFP		-0.027	-0.026		-0.025	-0.024
		-1.20	-1.18		-1.26	-1.21
ln(Size)		0.040	0.038		0.031	0.025
		1.53	1.35		1.24	0.94
Leverage		-0.022*	-0.019		-0.025*	-0.019
		-1.73	-1.20		-1.79	-1.24
Union		-0.463***	-0.424**		-0.460***	-0.383**
		-4.08	-2.56		-4.00	-2.29
CEO ownership			0.070**			0.070**
			2.24			2.26
CEO tenure			0.000			0.001
			0.75			1.18
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm, state, and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.548	0.545	0.545	0.548	0.545	0.545
Number of observations	88,904	87,894	87,894	88,904	87,894	87,894

Table 7: CEO compassion

This table presents results for regressions with the log median annual wage of full-time employees as the dependent variable and the interaction term between CEO total compensation and close-to-headquarters. All independent variables are lagged by one year. See Table 2 for a detailed overview of the variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Close to head $\times$ ln(CEO total)	0.006	0.010	0.011	0.009	0.009	0.009
	0.39	0.73	0.74	0.48	0.48	0.50
ln(CEO total)	0.047**	0.035***	0.034***	0.017**	0.014*	0.014*
	2.26	2.90	2.81	2.02	1.86	1.95
Close to head	-0.052	-0.124	-0.135	-0.138	-0.143	-0.147
	-0.25	-0.60	-0.61	-0.49	-0.49	-0.50
ROA		-0.090	-0.015		0.049	0.062
		-0.85	-0.13		0.84	1.00
Market to book ratio		-0.021***	-0.024**		0.001	0.000
		-2.72	-2.59		0.21	0.12
TFP		0.032	0.030		-0.020	-0.021
		0.97	0.84		-0.82	-0.86
ln(Size)		-0.015	-0.012		0.031	0.029
		-0.92	-0.85		1.41	1.25
Leverage		0.017	0.042		-0.022	-0.019
		0.26	0.66		-1.51	-1.23
Union		0.194***	0.171**		-0.355***	-0.360***
		2.66	2.58		-2.73	-2.78
Employee risk		0.377**	0.326*			
		2.16	1.93			
CEO ownership			0.017			0.099*
			0.26			1.94
CEO tenure			0.002**			0.000
			2.15			0.72
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
State, year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	No	No	No
Firm FE	No	No	No	Yes	Yes	Yes
Adjusted R ²	0.615	0.619	0.619	0.553	0.549	0.549
Number of observations	108,364	107,198	107,198	108,541	107,375	107,375

Table 8: Employee turnover

This table presents results for regressions with two employee turnover variables as dependent variables: Outflow and Outflow white-collar. All independent variables are lagged by one year. See Table 2 for a detailed overview of the variable definitions. We exclude observations where the absolute yearly changes in the numbers of employees at the establishment level is above the 95% percentile. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	Outflow			Outflow white-collar		
	(1)	(2)	(3)	(4)	(5)	(6)
ln(CEO total)	-0.015	-0.015*	-0.015	-0.007	-0.001	-0.004
	-1.45	-1.71	-1.57	-0.74	-0.12	-0.35
ln(Wage)	-0.079***	-0.078***	-0.078***	-0.017	-0.016	-0.017
	-9.40	-9.42	-9.41	-0.78	-0.78	-0.78
ln(# Estab. employees)	-0.040***	-0.040***	-0.040***	-0.031***	-0.030***	-0.031***
	-17.52	-17.37	-17.37	-7.97	-7.87	-7.90
Female %	-0.054**	-0.054**	-0.054**	0.090**	0.090**	0.090**
	-2.36	-2.35	-2.36	2.41	2.41	2.42
Low qualified %	0.000	0.000	0.000	-0.085***	-0.085***	-0.085***
	0.00	0.01	0.01	-5.19	-5.11	-5.20
Qualified %	-0.036***	-0.036***	-0.036***	-0.021	-0.022	-0.022
	-2.74	-2.66	-2.65	-1.08	-1.10	-1.10
Highly qualified %	0.043**	0.044**	0.044**	0.156***	0.157***	0.157***
	2.04	2.08	2.08	2.91	2.91	2.91
German %	-0.141***	-0.143***	-0.143***	-0.024	-0.026	-0.026
	-3.50	-3.58	-3.58	-0.62	-0.67	-0.67
Manager %	0.008	0.008	0.008	0.088***	0.087***	0.087***
	0.33	0.31	0.31	2.84	2.84	2.84
White collar %	0.050	0.050	0.050			
	1.48	1.45	1.45			
Employee age	-0.001	-0.001	-0.001	-0.002***	-0.002***	-0.002***
	-1.21	-1.15	-1.14	-2.93	-2.92	-2.93
Close to head	0.006	0.006	0.006	0.012**	0.012**	0.012**
	1.56	1.47	1.47	2.46	2.35	2.36
ROA		-0.080	-0.078		-0.143	-0.153
		-0.66	-0.61		-0.91	-0.94
Market to book ratio		-0.003	-0.003		-0.005**	-0.005**
		-1.11	-1.17		-2.13	-2.22
TFP		0.056*	0.055*		-0.008	-0.006
		1.99	1.97		-0.28	-0.21
ln(Size)		-0.055	-0.055		-0.038	-0.029
		-1.36	-1.34		-0.96	-0.81
Leverage		0.047	0.048		0.041	0.036
		1.50	1.51		1.48	1.45
Union		0.352**	0.351**		0.153	0.124
		2.21	2.17		1.19	1.06
CEO ownership			0.051			0.068**
			1.02			2.37
CEO tenure			0.000			-0.001
			0.03			-1.24
Firm, state, year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.162	0.163	0.163	0.262	0.262	0.262
Number of observations	70,357	69,876	69,876	70,357	69,876	69,876

Table A1: CEO compensation and employee wages: Robustness checks with additional controls

This table presents results for firm fixed effects regressions with the log median annual wage of full-time employees as the dependent variable using additional control variables: (1) Stock return, (2) board size, (3) additional CEO characteristics, (4) R&D to sales, and (5) union variables. We count missing values as zeros for R&D to sales and augment regression (4) with a dummy that becomes one if the R&D variable is missing. In column (6), we take the fixed component of CEO wage instead of CEO total compensation. All independent variables are lagged by one year. The unreported control variables are the same as in Table 3, column (5). See Table 2 for a detailed overview of the variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(CEO total)	0.017**	0.016**	0.016**	0.014**	0.016**	
	2.63	2.54	2.36	2.39	2.48	
ln(CEO fixed)						0.022*
						1.98
Stock return	-0.009*					
	-1.90					
Board size		0.002				
		0.85				
CEO switch			0.002			
			0.45			
CEO age			-0.002***			
			-3.95			
CEO out-hiring			0.015**			
			2.04			
R&D to sales adjusted				0.000		
				1.48		
Missing R&D to sales				0.022***		
				3.30		
IG BCE					-0.223***	
					-6.52	
IG Metall					-0.069	
					-0.71	
Verdi					-0.172***	
					-2.78	
Firm variables	Yes	Yes	Yes	Yes	Yes	Yes
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm, state, year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.549	0.549	0.549	0.549	0.549	0.549
Number of observations	107,295	107,375	106,711	107,375	107,375	107,189

Table A2: CEO compensation and employee wages: Different sets of fixed effects

This table presents results for regressions with the log median annual wage of full-time employees as the dependent variable. All independent variables are lagged by one year. The table displays results for regressions with different sets of fixed effects. The unreported control variables are the same as in Table 3. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)				
	(1)	(2)	(3)	(4)	(5)
Panel A: Firm, industry, year and state fixed effects					
ln(CEO total)	0.019**	0.017*	0.016**	0.016**	0.018**
	2.00	1.97	2.15	2.15	2.32
Adjusted R ²	0.566	0.647	0.644	0.644	0.644
Number of observations	110,313	108,364	107,198	107,198	107,198
Panel B: Establishment and year fixed effects					
ln(CEO total)	0.015**	0.015**	0.011*	0.011*	0.011*
	2.27	2.36	1.81	1.81	1.85
Adjusted R ²	0.072	0.084	0.085	0.085	0.085
Number of observations	110,518	108,541	107,375	107,375	107,375
Panel C: CEO, year and state fixed effects					
ln(CEO total)	0.023**	0.022**	0.019***	0.019***	0.019***
	2.34	2.63	2.91	2.92	2.92
Adjusted R ²	0.405	0.553	0.550	0.550	0.550
Number of observations	110,518	108,541	107,375	107,375	107,375
Panel D: Firm, industry $\times$ year and state fixed effects					
ln(CEO total)	0.024**	0.020**	0.017**	0.017**	0.017**
	2.04	2.34	2.27	2.27	2.29
Adjusted R ²	0.569	0.648	0.646	0.646	0.646
Number of observations	110,313	108,364	107,198	107,198	107,198
Panel E: State $\times$ year and firm fixed effects					
ln(CEO total)	0.019**	0.018**	0.015**	0.015**	0.016**
	2.16	2.35	2.29	2.29	2.38
Adjusted R ²	0.406	0.554	0.550	0.550	0.550
Number of observations	110,518	108,541	107,375	107,375	107,375

Table A3: Summary statistics for the treatment group and the control group

This table presents the summary statistics for the treatment group and the control group at the year 2006. We also perform the t-test and the median test between the treatment and the control groups, which is presented in the last columns. For establishment-level variables, observations are first aggregated at the firm level by taking the average weighted by the number of employees who work in the establishment, and then the t-test and the median test are performed.

Panel A: Summary statistics for firm-level variables for 2006

	Treatment group			Control group			t-test	Median test
	N	Mean	Median	N	Mean	Median	p-value	p-value
CEO total (thousands)	22	2,655	1,912	47	2,531	1,997	0.853	0.664
ln(CEO total)	22	14.28	14.46	47	14.31	14.51	0.917	0.664
CEO fixed (thousands)	22	797	595	47	684	638	0.483	0.664
ln(CEO fixed)	22	13.27	13.29	47	13.25	13.37	0.924	0.664
Board total (thousands)	22	1,485	1,165	48	1,704	1,432	0.476	0.303
ln(Board total)	22	13.92	13.97	48	14.07	14.17	0.473	0.303
Δ (board total)	22	0.07	0.05	48	0.14	0.08	0.327	0.303
Other total (thousands)	22	1,124	975	46	1,531	1,209	0.091	0.300
ln(Other total)	22	13.67	13.79	46	13.99	14.00	0.115	0.300
CEO tenure	22	5.27	3.00	47	6.98	5.00	0.189	0.916
CEO ownership	22	0.18	0.00	47	0.09	0.00	0.310	0.242
CEO age	22	53.09	53.00	46	53.87	54.50	0.683	0.482
ROA (%)	22	0.07	0.06	48	0.06	0.05	0.702	0.607
Market to book ratio	22	3.51	2.46	48	3.30	2.46	0.823	1.000
TFP	21	0.12	0.13	48	0.13	0.18	0.942	0.481
Market capitalization (millions)	22	8,271	1,837	48	13,708	3,709	0.184	0.303
ln(Market capitalization)	22	14.61	14.42	48	15.22	15.13	0.192	0.303
Size (millions)	22	14,190	1,955	48	18,674	2,365	0.594	0.607
ln(Size)	22	14.76	14.48	48	15.01	14.67	0.631	0.607
Leverage	22	0.19	0.17	48	0.21	0.17	0.700	1.000
# Firm employees	22	38,357	10,555	48	66,708	18,332	0.237	0.303
ln(# Firm employees)	22	9.26	9.26	48	9.53	9.82	0.579	0.303
Employee risk	22	0.14	0.10	49	0.19	0.12	0.283	0.344
Stock return	22	0.32	0.24	49	0.34	0.27	0.854	0.937
Board size	22	4.40	3.34	48	4.93	4.63	0.384	0.122
R&D to sales	17	2.83	2.43	28	18.87	4.89	0.129	0.155
R&D to sales adjusted	22	2.19	2.23	49	10.78	0.17	0.157	0.105
Missing R&D to sales	22	0.23	0.00	49	0.43	0.00	0.089	0.103

Panel B: Summary statistics for establishment-level variables for 2006

	Treatment group			Control group			t-test	Median
	N	Mean	Median	N	Mean	Median	p-value	test p-value
Nominal Wage	22	36,669	35,724	49	38,119	39,048	0.511	0.344
Wage	22	10.43	10.45	49	10.43	10.55	0.981	0.344
# Estab. employees	23	12,033	3,841	49	19,225	3,030	0.412	0.800
log(# Estab. employees)	22	8.10	8.31	49	8.19	8.02	0.846	0.937
Female %	22	0.32	0.32	49	0.39	0.40	0.093	0.144
Low qualified %	22	0.07	0.05	49	0.04	0.03	0.048	0.008
Qualified %	22	0.63	0.63	49	0.61	0.61	0.631	0.937
Highly qualified %	22	0.16	0.15	49	0.21	0.17	0.209	0.144
German %	22	0.95	0.95	49	0.96	0.96	0.138	0.048
Manager %	22	0.06	0.06	49	0.05	0.04	0.465	0.553
White collar %	22	0.65	0.67	49	0.78	0.86	0.012	0.048
Employees age	22	40.93	41.17	49	40.68	40.99	0.799	0.937
Close to head	22	0.32	0.23	49	0.29	0.22	0.537	0.269
Outflow	22	0.17	0.17	48	0.20	0.19	0.161	0.122
Outflow white-collar	22	0.12	0.10	48	0.17	0.15	0.028	0.122

Table A4: The impact of the law change on employee wages

This table reports event-study estimates of the 2006 law mandating individual executive compensation disclosure on the logarithm of the median annual wage at the establishment level, $\ln(\text{Wage})_{i,t}$, following equation (4). Event time is measured relative to the year 2006, with $t = -3$ omitted as the baseline. All control variables are lagged by one year. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	$\ln(\text{Wage})$				
	(1)	(2)	(3)	(4)	(5)
Treatment x $t = -2$	-0.009	0.039	0.037	-0.007	-0.010
	-0.16	1.09	0.87	-0.12	-0.16
Treatment x $t = -1$	-0.043	0.012	0.036	0.025	0.012
	-0.69	0.29	1.00	0.61	0.33
Treatment x $t = 0$	-0.023	0.029	0.060	0.046	0.036
	-0.35	0.65	1.60	1.10	1.00
Treatment x $t = 1$	-0.024	0.024	0.094***	0.079**	0.085**
	-0.37	0.57	3.24	2.43	2.45
Treatment x $t = 2$	-0.024	0.015	0.059	0.043	0.044
	-0.37	0.33	1.33	0.93	0.95
Treatment x $t = 3$	-0.015	0.024	0.056	0.030	0.028
	-0.26	0.60	1.28	0.67	0.65
Close to head		0.034**	0.031**	0.031**	0.031**
		2.63	2.29	2.33	2.37
ROA			-0.049	0.031	0.153
			-0.27	0.17	0.77
Market to book ratio			-0.016**	-0.013*	-0.022**
			-2.10	-1.76	-2.56
TFP			0.015	0.054	0.058
			0.44	1.52	1.51
$\ln(\text{Size})$			0.019	0.000	0.003
			1.51	-0.02	0.20
Leverage			0.037	0.089	0.122*
			0.58	1.36	1.73
Union				0.185**	0.161**
				2.60	2.39
Employee risk				0.254	0.086
				1.06	0.37
CEO ownership					0.038
					0.60
CEO tenure					0.005***
					2.76
Establishment variables	No	Yes	Yes	Yes	Yes
Adjusted R ²	0.510	0.615	0.619	0.621	0.624
Number of observations	85,559	81,033	79,971	79,971	79,702

Table A5: Press data and employee wages with one lag

This table presents results for regressions with the log median annual wage of full-time employees as the dependent variable. The press and CEO pay variable are lagged by one years, like the other independent variables. In Panel A, the variable Total Press is the number of press reports on firm's management compensation per year. In Panel B, the variable Negative Press is the number of press reports on firm's management compensation per year with a negative tone. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Panel A: Total Press

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Total Press	0.000	0.000	0.000	0.000	0.001	0.001
	-0.98	0.34	0.32	1.04	1.37	1.35
ln(CEO total)				0.020**	0.016**	0.017**
				2.35	2.29	2.39
Close to head	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007
	-0.58	-0.61	-0.62	-0.58	-0.62	-0.62
ROA		0.065	0.071		0.033	0.044
		0.92	0.96		0.51	0.66
Market to book ratio		0.007*	0.007*		0.006	0.005
		1.94	1.81		1.47	1.27
TFP		-0.019	-0.020		-0.019	-0.020
		-0.67	-0.71		-0.74	-0.78
ln(Size)		0.034	0.033		0.027	0.025
		1.30	1.19		1.13	0.98
Leverage		-0.011	-0.009		-0.018	-0.015
		-0.75	-0.58		-1.31	-1.04
Union		-0.804***	-0.838***		-0.838***	-0.878***
		-6.58	-6.82		-6.76	-6.99
CEO ownership			0.098*			0.102**
			1.96			2.02
CEO tenure			0.000			0.000
			0.24			0.59
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm, state, and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.552	0.548	0.548	0.552	0.548	0.548
Number of observations	107,913	106,747	106,747	107,913	106,747	106,747

Panel B: Negative Press

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
Negative Press	-0.001	0.000	0.000	0.001	0.001	0.001
	-0.72	0.16	0.15	0.61	0.74	0.78
ln(CEO total)				0.019**	0.014**	0.015**
				2.23	2.11	2.20
Close to head	-0.007	-0.007	-0.007	-0.007	-0.007	-0.007
	-0.58	-0.61	-0.62	-0.58	-0.62	-0.62
ROA		0.066	0.072		0.037	0.049
		0.95	0.97		0.60	0.74
Market to book ratio		0.007*	0.007*		0.006	0.005
		1.93	1.79		1.49	1.29
TFP		-0.019	-0.020		-0.019	-0.020
		-0.67	-0.70		-0.71	-0.72
ln(Size)		0.034	0.033		0.028	0.026
		1.33	1.20		1.22	1.04
Leverage		-0.011	-0.009		-0.017	-0.014
		-0.68	-0.50		-1.18	-0.86
Union		-0.805***	-0.839***		-0.837***	-0.877***
		-6.46	-6.71		-6.67	-6.93
CEO ownership			0.098*			0.102**
			1.98			2.03
CEO tenure			0.000			0.000
			0.23			0.61
Establishment variables	Yes	Yes	Yes	Yes	Yes	Yes
Firm, state, and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.552	0.548	0.548	0.552	0.548	0.548
Number of observations	107,913	106,747	106,747	107,913	106,747	106,747

Table A6: Contemporaneous CEO compensation and employee wages

This table presents results for firm fixed effects regressions of the contemporaneous CEO compensation on the log median annual wage of full-time employees as the dependent variable. All control variables are lagged by one year. See Table 2 for a detailed overview of variable definitions. We use the White (1980) robust standard errors clustered at the firm level. The t-statistics are reported below the estimates. ***, ** and * indicate that the value is significantly different from zero at the 1%, 5% and 10% levels.

Dependent variable:	ln(Wage)					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(CEO total)	0.014** 2.14	0.008*	0.005	0.005	0.007	-0.001
ln(# Estab. employees)		0.061*** 2.81	0.062*** 2.80	0.062*** 2.80	0.062*** 2.80	0.064*** 3.07
Female %		-0.339** -2.55	-0.340** -2.54	-0.340** -2.54	-0.340** -2.54	-0.325*** -2.69
Low qualified %		-0.004 -0.08	-0.004 -0.08	-0.004 -0.08	-0.004 -0.08	-0.004 -0.08
Qualified %		0.263*** 10.91	0.264*** 11.08	0.264*** 11.08	0.264*** 11.08	0.265*** 10.74
Highly qualified %		0.684*** 9.33	0.688*** 9.49	0.688*** 9.49	0.688*** 9.47	0.673*** 10.25
German %		0.286*** 4.47	0.288*** 4.47	0.288*** 4.47	0.289*** 4.47	0.277*** 4.63
Manager %		0.088* 1.75	0.086* 1.72	0.086* 1.72	0.086* 1.72	0.111** 2.18
White collar %		0.174*** 8.46	0.174*** 8.47	0.174*** 8.47	0.174*** 8.46	0.190*** 9.40
Employee age		0.002 0.66	0.002 0.66	0.002 0.66	0.002 0.65	0.002 0.72
Close to head		-0.007 -0.60	-0.008 -0.63	-0.008 -0.63	-0.008 -0.65	-0.007 -0.66
ROA			0.025 0.61	0.025 0.61	0.046 1.02	-0.007 -0.10
Market to book ratio			0.006 1.28	0.006 1.28	0.004 0.94	0.004 0.73
TFP			0.000 -0.01	0.000 -0.01	-0.002 -0.06	-0.014 -0.55
ln(Size)			0.032 1.29	0.032 1.29	0.029 1.09	0.010 0.66
Leverage			-0.017 -0.92	-0.017 -0.92	-0.012 -0.64	-0.006 -0.31
Union				-0.267*** -3.56	-0.283*** -3.67	-0.243*** -2.96
CEO ownership					0.165*** 2.64	0.016 1.60
CEO tenure					0.001 0.96	0.000 0.46
Firm, state, year FE	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	0.399	0.550	0.547	0.547	0.548	0.555
Number of observations	124,006	121,847	120,664	120,664	120,527	68,667

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