Can employee welfare policies insure workers against fluctuations in employment?

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Abstract

We study the effects of employee welfare policies (EWPs) on labor investment decisions of U.S. firms. We show that EWPs are associated with significant reductions in the pass-through of industry sales shocks to firm employment growth. EWPs' insulation effect is weaker when state unemployment insurance is more generous, suggesting corporate and government welfare policies substitute one another. We also show that EWPs provide more protection in states where Right-to-work laws render collective bargaining weaker, and in states where wage growth is lower. We corroborate our results exploring plausibly exogenous variation in firms' workforce policies arising from the adoption of Paid Sick Leave laws by several U.S. states, and from industry-wide shocks to negative labor-related ESG incidents. Our findings suggest that EWPs may insure workers against employment fluctuations.

Keywords: Employee Welfare, Corporate Social Responsibility, Employment Growth, Labor Investments; Sales Shocks, Unemployment Insurance.

JEL codes: G3, J21, E22, M12, M14, J65

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1 Introduction

Firms are increasingly responding to the mounting societal pressure to treat their labor force more responsibly by pursuing employee welfare policies (EWPs). The incentives for firms to act in a more diligent manner toward their workforce can come from the regulatory and institutional environment (Liang & Renneboog, 2017), from investors (Dyck *et al.*, 2019; Ferrell *et al.*, 2016), and from their communities (Pargal & Wheeler, 1996). But firms can also do so motivated by self-interest. For instance, growing evidence from the finance literature shows that employee welfare policies are associated with a stronger financial performance (Edmans, 2011), with lower operational risk (Curti *et al.*, 2022), and with stronger resilience during crises (Shan & Tang, 2022).

However, while the extant literature suggests that EWPs generate economic gains for firms, whether and how exactly such initiatives benefit workers themselves remains less understood. Pertinently, a distinctive feature of employee welfare policies is to enable firms to pursue value maximazing strategies to shareholders while balancing their financial goals with the interests of workers. According to this view, ESG initiatives such as those aimed at improving employee welfare can be viewed as rent-yielding intangible assets, and thus sources of long-term value creation which beyond benefiting firms, also exert positive spill-over effects for the wider society (Edmans, 2023).

An important question that emerges is whether firms pursuing employee welfare policies can protect their workforce against economic adversities. In this paper, we address this question empirically. Such an inquiry gains special relevance when juxtaposing the traditional view that governments bear most responsibility for insuring workers against employment fluctuations vis-a-vis the growing view that firms should shoulder more responsibility for the welfare of the workforce.

Firms can be alternative insurance providers for workers, to an important extent due to their greater risk diversification capacity (e.g., Murro *et al.* (2022); Azariadis (1975)), with firms and workers establishing an implicit risk-sharing agreement whereby firms insure employees against adverse economic shocks. However, whether employee welfare policies can contribute to insurance provision remains intriguingly unclear. The net benefits and effectiveness of such policies may hinge upon the complexity of the incentives at play and on the credibility of commitments. Insurance provision by firms may result in a more sustainable relation with workers, which may create value.

Employee policies may reassure workers of job stability and function as a retention tool that lowers replacement costs, especially when human capital is more specific. On the other hand, insuring workers can be quite costly for firms. The proposition we examine empirically is whether EWPs can facilitate risk-sharing between firms and workers. We do so by testing whether EWPs mitigate (moderate) the propagation of industry sales shocks to firm employment growth.

Our empirical analysis explores a sample of 1,594 public U.S. firms, covering a time period between 2002 and 2019. Our proxy for firms' EWPs is sourced from the Refinitiv ESG database. This database provides ratings that reflect firms' engagement with three main pillars of stakeholder governance: Environmental, Social, and Governance (*ESG*). In line with the literature (e.g., Curti *et al.* (2022); Cao *et al.* (2019)), we focus on the social pillar (the *S* in the *ESG acronym*), since it reflects more accurately firm policies that relate to employees. The S pillar is further divided into four category ratings capturing different dimensions of firms' social responsibility: *Workforce*, *Human Rights*, *Comunity*, and *Product Responsibility.* We choose *Workforce* as our proxy for EWPs, since it is the category of the S pillar capturing employee relations more directly.

We regress the growth rate of firm employment against two main explanatory variables, and their interaction. The first is the growth rate of industry sales as our measure of sales shocks, the second is the variable *Workforce* as a proxy for EWPs, and the third is their interaction. We expect that positive (negative) industry sales shocks should exert a positive (negative) pass-through or propagation effect on firm employment growth. Our main testing parameter is the interaction between industry sales shocks and the variable Workforce. If EWPs insure workers against industry-led fluctuations in employment, then we should observe a mitigation effect exerted by EWPs on the strength of the propagation of sales shocks to firm employment growth.

Our main results show that, indeed, firm employment growth significantly increases following positive industry sales shocks. Furthermore, we find a negative interaction between the industry sales shock and the variable *Workforce*, indicating that EWPs are associated with a significantly weaker pass-through of sales shocks to firm employment growth. When looking at the effects of strictly adverse economic shocks, we further find that EWPs are associated with a significantly weaker propagation of negative sales shocks to employment growth. Such findings altogether suggest that employee-oriented policies may insulate workers against fluctuactions in employment. Importantly, our models are robust to the inclusion of controls capturing key firm characteristics that may correlate with the proclivity to engage in employee welfare policies and also affect employment growth (e.g., growth opportunities, size, profitability, leverage, and asset tangibility), and absorb unobserved heterogeneity with the inclusion of firm and year fixed effects.

However, the association we uncover between EWPs and the provision of insurance may be endogenously determined. An equally plausible interpretation of our findings is that the provision of insurance by firms may be an implicit component of EWPs, and not necessarily a direct consequence of such initiatives. We run several tests to disentangle such potentially competing effects, in which we (i) tease out plausibly exogenous variation in the adoption of employee welfare policies by firms, and (ii) explore state-level heterogeneity in labor market conditions that can condition workers' demand for insurance from firms, and hence firms' incentives to adopt EWPs to insure employees.

Following Curti *et al.* (2022), we use the staggered adoption of Pay Sick Leave laws (PSL) by several U.S. states as a regulatory shock. The logic is that the passage of PSL laws lead to an increase in pay sick leave by firms headquartered in affected states. As the aforementioned authors argue, the passage of PSL laws likely spilled over into the adoption by firms of more workforce policies of a similar nature, thus teasing out a plausibly exogenous variation in firms' employee welfare initiatives. In fact, we are able to demonstrate that following the passage of PSL laws, firms in treated states significantly reduce the pass-through of industry sales shocks to fluctuations in employment in excess of comparable firms from states that did not adopt such laws. Thus, this policy-induced exogenous shock to EWPs lead to more employment insurance provision.

We further explore industry-wide shocks to labor-related negative ESG incidents as a source of external perturbation to firms' employee welfare policies. Employing the incidents data from RepRisk, first we find that firms react to increases in the number of negative incidents affecting their industry peers (excluding the focal firm itself) by boosting their own engagement with labor-related policies, thus suggesting that firms anticipate increased scrutiny over policies may follow when labor-related incidents within their industries become more frequent. Second, we demonstrate that when industries are hit by increases in labor-related incidents, the propagation of sales shocks to fluctuations in employment by focal firms turns significantly weaker, in line with more insurance.

We then look into heterogeneity in labor market conditions to identify shifts in workers' demand for insurance from firms. First, we examine unemployment insurance (UI). When governments provide UI, beyond financially insulating workers, they also buffer risk and thus subsidize firms by reducing layoff costs (Van Doornik *et al.*, 2022; Matsa, 2018; Nicholson & Needels, 2006). We anticipate that workers are more likely to demand employment insurance from firms when the state unemployment insurance policies are weaker. In fact, we find that in states where unemployment insurance is more (less) generous, the mitigating effect of EWPs on the pass-through of industry sales shocks to firm employment becomes weaker (stronger). Such findings suggest that EWPs provide more insurance when the demand for protection is higher due to a more fragile social protection network, suggesting a substitution effect between corporate EWPs and state UI policies.

We further explore state heterogeneity in the adoption of Right-to-work (RTW) laws, a regulatory mark that weakens collective bargaining power, and consequently the power of unions (Chava *et al.*, 2020). Our prior here is that workers should demand more insurance from firms when weaker collective bargaining renders workers more vulnerable to employment loss. In fact, we are able to show that EWPs mitigate the propagation of sales shocks to employment more strongly in states where workers enjoy less protection as offered by collective bargaining schemes.

We also examine the impact of wages on firms' insure provision. In principle, the tacit risk-sharing agreement between firms and workers dictates that firms' supply of insurance is a decreasing function of wages. We show that the mitigation effect of EWPs on employment fluctuations is significantly weaker when the states' minimum wages and earnings increase. Thus, risk-sharing between firms and workers seems indeed more binding if wage growth is lower, and therefore insurance provision less costly. We also consider the role of technology, and show that EWPs can mitigate the propagation of technological shocks and the ensuing substitution of labor by capital.

It is noteworthy that ESG ratings have been criticized by scholars and by practitioners due to measurement issues (e.g., Berg *et al.* (2022); Raghunandan & Rajgopal (2021)). Similarly, economic shocks can be exposed to estimation issues. We run several robustness tests to mitigate such concerns, testing our models with shocks measured in different ways and dimensions. We calculate firm-level sales shocks, use industry employment shocks, and test with state-level employment inflow shocks. Our findings remain robust to all these tests.

Our findings are robust to models estimated with state-level instruments. We follow the view that the social capital of the environment where firms operate permeates their social responsibility engagement and spill over to employee policies (e.g., Curti *et al.* (2022)). Our first instrument captures the strictness of states' LGBTQ Hate Crimes Legislation. The logic is that policies inflicting more severe penalties against the aggression of minorities signal stronger social capital, thus being positively associated with Workforce policies. Since it is unlikely that firms can, atomistically, affect their states' constitutional choices, we consider plausible that states' hate crime legislation evolves exogenously to employment decisions of individual firms. Our second instrument captures the death toll from Workplace Shootings. The relevance logic is that deadly workplace shootings signal poor social capital, thus being negatively associated with Workforce policies. Given the death toll from such fatal incidents is fortuituous, it seems reasonable to consider that such state-level violent episodes occur plausibly exogenously to the labor investments of individual firms.

Our findings also remain robust to tests relaxing the way employee welfare policies are measured. In line with the literature (e.g., Bansal *et al.* (2022)), we re-estimate our models replacing the Workforce ratings from Refinitiv with measures capturing Employee-related strengths and concerns sourced from the KLD database. Our findings remain robust. Moreover, we address the issue of ESG pillars (and categories) often being correlated, despite seeking to measure different constructs. We augment the models with interactions between the sales shocks and the remaining categories of the S pillar and with the E and G pillars, to ensure the interaction effect between the shocks and the category *Workforce* is indeed capturing variability that is attributable to employee-related initiatives. We observe again a robust mitigation effect of EWPs on employment fluctuations.

Our study contributes mainly to the literature examining the impact of EWPs on corporate outcomes. Several studies show that employee welfare policies are associated with stronger stock market performance (Edmans, 2011; Edmans *et al.*, 2022), with lower operational risk in the banking sector (Curti *et al.*, 2022), with a more resilient financial performance in times of crisis, such as during COVID (Shan & Tang, 2022), with higher profitability (Fauver *et al.*, 2018), with a higher likelihood of hiring and retaining more productive workers (Flammer & Luo, 2017), with a longer IPO survival period in entrepreneurial firms (Amini *et al.*, 2022), with a lower use of financial leverage (Bae *et al.*, 2011), with more positive (negative) stock returns upon domestic (cross-border) M&A deal announcements (Liang *et al.*, 2020), and with more efficient labor investment decisions (Cao & Rees, 2020). In line with the growing view that sustainable finance can also contribute to non-financial corporate objectives (e.g., Edmans & Kacperczyk (2022)), our findings showcase that employee welfare policies can further impact real economic variables through affecting the propagation of industry, firm, and state-level economic shocks to labor investment decisions.

Our findings also accord new insights to the literatures on labor investments and risk sharing among firms, workers, and the state. For instance, Murro *et al.* (2022) show that firms with more durable relationships with banks display a significantly weaker employment growth sensitivity to negative economic shocks. Ellul *et al.* (2018) suggest that family firms, for establishing closer bonds with their employees, can credibly commit to insuring workers in the event of negative shocks and show that insurance provided by firms and government act as substitutes. Van Doornik *et al.* (2022) show that more generous state unemployment insurance shifts the labor supply from safer to riskier firms. We identify in EWPs a novel potential insurance mechanism and provide renewed evidence of a substitution effect between firms' and governments' welfare policies in insuring workers.

2 Data and research design

2.1 Data and variables

We collect our data from two main sources. The ESG ratings data is from the Refinitiv ESG database. Firm-level financial data is obtained from Compustat. We further employ additional data from multiple sources. We obtain unemployment insurance data from the US Department of Labor, and additional state-level variables from the FRED database. Our data cover the period from 2002 to 2019. After merging the ESG data with Compustat, we are able to analyze 1,594 non-financial public firms. Table 16 in the Appendix describes all the variables and their source.

We construct the variables and specify our empirical model in following the employment growth literature (e.g., Murro *et al.* (2022); Ellul *et al.* (2018)). The dependent variable is the growth rate of firm employment (η_{it}), which is calculated as follows:

$$\eta_{it} = \ln Employment_{it} - \ln Employment_{it-1} \tag{1}$$

The first explanatory variable of interest in our analysis captures industry sales shocks (ϵ_{jt}). We calculate the growth rate of sales of industry j (at the 3-digit SIC level, excluding the focal firm i to mitigate the risk that employment and sales may be endogeneously determined) as follows: [1]

$$\epsilon_{jt} = \ln Sales_{jt} - \ln Sales_{jt-1} \tag{2}$$

Our second explanatory variable of interest is the strength of firms' employee welfare policies (EWPs), which is empirically proxied with the variable $Workforce_{it}$. Workforce is one of the categories of the Social Pillar, which is one of the key dimensions of stakeholder governance from Refinitiv's ESG triad. The S pillar has four main category ratings which are meant to reflect different social responsibility initiatives: *Workforce*, *Human Rights*, *Comunity*, and *Product Responsibility*. Our choice for *Workforce* as our measure of EWPs follows the extant literature (e.g., Curti *et al.* (2022); Cao *et al.* (2019); Liang *et al.* (2020)), and is also economically motivated since it is the category of the S pillar reflecting firms' initiatives directed toward improving employee relations more directly and explicitly. The *Workforce* category rating encapsulates key dimensions of firms' policies and initiatives toward their employees, including actions aimed at issues like diversity and inclusion, career development and training, working conditions, and health & safety. Workforce is measured on a [0,100] scale, with higher scores (ratings) associated with stronger employee-oriented policies and initiatives (we convert the scores to a [0,1] scale to maintain consistency with the measurement of the remaining employment, sales, and financial variables).

The remaining variables appearing in our main model are controls. We include in the model

[1] In our main specification sales growth is continously measured as in Ellul *et al.* (2018), but we do test additional models as robustness where we look into strong negative sales shocks as in Murro *et al.* (2022).

firm characteristics that are known to influence labor investments, and that could correlate with firms' proclivity to engage with employee-oriented initiatives. For example, larger firms are natural candidates for making more sizeable labor investments, while at the same time having more resources to allocate to stakeholder governance initiatives. A similar reasoning applies to variables like profitability, financial leverage, capital intensity, and growth opportunities. Thus, we control for growth (the natural log of the Tobin's Q ratio), for size (the natural log of Total Assets), for profitability (ROA), for asset tangibility (Net PPE/Assets), and for financial leverage (Total Debt/Market Capitalization). In additional models, we do test for other important characteristics, such as competition, industry concentration, and cost structure.

2.2 Descriptive statistics

Table 1 reports descriptive statistics. The mean employment growth is 0.055 (5.5%), with a standard deviation of 0.20. Firms at the lowest 25th percentile of the distribution experience net firings of about -0.017, whereas for firms at the highest 75th percentile net hirings reach about 0.105. We observe an average growth rate of sales across industries at about 0.03 (3%), with standard deviation of 0.157. In terms of firms' EWPs, the average rating on the Workforce category is about 0.442 (out of a maximum of 1), with a standard deviation of 0.268. Firms with the strongest employee-oriented initiatives at the top 75th percentile of the distribution have average ratings at 0.648, whereas firms with poorer ratings at the 25th percentile score 0.22 on average. [2]

[Insert Table 1 about here]

To examine differences in the characteristics of firms following employee welfare policies more or less actively, the statistics reported in Table 2 compare the means of key variables across firms with Low (below the median) and High (above the median) Workforce ratings. We do not see any material differences in terms of employment growth, while we observe a slightly higher growth rate of industry sales in firms with higher Workforce ratings, although such difference is economically small and statistically weak. In terms of financial characteristics, we spot no discernible differences in terms of growth opportunities and immaterial differences in terms of asset tangibility. However,

[2] Key summary statistics at the industry-level are reported in Table 17, located in the Appendix

we observe rather significant differences, both economically and statistically, in terms of size, profitability, and leverage, with firms scoring higher ratings being often larger and more profitable, while relying less on debt capital when compared to firms with lower ratings in the Workforce variable. Such pronounced differences stress the need to account for observable and unobservable confounds in the empirical models. While we deal with the observables by controlling for such covariates, we call for firm fixed effects to absorb any effects from unobservables, and also test models employing matched samples to attenuate the impact of such pronounced heterogeneity.

[Insert Table 2 about here]

2.3 Empirical model

In our main empirical test, we regress employment growth against industry sales shocks, the variable Workforce, and an interaction between these two variables. Our model is specified as:

$$\eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt} \cdot Workforce_{it} + \gamma Workforce_{it} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \tag{3}$$

In the specification above, the β coefficient captures the elasticity of firm employment growth to the industry sales shocks. Our main testing parameter is the coefficient δ multiplying the interaction between the sales shock and the variable Workforce. δ measures the effect of EWPs on the pass-through of sales shocks to employment. In other words, it captures the extent to which employee welfare policies affect the strength of the propagation of industry sales shocks to firm employment. Our expectation is that in firms with higher Workforce ratings, the pass-through to employment should be weaker, which would be reflected in a negative interaction. The coefficient γ captures the sensitivity of employment growth to Workforce ratings on its baseline effect. The vector X'_{it-1} contains the controls (growth, size, profitability, leverage, and tangibility). We absorb firm and temporal unobserved heterogeneity with firm (α_i) and year (τ) fixed effects.

3 Main Results

3.1 The Effect of EWPs on the Pass-through of Industry Sales Shocks to Employment

The main results are reported in Table 3. The findings shown in column (1) show our baseline specification. We find a significantly positive sensitivity of firm employment growth to the growth rate of industry sales. Thus, shocks to industry sales are propagated to labor investment, leading to fluctuations in employment growth. The baseline effect of Workforce is significantly positive, which suggests a tendency for higher employment growth in employee-oriented firms. The interaction between the industry sales shocks and the variable Workforce is statistically significant and takes on a negative coefficient. Therefore, the pass-through of industry sales shocks to employment growth is significantly weaker in firms with stronger employee welfare policies. Such findings altogether suggest that employee welfare policies can mitigate the propagation of industry sales shocks to employment growth, thus insuring workers against fluctuations in employment.

Briefly commenting on the coefficients posted by the control variables, Tobin's Q and ROA are both associated with significantly stronger employment growth, suggesting that employment fluctuates around firm growth and profitability. On the other hand, firm size, asset tangibility, and financial leverage are all significant and show a negative association to employment growth.

[Insert Table 3 about here]

To tease out the materiality of the economic effects, in the model reported in column (2) we split the sample in terms of High/Low Workforce ratings, and re-estimate the interactions. The β coeffecent capturing the sensitivity of employment growth to sales growth is significantly positive and equals 0.07, whereas the δ coefficient capturing the interaction of sales growth with the High/Low Workforce dummy is significantly negative and equals -0.05. The sensitivity of employment growth in High Workforce ratings firms is given by $\beta + \delta = 0.07 + (-0.05) = 0.02$. Therefore, we estimate that the elasticity of employment growth with respect to industry sales growth is about 3x smaller in firms with High Workforce ratings vis-a-vis firms with Low ratings.

Next we run a couple of sensitivity checks on the specifications. The findings shown in column (3) refer to a model where the variable Workforce enters the model in differences (Δ Workforce), whereas the findings in (4) refer to a model in which we lag both industry sales growth and Workforce by one period. We continue to observe a positive sensitivity of employment to sales growth and a significantly negative interaction between sales growth and Workforce in both models. The results shown in column (5) refer to a model in which we follow Murro *et al.* (2022) and test with negatively strong industry sales shocks (measured as a dummy variable equal to 1 when the growth rate of sales is $<$ -5%, and equal to 0 otherwise). While we find that strong negative sales shocks are associated with significant reductions in the growth rate of employment, the significantly positive interaction of the shock with the variable Workforce suggests that such reduction in employment that follows negative shocks is mitigated by employee welfare policies.

3.2 Adressing Potential Endogeneity

3.2.1 The Passage of Paid Sick Leave Laws as a shock to EWPs

In this section we address a potential endogenous effect of EWPs. We follow the lead of Curti *et al.* (2022), who also study the impact of workforce policies on corporate outcomes (on operational risk in the banking sector, specifically), and use the staggered passage of Paid Sick Leave laws (PSL) by several U.S. states as an exogenous shock to firms' workforce policies. The passage of PSL laws plausibly lead to an increase in paid sick leave by firms in affected states. Pertinently, as well noted by the aforementioned authors, PSL laws are arguably exogenously adopted and their passage likely spilled over into the adoption of more EWPs of a similar nature by firms.

Maclean *et al.* (2020) provide a clear picture of the staggered adoption of PSL laws. In total 11 states plus the District of Columbia (DC) have enacted and effected PSL laws during our sampling period (2002-2019): DC (2008, effective in 2008), Connecticut (2011, effective in 2012), California (2014, effective in 2015), Massachusetts (2014, effective in 2015), Oregon (2015, effective in 2016), Vermont (2015, effective in 2016), Arizona (2015, effective in 2016), Washington (2016, effective in 2018), Rhode Island (2017, effective in 2018), Maryland (2018, effective in 2018 after the override of the governor's veto), New Jersey (2018, effective in 2018), and Michigan (2018, effective in 2019). Because enactment and effective dates differ, this introduces some degree of uncertainty as to when firms adopted PSL policies. We follow Curti *et al.* (2022) closely and use the enactment dates in our main analyses. But we run sensitivity checks with effective dates too. From all the firms in our sample, about 34% are headquartered in states that ever adopted the PSL laws.

[Insert Figure 1 about here]

We infer from Figure 1 that employment growth exhibits parallel trends in treated and control states prior to the years in which treated states passed PSL laws. Following the passage of the PSL laws, we observe a material decline in employment growth in treated states compared to control states, which is consistent with a reduction in employment volatility. To ascertain whether this reduction in employment volatility is attributable to more insurance provision following the passage of the laws, we estimate an interaction between the PSL adoption and the sales shocks. We code a dummy variable (PSL_{st}) that is =1 during and after the years in which the PSL laws were enacted by the adopting states, and =0 before that in the ever treated states and also for the states that never enacted such laws. We then regress employment growth against the industry sales shock, the PSL dummy, and an interaction between the two as per the model:

$$\eta_{it} = \beta\epsilon_{jt} + \gamma\epsilon_{jt} \cdot PSL_{st} + \delta PSL_{st} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \tag{4}$$

Given our focus on the impact of EWPs on insurance provision, we are interested in the effect of the PSL adoption on the propagation of industry sales shocks to employment growth (and not on the direct impact of the shock on employment growth). Thus, we focus predominantly on the interaction coefficient (γ) between the sales shock and the passage of the PSL laws. Considering that the enactment of PSL laws likelly spilled over to EWPs, we then have a plausible prediction regarding the direction of the interaction effect: the passage of PSL should, similarly to the effect of the EWPs, result in a weaker pass-through of the industry sales shocks to employment growth, which thus materializes in a negative interaction coefficient. [3] Table 4 shows the results.

[3] Before proceding to the main test of interest, we have a go in validating the argument that the passage of PSL spilled over to a wider implementation of EWPs by firms. We estimate a simple model (not reported for brevity) between firms' Workforce ratings and the PSL adoption dummy, controlling for the same covariates affecting employment growth, firm, and year fixed effects:

$$Workforce_{it} = \beta PSL_{st} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it}$$

We find a significantly positive effect of the PSL enactment on firms' Workforce ratings (β = 0.032, t-stat = 2.76, p-value=0.008), corroborating the view that the passage of PSL laws can tease-out exogenous variation in firms' EWPs.

[Insert Table 4 about here]

The findings reported in column (1) show the TWFE (two-way FEs) DiD estimation. We continue to observe a significantly positive response of employment to sales shocks. While the PSL dummy shows no significant impact on employment growth on its direct (baseline) effect, we find a significantly negative interaction coefficient between the sales shocks and the PSL dummy ($\gamma =$ -0.041). [4] We obtain equally robust results (not reported for brevity) when testing the model with the date in which PSL laws became effective, observing again a significantly negative interaction between the sales shocks and the PSL effective implementation ($\gamma =$ -0.05, t-stat= -3.17). Thus, the enactment of paid sick laws has weakened the propagation of sales shocks to fluctuations in employment, an effect going in the same direction as in our baseline results obtained with EWPs.

We conduct a number of sensitivity checks. First, in column (2) we check for the parallel trends condition. We follow Curti *et al.* (2022) and include the variable PRE_PSL, measured as a dummy =1 in each of the 2 years preceding PSL enactment, and =0 otherwise. This variable allows testing for the presence of significant trends in employment growth before the passage of the PSL laws. We find an insignificant coefficient, which corroborates the parallel trends assumption.

Next, in column (3) we re-estimate our models applying propensity score matching. The descriptive statistics reported in Table 2 suggest that the firms which engage more strongly with workforce policies tend to have different observable characteristics when compared to those with weaker engagement. To mitigate the impact of such differences in the treatment effect, we match (based on the covariates - size, growth, profitability, leverage, and tangibility) firms in ever-treated states with comparable firms in never-treated states. We continue to observe a significantly negative interaction between the sales shocks and the dummy capturing the enactment of PSL laws.

While our estimation of the DiD model via OLS is aligned with the extant literature, recent evidence has detected potential problems in the consistency of the coefficients fitted via TWFE. Specifically, with treatment by different groups staggered over time and with the average treatment

[4] Because we employ firm and year fixed effects, the variable designating the baseline differences in employment growth between ever treated states and never treated states is wiped out from the estimation. We also tested the inclusion of an interaction between the ever treated dummy and the industry sales shocks, which captures secular differences in the effect of sales shocks on employment growth between ever-treated and never treated states. This interaction resulted insignificant, which suggests that before the PSL enactment there were no significant differences in the propagation of sales shocks to employment between ever treated and never treated states.

effects being heterogeneous over the groups and time, the coefficients estimated via standard DiD may not return a consistent estimate of the treatment effect. Similarly to Gao & Huang (2022), we adopt the solution proposed by Gardner (2022) and estimate a Two Stage DiD (2S DiD) model, which is robust to treatment effect heterogeneity when adoption of the treatment is staggered. [5]

The findings from the 2S DiD model are reported in column (4). We find a significantly positive responsiveness of employment to sales shocks, and a significantly negative interaction between the sales shock and the adoption of PSL laws. In terms of the size of the interaction effect, we find a non-negligible difference in the effect estimatated via 2SDiD (which is robust to heterogeneous treatment effects) compared to the OLS TWFE (γ_{TWFE} =-0.041 vis-a-vis γ_{2SDiD} = -0.061). These findings altogether demonstrate that our findings remain robust to tests based on a regulatory shock that elicits plausibly exogenous variation in EWPs, thus mitigating endogeneity concerns.

3.2.2 Evidence from Negative Labor-related ESG Incidents

We next explore labor-related negative ESG incidents. Incidents are real-world occurrences (as opposed to self-reported initiatives or ratings) that can effectively tarnish firms' reputations. Furthermore, since incidents tend to be fortuitous in nature, they are less likely to be endogenously determined by firm characteristics, and can be a source of external perturbation to firms' EWPs.

Following the literature (e.g., Bansal *et al.* (2022); Gantchev *et al.* (2022)), we obtain ESG incidents data from the RepRisk database. We focus on incidents that relate directly to firms' employee welfare initiatives. First, we gather data on incidents that are categorized by RepRisk as violating the Labor Principles set forth in the UNGC charter (United Nations Global Compact)[6]. There are four main labor-related principles that firms should observe: uphold the freedom of association and recognise the right to collective bargaining, uphold the elimination of forced or compulsory labor, uphold the effective abolition of child labor, and uphold the elimination of discrimination in respect of employment and occupation. RepRisk identifies corporate incidents

[5] The procedure and implementation goes as follows (for more details, see Gardner (2022) and Butts & Gardner (2021)): in the first stage, we regress the outcome variable (employment growth) on group (firm) and period (year) fixed effects, plus the covariates (size, growth, profitability, leverage, and tangibility) for the sub-sample of untreated observations. In the second stage, the fitted effects of the group, period, and covariates are subtracted from the observed outcome variable, with the adjusted outcome variable regressed against the treatment status. This procedure returns a consistent estimation of the treatment effect on the treated group across groups and periods even if such effects are heterogeneous. To estimate the impact of the treatment on the propagation of sales shocks, we expand the set of second-stage variables as to include an interaction between the treatment variable (PSL) and the industry sales shocks.

[6] https://www.unglobalcompact.org/library/261

potentially violating these principles. Second, we explore the occurrence of negative labor incidents that refer explicitly to Poor Employment Conditions, thus posing direct risk to the employees.

To mitigate the possible endogenous determination of labor incidents and firms' employee welfare policies (that is, the proclivity of firms directly exposed to incidents to react by engaging more with ESG initiatives to cover up), we calculate shocks (increases) in the number of labor-related incidents occurring at the industry level (SIC 3-digit, excluding the focal firms). We identify 4,446 labor-related incident violating the UNGC principles, and 5,115 incidents related to poor employment conditions. We spot a larger number of incidents in manufacturing industries such as Oil & Gas, Chemicals, Food, Electrical, and Industrial Machinery, in the Transporation Equipment industry, and in consumer-facing industries such as Supermarkets, Food Stores, and Apparel Retail.

Our expectation regarding focal firms' reaction to negative labor incidents occurring within their industries is that firms should perceive such incidents as a signal of an expected increase in scrutiny over employee welfare practices, thus being incentivized to engage in better policies. To empirically establish the relevance of these shocks to firms' EWPs, we begin by regressing firms' Workforce ratings against the industry-wide shocks to the number of recorded labor-related incidents. By doing so, we can tease-out whether the shocks effectively send signals to firms' labor-related social engagement. Second, we introduce interactions between the industry sales shocks and the shocks to labor-related incidents. If labor incidents involving peer firms nudge focal firms to improve their employee welfare engagement, then we should observe a similar direction of the interaction as in our base models: industry-wide labor-related incidents mitigating the pass-through of shocks.

$$\ln Workforce_{it} = \delta \Delta Incidents_{jt-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \tag{5}$$

$$\eta_{it} = \beta \epsilon_{jt} + \gamma \epsilon_{jt} \cdot \Delta Incidents_{jt-1} + \delta \Delta Incidents_{jt-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \tag{6}$$

Table 5 shows the results. In columns (1) and (2), we find that industry shocks to the number of incidents, equally measured as violations of the UNGC Labor-related Principles and relating to Poor Employment Conditions, are associated with focal firms improving their Workforce engagement, as reflected in higher ratings. Therefore, firms perceive the trouble afflicting their industry peers as signals that they should worry more about labor-related issues themselves too.

[Insert Table 5 about here]

In columns (3) and (4), we introduce the interactions of the industry sales shocks with the shocks to labor-related incidents. We find a significantly negative interaction of the sales shocks with both the growth rate of incidents violating the UNGC Labor Principles and of incidents relating to Poor Employment Conditions. Hence, such industry-wide negative labor incidents seem to nudge firms to improve workforce policies, thus mitigating the pass-through of sales shocks to employment.

3.2.3 Instrumental Variables

To further mitigate endogeneity concerns, we estimate instrumental variables models. Following the view that the social environment where firms operate permeates their social responsibility practices (e.g., see Curti *et al.* (2022)), we employ two instruments reflecting the strength of the social capital in firms' states as plausibly exogenous perturbations to firms' workforce policies. [7]

Our first instrumental variable is an index reflecting the regulatory strictness of states' LGBTQ Hate Crimes Legislation. The index is developed by MAP (Movement Advancement Project)[8], with the data made available in the US State Sustainable Development Report 2021. [9] The index runs from 1 to 4, with higher scores reflecting more stringent penalties for hate crimes against LGBTQ communities. For instance, we see higher scores in more liberal states (such as in California and Illinois), and lower scores in more conservative states (such as in Florida and Alabama).

The logic that we follow is that more stringent policies criminalizing aggression against LGBTQ minorities signal stronger social capital, thus being positively associated with the strength of firms' workforce policies. For instance, LGBTQ public and corporate policies can affect investors' perception of firm risk (Do *et al.*, 2022), which confers plausibility to LGBTQ legislation spilling over to corporate policies. [10] Hence, we expect that firms from states enforcing more stringent

[7] For instance, employing a state-level Gender Equality Index as instrument, Curti *et al.* (2022) show that social norms promoting gender equality within firms' states are positively associated to firms' workforce policies.

[8] `https://www.lgbtmap.org/equality-maps/hate_crime_laws`.

[9] `https://us-states.sdgindex.org/`.

[10] For example, we find that the LGBTQ Hate Crimes Legislation index has a significantly positive correlation of about 0.60 with the GEI (Gender Equality) index used by Curti *et al.* (2022) to instrument for firms' Workforce.

criminal legislation against LGBTQ aggression to have stronger Workforce policies. Since it is unlikely that firms can, individually, affect their states' constitutional choices, we take it as plausible that states' hate crime legislation evolves exogenously to employment decisions of individual firms.

Our second instrument is the number of fatal victims resulting from Workplace Shootings. We obtain the data from The Violence Project. [11] The Mass Shooter Database provides detailed information on all mass shooting events from 1966 to the present date. The database provides information on the location and the venue where the episodes took place, the number of casualties and fatal victims, and on the identification and background of the perpetrators, their motivations, and the guns utilized. Hence, we are able to identify the number of mass shooting events per year and per state, the number of fatal victims, and whether the shooting took place about a workplace.

Workplace shootings correspond to about 30% of all 187 mass shooting events recorded in the database. We focus on the number of fatal victims to elicit a more abrupt response from the public and firms given the social commotion and media exposure that often follows from such episodes. [12] The logic behind the instrument's relevance is that workplace shootings signal deterioration in the states' social capital, thus being negatively associated with the strength of firms' Workforce policies. Thus, we expect firms from states facing surges in the number of fatal victims resulting from workplace shootings to have weaker Workforce policies. Given the death toll from mass shootings is fortuitous and hard to predict, it seems reasonable to assume that such violent episodes occur plausibly exogenously to the labor investment decisions of individual firms.

Both instruments condition firms' engagement with employee policies, thus allegedly satisfying the relevance condition of correlating with the variable Workforce. Arguably, the variation we capture in the variable Workforce is driven by societal forces pressuring firms from the outside. Hence, we consider that firms take these shocks to their local social environment as given, with such shocks occurring exogenously to the decisions of individual firms. [13] These arguments vouch in favor of a plausible exogeneity of the instruments. We estimate the following GMM model:

[11] https://www.theviolenceproject.org/.

[12] This approach also deals with the possible issue that mass shootings may be more recurrent, and thus predictable, in states with certain characteristics - e.g., laxer gun laws.

[13] Moreover, models explaining employment decisions typically suggest that firms adjust labor investments based predominantly on the underlying economic fundamentals, with no explicit role played by the social capital of firms' surrounding communities.

$$Workforce_{it} = \beta' Z'_{st-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \quad (7)$$

$$\eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt} \cdot Work\hat{f}orce_{it} + \gamma Work\hat{f}orce_{it} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \quad (8)$$

In the first stage, we regress Workforce against the two state instruments. In the second stage, we regress employment growth against Workforce and its interaction with the industry sales shock (both instrumented). Thus, there are two variables being instrumented (Workforce and its interaction with the sales shock) and four instruments (each of the two state-instruments and their interactions with the sales shock). We estimate the instrumental variables models with firm fixed effects, so we control for firm unobserved effects. Moreover, by absorbing state unobserved heterogeneity (encapsulated by the firm fixed effect), we are able to control for time-invariant characteristics of the states that could impact their likelihood of having more or less workplace shootings (e.g., poorer labor environment or gun culture) as well as more progressive legislation toward minorities (e.g., social norms within communities). We also control for the same set of lagged covariates as in our base model (growth, size, profitability, leverage, and tangibility).

[Insert Table 6 about here]

Table 6 shows first and second stage results. Increases in both state instruments can significantly predict within-firm variation in the variable Workforce. The variable LGTBQ Hate Crimes Legislation has a significantly positive effect on Workforce ratings, whereas the variable Workplace Shootings has a significantly negative effect on Workforce ratings, both in line with our expectations. We test for the relevance and strength of the instruments with the Kleibergen-Paap under and weak-identification tests. We obtain large test statististcs for both the under (LM= 9.515) and the weak (F= 13.806) identification tests, thus suggesting the instruments are relevant and strong. We test for the suitability of the instruments with Hansen's J test. We accept the null hypothesis (chi2= 1.613), suggesting the instruments are valid. Second stage results indicate a positive sensitivity of employment growth to the sales shock, and a significantly negative interaction between Workforce (as instrumented by the state-level variables) and the industry sales shocks. Thus, we once again observe empirical evidence that is consistent with a mitigation effect of employee welfare policies on the propagation of industry sales shocks to firm employment growth.

3.3 Heterogeneity in Workers' Demand for Insurance

3.3.1 State Unemployment Insurance and EWPs: Substitutes or Complements?

Next, we test whether the effect of employee welfare policies on the propagation of sales shocks to employment is affected by the local public social safety network. We introduce three-way interactions between the industry sales shocks, the variable Workforce, and state unemployment insurance benefits. Following the literature (e.g., Agrawal & Matsa (2013)), we proxy for the generosity of the benefits provided by local governments with the natural log of the states' maximum unemployment insurance benefits lagged by one period ($\ln MaxBen_{st-1}$). Our prior in this test is that increases in the generosity of unemployment insurance by state governments will affect workers' demand for insurance from their firms. When more generously insured by the state in the event of job loss, workers will demand less insurance from firms, thus rendering the insuring role of EWPs marginally less important. Since the generosity of unemployment insurance is a policy rate set by state governments, changes in the insurance payments remain plausibly exogenous to firms' EWPs. Since individual firms unlikely determine policy, it is plausible to consider they take policy changes as given when making labor investment choices. We estimate the regression model:

$$\begin{aligned} \eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt} \cdot Workforce_{it} + \phi\epsilon_{jt} \cdot Workforce_{it} \cdot \ln MaxBen_{st-1} \\ +\chi\epsilon_{jt} \cdot \ln MaxBen_{st-1} + \sigma Workforce_{it} \cdot \ln MaxBen_{st-1} \\ +\gamma Workforce_{it} + \kappa \ln MaxBen_{st-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \end{aligned} \tag{9}$$

The findings are reported in Table 7. The results in column (1) show that, while the sales shock remains significantly positive and the interaction between the sales shock and Workforce sustains a significantly negative coefficient once again, the triple interaction between the sales shock, Workforce, and (LN) Maxben is statistically significant and positive. Such findings suggest that the mitigating effect of EWPs on the pass-through of sales shocks to employment is weaker (stronger) in states where public unemployment insurance is more (less) generous.

[Insert Table 7 about here]

Importantly, our findings remain robust to the inclusion of the unemployment rate as a control variable, which removes confounding effects from fluctuations in the regional labor market (which results insignificant), and to the inclusion of state-specific trends (in column 2) which effectively orthogonalizes the effect of unemployment insurance from regional time-varying economic confounds. [14] In column (3) we run a sensitivity check by separating between firms with High and Low (above/below the median) Ratings in the Workforce variable, observing robust findings once again. In all, the findings we obtain when considering the role of the local social safety network point toward a substitution effect between corporate employee welfare policies and government unemploment insurance. Our results indicate that EWPs seem more relevant in insulating workers against fluctuations in employment when insurance provided by the state is less pronounced.

3.3.2 Evidence from Right-to-work Laws

In this section we explore regulatory heterogeneity across U.S. states. Specifically, we study whether the insulating effect of employee welfare policies is affected by the strength of collective barganing mechanisms. To this end, we take advantage of heterogeneity in the adoption of Right-to-work (RTW) laws, which are legal provisions that protect workers' rights in the event they choose not to unionize (e.g., see Chava *et al.* (2020); Feigenbaum *et al.* (2018)). Although RTW laws may safeguard individual workers against the power of unions, it leaves workers collectively more exposed as the enactment of RTW laws effectively renders unions less powerful both financially and politically. The logic is that workers in states which have adopted RTW laws enjoy less protection from layoffs, since firms are less pressured by labor unions. In principle, firing costs for firms should be lower when the power of unions is weaker, with workers becoming more vulnerable as a result.

We see in the adoption of RTW laws an interesting laboratory to examine whether EWPs work best in insuring workers when they are more vulnerable. Our expectation is that workers will

[14] In the models accounting for state-specific trends, the coefficients of state variables are subsumed by the time-varying fixed effects (hence why they are appear as (.) in the table). Their baseline effects are wiped from the estimation, with the interactions with firm variables remaining.

demand more insurance from firms in states where they are less protected by collective bargaining schemes as granted by unions. Thus, the effect of EWPs on the propagation of sales shocks to employment should be stronger in states adopting RTW laws. We test three-way interactions between the industry sales shocks, Workforce as our measure of corporate EWPs, and a dummy separating RTW-compliant versus non-compliant states. We estimate the following equation:

$$\begin{aligned} \eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt} \cdot Workforce_{it} + \phi\epsilon_{jt} \cdot Workforce_{it} \cdot RTW_s \\ +\chi\epsilon_{jt} \cdot RTW_s + \sigma Workforce_{it} \cdot RTW_s \\ +\gamma Workforce_{it} + \kappa RTW_s + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \end{aligned} \tag{10}$$

We observe substantial heterogeneity across states in the adoption of RTW laws. There's a relevant split in states adopting RTW laws (e.g., Arizona, Florida, and Texas) vis-a-vis non-adopting states (e.g., California, Massachusetts, and New York). Because the overwhelming majority of states adopting RTW laws did so in the years preceding the initiation of the coverage of our sampling period (2002), this time we are unable to implement a staggered approach. [15] At any rate, firms and workers plausibly take the regulatory environment in the labor market surrounding them as given, such that we are still able to tease-out an interesting test in which a relevant policy choice affects workers' vulnerability and thus their demand for insurance from firms.

[Insert Table 8 about here]

The findings are reported in Table 8. We find that the interaction between the industry sales shock and the RTW is significantly positive, which indicates that the pass-through of sales shocks to employment is significantly stronger in states adopting RTW laws. This could suggest that the propagation of shocks to employment is more pronounced in states where collective bargaining is weaker and thus workers, taken atomistically, are more vulnerable. Importantly, we find a significantly negative triple interaction between the sales shocks, the variable Workforce, and the

[15] There are a few exceptions: Five states (Indiana, Kentucky, Michigan, West Virginia, and Wisconsin) adopted RTW laws within our sampling period. However, these states do not contribute enough observations to our sample as to enable us conducting a reliable test. So, we exclude firms from these states from our main models to avoid lack of comparability - that is, we compare secular regulatory differences across states. At any rate, the results remain robust even if keeping such states in the analysis.

RTW laws dummy. Thus, employee welfare policies seem to be associated with a weaker pass-through of sales shocks to employment in RTW-compliant states. Such results remain robust to the inclusion of state x year fixed effects, which absorbs time-varying unobserved differences between states (e.g., regional economic cycles). We also observe robust findings when separating between High and Low Workforce firms (based on the median). These findings again suggest that employee welfare policies insulate workers from employment fluctuations when they mostly need protection, given the higher vulnerability of workers in states where labor unions wield less power.

3.3.3 The Pass-through of Innovations to Production Functions

Pertinently, another candidate channel that we explore is technology and the extent to which it affects employment dynamics. A growing literature debates the role of innovation in affecting employment and the contribution of labor to the economy. Several works suggest that innovation and the resulting industrial automation process trigger an intricated effect whereby firms may substitute labor with capital (e.g., Acemoglu & Restrepo (2019, 2018); Berg *et al.* (2018)). Our expectation here is that if EWPs are linked to more insurance provision, then this effect should also impact the strength of the propagation of labor-related shocks other than demand-based (such as sales). We anticipate that workers will demand more insurance provision from firms when their job posts are more likely to be made obsolent by technological advances. This would translate as EWPs mitigating the propagation of technological shocks to the substitution of labor by capital.

We calculate measures of innovations at both state and industry levels. At the regional level, we employ the growth rate of patents per capita (with data from the FRED). At the industry-level, we rely on the Patent Tobin's Q developed by Woeppel (2022), which captures the replacement cost of patent capital. We calculate the industry-wide (SIC 3-digit) average yearly Patent Q (excluding the focal firm). We then regress the natural log of firms' capital-labor ratios (PPE/Employees) against such invention shocks and their interactions with the variable Workforce.

The findings are shown in Table 9. The results reported in columns (1) and (2) refer to the state-level invention shocks. We find that increases in the growth rate of patents are associated with significant increases in capital-labor ratios. That is, when hit by invention shocks, firms seem to employ marginally more capital than labor. The interaction between the growth rate of patents and the variable Workforce is significantly negative, thus indicating that the pass-through of the invention shocks to production functions is weaker in firms with stronger employee welfare policies. The findings in column (2) include state x year fixed effects, which control for time-varying regional economic confounds possibly correlating with employment and patents, with robust results.

[Insert Table 9 about here]

We then test with the industry-level innovation shocks, finding comparable results. The sensitivity of capital-labor ratios to the industry Patent Q is significantly positive, suggesting that firms employ marginally more capital than labor when industries experience positive shocks to the market value of patent capital. The interaction with Workforce is significantly negative, thus the propagation of the shock is weaker in employee-oriented firms. Overall, these additional findings indicate that employee welfare policies may insulate workers against the substitution of labor by capital in events when firms are exposed to regional and industry-wide innovation shocks.

3.3.4 Firm Characteristics

We now examine whether the role played by employee welfare policies in mitigating the propagation of sales shocks to employment can be heterogeneous across firms. We look into several important sources of cross-sectional variability in the characteristics of firms that could be linked with workers demanding more insurance from firms: growth, competition, and cost structure. As per the model below, we estimate triple interactions between industry sales shocks, the variable Workforce, and the aforementioned firm characteristics (collected in vector H'_{it}):

$$\begin{aligned}\eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt}\cdot Workforce_{it} + \phi'\epsilon_{jt}\cdot Workforce_{it}\cdot H'_{it-1} \\ +\chi'\epsilon_{jt}\cdot H'_{it-1} + \sigma' Workforce_{it}\cdot H'_{it-1} \\ +\gamma Workforce_{it} + \kappa' H'_{it-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it}\end{aligned} \tag{11}$$

The results are presented in Table 10. We begin by estimating the triple interaction with Tobin's Q as our proxy for growth opportunities. Our prior here is that workers may perceive that their jobs are more at risk when the growth opportunities available to their firms are more limited, thus demanding more insurance. While the dual interaction betwen the industry sales shock and the variable Workforce remains significant and negative, we observe a positive triple interaction with Tobin's Q. That is, the mitigating effect of employee welfare policies on the pass-through of sales shocks to employment is less (more) pronounced in firms with higher (lower) Tobin's Q ratios. In other words, the role of EWPs in insulating workers against fluctuations in employment seems more important in low-growth firms, when such protection is more demanded by workers given the risk of facing redundancy is likely higher when firms' growth prospects are limited.

[Insert Table 10 about here]

Next, we study the role of competition. A growing literature emphasizes the impact of market structures on labor market outcomes such as productivity, employment, and earnings (e.g., Berger *et al.* (2022); Azar *et al.* (2022)). The conjecture we examine is whether the effect of EWPs changes as a function of the intensity of product market competition. From the perspective of workers, they may demand more insurance against fluctuations in employment from firms in more competitive industries given the instability in product markets is likely transmitted to labor investment decisions. We employ two measures: the TNICHHI measure of industry market share concentration developed by Hoberg & Phillips (2016) (which is negatively associated with competition), and the Prodmktfluid (Fluidity) measure of competitive threats proposed by Hoberg *et al.* (2014) (which is positively associated with competition). We find a positive triple interaction between the industry sales shock, the variable Workforce, and TNICHHI, whereas we record a negative triple interaction with Prodmktfluid. These findings suggest that EWPs are more important in buffering the impact of sales shocks to employment fluctuations in firms that operate in more competitive industries.

We further consider a potential role exerted by firms' cost structure. From the perspective of the workers, it may be more important to rely on insurance against job loss when their firms have a costlier operational structure, since cost cutting via layoffs may be more likely in the event of adverse economic cycles in firms that shoulder a heavier cost structure. We introduce three-way interactions with the variable SG&A/Sales as a proxy for the cost burden. We find a significantly negative three-way interaction, which seems to indicate that employee-oriented firms insulate workers from sales shocks more strongly when they bear heavier costs. Hence, once again we find evidence that EWPs offer more protection when workers demand insurance the most.

3.4 What Happens when Wages Increase?

A potentially important feature of the the implicit risk-sharing agreement between workers and firms is that it tacitly stipulates that the cost of insurance to workers is to earn lower wages. That is, for firms to insure workers, they require a marginal benefit in the form of paying lower wages in return for the protection against employment fluctuations they offer. In principle, if firms are more likely to supply insurance to workers when their wage bill is lower, we should observe a weaker mitigation effect of EWPs on employment fluctuations when wages increase. We have a go in testing this prediction empirically, employing two state-level variables.

First, we use the states' Minimum Wage. Minimum Wages are policy rates set by governments, thus firms likely take these as given when setting wages and, importantly, their own preferred level of insurance provision. As robustness, we also calculate state-level shocks to earnings in manufacturing [16]. We augment our baseline empirical model, introducing three-way interactions between the industry sales shock, the variable Workforce, and such variables. We estimate:

$$\begin{aligned}\eta_{it} = \beta\epsilon_{jt} + \delta\epsilon_{jt}\cdot Workforce_{it} + \phi\epsilon_{jt}\cdot Workforce_{it}\cdot Wage_{st-1} \\ +\chi\epsilon_{jt}\cdot Wage_{st-1} + \sigma Workforce_{it}\cdot Wage_{st-1} \\ +\gamma Workforce_{it} + \kappa Wage_{st-1} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it}\end{aligned} \tag{12}$$

Table 11 shows the results. The findings in columns (1) and (2) show that, while the interaction between the industry sales shocks and the variable Workforce remains significantly negative, the triple interaction with the minimum wage is significantly positive. These results are robust to controlling for states' unemployment rate (which could impact minimum wage policies and their effect on firm employment), and to the inclusion of state x year fixed effects (column 2), which

[16] Lacking comprehensive firm-level wage data, we use the minimum wage and the growth rate of earnings within firms' states as a surrogate, relying on the plausible expectation that the median firm adjusts, to some degree, wages upwards (downwards) in response to positive (negative) wage fluctuations in the regional labor market (logically, the strength of such pass-through may be heterogeneous in the cross-section).

orthogonalizes the effect of the minimum wages from time-varying unobserved state effects.

[Insert Table 11 about here]

The models (3) and (4) show sensitivity checks with the earnings growth. We again observe a significantly positive triple interaction. Hence, our findings indicate that when wages increase, the mitigation effect of employee welfare policies on the pass-through of sales shocks to employment fluctuations becomes weaker. Therefore, it seems that the risk-sharing agreement through which firms insure workers against fluctuations in employment works best when wages remain lower.

4 Robustness checks

4.1 On the Measurement of the Shocks

To ensure robustness against measurement issues pertaining to the economic shocks, we test with perturbations measured at several different dimensions. First, we follow Ellul *et al.* (2018) and compute firm-level sales shocks. The firm shocks are obtained by estimating a dynamic model via GMM (Generalized Method of Moments). First, we regress the growth rate of firm sales against its lagged value plus the economic fundamentals expected to predict sales growth (the same covariates in equation 3). Second, we save the residual of this regression, which captures the unexpected component of sales growth. We then re-estimate our main model with such firm-level sales shock interacted with the variable Workforce. Second, we look into the sensitivity of firm employment to shocks occuring in their surrounding labor market more directly. We calculate industry employment shocks as the growth rate of employees of firms in the same industry (excluding the focal firm itself). Third, we calculate state-level employment shocks with the growth rate of the inflow of manufacturing employment into the states (with the data sourced from the FRED).

[Insert Table 12 about here]

The results are reported in Table 12. Across all the three alternative shock measurements (at firm, industry, and state levels), we find a significantly positive sensitivity of firm employment growth to the shocks, and a significantly negative interaction with the variable Workforce. Thus, our findings remain robust to several alternative ways in which we measure the economic shocks.

4.2 Absorbing Confounding Effects from Competing ESG Dimensions

A notable feature of ESG ratings is that their pillars tend to exhibit positive correlation, despite allegedly capturing different dimensions of stakeholder governance. For instance, the correlation of the Social pillar (to which the variable Workforce belongs) with the Environmental and Governance pillars in our sample is about 0.70 and 0.40, respectively. Similarly, the correlation between the category Workforce with the remaining categories within the Social pillar (Community, Human Rights, and Product Responsibility) is also significant and stays at about 0.40-0.60.

The potential problem we envisage is that the variable Workforce may be capturing constructs other than those directly related to employee relations, given its correlation with the other pillars and categories. To mitigate this risk, we augment our main model with interactions between the industry sales shock and the remaining pillars and categories. This way, we are able to effectively orthogonalize the effect of the interaction between the sales shocks and the variable Workforce from any confounding effects coming from competing pillars and categories.

[Insert Table 13 about here]

The results reported in Table 13 show that, despite the inclusion of such additional interactions, we continue to observe a significantly negative interaction between the industry sales shock and the variable Workforce. Interestingly, none of the additional interactions show significance. Thus, while employee welfare policies affect the pass-through of sales shocks to employment, other initiatives that do not address employee relations directly (within and outside the S pillar) do not affect the propagation of such shocks, corroborating that our findings are not driven by confounding effects.

4.3 Alternative Employee Policies Ratings: KLD

We now re-estimate our models employing an alternative measure for employee welfare policies. We substitute the Workforce ratings from Refinitiv with a comparable metric sourced from KLD, which is a popular data source often used in the literature (e.g., see Bansal *et al.* (2022)). Differently than Refinitiv, the KLD ESG database does not measure firms' activism with ratings, but with binary variables capturing engagement with key ESG activities. KLD calculates variables capturing the number of strengths and concerns pertaining to key ESG categories. We, naturally, focus on the employment dimension (which covers issues such as Employee Involvement, Union Relations, Layoff policies, Health and Safety issues, Profit Sharing, etc.). We use three variables in the analyses: the total number of Employee-related Strengths, the total number of Employee-related Concerns, and the total number of Employee-related Net Strengths (i.e., Strengths minus Concerns).

We then estimate interactions between the industry sales shocks and these alternative proxies for firms' employee welfare policies. We estimate the models with a reduced number of observations because we are able to match a lower number of firms (368), and because the data from the KLD database is available up to 2013 only. The results are presented in Table 14.

[Insert Table 14 about here]

In column (1) we show the results from interacting the industry sales shocks with the number of Employee Strengths. While we find a significantly positive sensitivity of employment growth to the industry sales shock, the propagation effect of this shock to employment is significantly weaker in firms with a larger number of Employee Strengths. Conversely, in column (2) we find that the shocks are more strongly propagated in firms with a larger number of Employee Concerns. Lastly, in column (3) we estimate the interaction with the Net Employee Strenghts (that is, the strenghts minus the concerns), finding that for firms in which the strenghts outweigh the concerns, the pass-through of industry shocks to fluctuations in employment is significantly weaker. Therefore, we observe results comparable to our baseline findings obtained with the Refinitiv ratings when employing alternative proxies for the employee policies ratings sourced from the KLD database.

4.4 Dynamic GMM Estimation

A remaining concern is that the impact of employee welfare initiatives on insurance provision may be affected by the persistency of employment decisions. For instance, firms in greater need of attracting workers may engage in EWPs more actively to boost their hiring ability, such that past employment growth may be an omitted variable in our base models. To mitigate this issue, we estimate dynamic models via GMM, in which we are able to control for past employment growth levels. We estimate the model below, [17] with the results reported in Table 15:

$$\eta_{it} = \sigma\eta_{it-1} + \beta\epsilon_{jt} + \delta\epsilon_{jt} \cdot Workforce_{it} + \gamma Workforce_{it} + \lambda' X'_{it-1} + \alpha_i + \tau + u_{it} \tag{13}$$

[Insert Table 15 about here]

We find a significantly positive effect of lagged employment growth on current employment growth, thus corroborating the dynamic structure of the model. We test several specifications, lagging employment by one, two, and three periods. Yet, such additional models reject a longer persistence in employment growth, as further lagged values of employment growth are insignificant. We continue to observe a positive sensitivity of firm employment to industry sales growth that becomes significantly weaker in firms with stronger employee welfare policies. Testing the suitability of the model, we accept the null hypothesis of the Sargan's over-identifying restrictions test, thus the instrumental variables are valid. We also accept the null hypothesis of the Arellano-Bond test, which indicates there is no sign of second-order serial correlation in the error term.

5 Conclusions

We study the effects of employee welfare policies on the propagation of sales shocks to employment decisions of U.S. firms. Our empirical findings show that in firms with stronger employee welfare policies, the pass-through of shocks to employment growth is significantly weaker. Such findings are consistent with the view that employee welfare policies can insure workers against fluctuations in employment. Our analysis also uncovers heterogeneous effects across states and firms.

[17] We explore the plausible orthogonality condition between the first-differences of candidate endogenous variables and their lagged levels (Greene, 2012), thus lagged employment growth and the variables Workforce, industry sales growth, and their interaction are specified as endogenous covariates and instrumented by GMM-style instruments (lagged levels), whilst the remaining variables are instrumented by standard first-differences. We use the lagged levels as instruments to create temporal distance between employment, the sales shocks, and EWP to deal with the issue of persistency in employment growth, but excise caution regarding causal inference here since GMM instruments are *internal* to the system, thus whether the variation they tease out is effectively exogenous is not to be taken for granted.

Our findings further suggest that employee welfare policies gain relevance in insulating workers against fluctuations in employment in instances in which workers are likely to demand insurance the most. We show that the mitigating effect of such employee-oriented policies is significantly weaker in U.S. states where unemployment insurance benefits are more generous. Therefore, the insurances provided by corporate and public policies seem to substitute one another. The impact of EWPs is also more pronounced in states where weaker collective bargaining power renders workers more vulnerable. The insurance effect of EWPs is stronger when competition is more intense, when firms grow more slowly, when firms have a more burdensome cost structure.

Moreover, the impact of employee policies spill-over to production functions too. While innovations stimulate firms to employ more capital and less labor, such technological pass-through is weaker in employee-oriented firms. Thus, employee welfare policies can be effective in mitigating job losses associated with technological progress. From the side of labor costs, the mitigation effect of employee policies turns weaker when firms are hit by increases in wages, which suggests that employee-oriented firms are more likely to offer workers insurance when wages remain lower.

Our study has repercussions for the academic community, and to corporate and public policies. The new findings we uncover are important, especially in light of the increasing pressure over firms to shoulder more responsibility toward the welfare of their employees. Many scholars, policy-makers, and business commentators have expressed concerns regarding firms' commitment (ability) to convert ESG initiatives into tangible outcomes that effectively benefit stakeholders. For instance, O'Leary & Valdmanis (2021) brand the efforts by companies to commit to ESG principles as commendable, but highlight that such practices have produced scarce results in terms of effectively promoting responsible investments. We provide evidence that employee welfare policies can produce real effects that benefit firms by shielding their labor investments from shocks, while bearing fruits for the wider society by insuring workers from fluctuations in employment.

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Table 1: **Summary statistics**

Variable	Mean	SD	25pc	50pc	75pc	Count
Employment Growth	0.055	0.205	-0.017	0.032	0.105	11297
Industry Sales Shock	0.030	0.157	-0.018	0.041	0.094	11297
Workforce Ratings	0.442	0.268	0.220	0.406	0.648	11297
Tobin's Q	2.123	2.362	1.014	1.537	2.479	11297
(LN) Market Capitalization	8.252	1.577	7.262	8.259	9.305	11297
ROA	0.014	0.267	0.013	0.053	0.094	11297
Net PPE/Assets	0.251	0.225	0.079	0.175	0.361	11297
Leverage	0.339	0.760	0.035	0.151	0.357	11297
TNIC3HHI	0.292	0.254	0.108	0.200	0.389	10975
Prodmktfluid	6.312	3.490	3.764	5.507	8.014	10943
SGA/Sales	0.349	1.412	0.113	0.211	0.340	10388
(LN) Capital-labor	4.971	1.358	4.169	4.789	5.611	11256
Product Responsibility	0.390	0.293	0.169	0.342	0.642	11297
Human Rights	0.214	0.305	0.000	0.000	0.441	11297
Community	0.620	0.239	0.451	0.637	0.826	11297
Environmental Pillar	0.258	0.280	0.000	0.151	0.478	11297
Governance Pillar	0.480	0.220	0.303	0.479	0.657	11297
Firm Sales Shock	0.488	0.389	0.299	0.500	0.725	11027
Patent Tobin's Q	7.883	136.338	0.649	1.134	2.220	10946
Industry Employment Shock	0.007	0.147	-0.035	0.016	0.059	11282
MaxBen	460.487	136.389	378.000	450.000	507.000	9445
State Employment Shock	-0.003	0.031	-0.012	0.003	0.015	10975
State Patents Shock	0.020	0.053	-0.011	0.014	0.036	10795
State Minimum Wage	8.073	1.626	7.250	7.625	9.000	10,975
State Earnings Shock	0.560	0.657	0.1500	0.5200	0.9200	8437
RTW States (0/1)	0.376	0.484	0.000	0.000	1.000	11297
Employee-related Strengths	0.890	1.284	0	0	1	2964
Employee-related Concerns	0.651	0.841	0	0	1	2964
Net Employee-related Strengths	0.238	1.480	-1	0	1	2964
UNGC Labor Incidents Shocks	1.082	6.275	-1	0	2	9334
Poor Conditions Incidents Shocks	0.599	8.537	-1	0	2	9334
PSL Enactment Dummy	0.201	0.401	0	0	0	11,599
PSL Ever-Treated Dummy	0.347	0.476	0	0	1	11,599
State Workplace Shootings Victims	0.780	3.880	0	0	0	10,977
Δ State Workplace Shootings Victims	-0.073	5.927	0	0	0	10,921
State LGBTQ Hate Crimes index	3.136	0.814	2	3	4	10,937

Table 2: **Comparative Descriptive Statistics Based on Workforce Ratings**

This table shows comparative descriptive statistics based on firm ratings on the variable Workforce. For each variable, the table reports the mean for firms with Low Workforce Ratings (below the sample median), and for High Workforce Ratings (above the sample median), the difference in means across the two groups, the t-test, and the p-value of the test.

Variables	Low Workforce Ratings	High Workforce Ratings	Difference	t-statistic	p-value
Employment Growth	0.054	0.055	-0.000	-0.225	0.8217
Industry Sales Shock	0.027	0.033	-0.005	-1.898	0.057
Tobin's Q	2.148	2.099	0.048	1.080	0.281
(LN) Market Capitalization	7.558	8.906	-1.348	-50.348	0.000
ROA	-0.004	0.031	-0.035	-7.004	0.000
NPPE/Assets	0.246	0.254	-0.007	-1.754	0.079
Leverage	0.358	0.320	0.038	2.667	0.007

Table 3: The effect of employee welfare policies on the pass-through of industry sales shocks to employment

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and the interaction between Industry Sales Shocks and the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), plus the variable Workforce on its baseline effect. The vector of lagged control variables includes: (LN) Tobin's Q (growth opportunities), (LN) Market Capitalization (size), ROA (profitability), (LN) NPPE/Assets (tangibility), and (LN) Leverage. All models include firm and year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)	(4)	(5)
Industry Sales Shock	0.101***	0.071***	0.041***		
	(0.030)	(0.023)	(0.016)		
Industry Sales Shock (t-1)				0.088***	
				(0.029)	
Negative Sales Shock					-0.027***
					(0.010)
Industry Sales Shock x Workforce	-0.136***				
	(0.052)				
Industry Sales Shock x Workforce (High/Low)		-0.051**			
		(0.026)			
Industry Sales Shock x Δ Workforce			-0.299***		
			(0.094)		
Industry Sales Shock (t-1) x Workforce (t-1)				-0.119**	
				(0.053)	
Negative Sales Shock x Workforce					0.042**
					(0.017)
Workforce	0.202***				0.189***
	(0.016)				(0.015)
Workforce (High/Low)		0.054***			
		(0.006)			
Δ Workforce			0.204***		
			(0.016)		
Workforce (t-1)				0.011	
				(0.014)	
(LN) Tobin's Q (t-1)	0.159***	0.158***	0.148***	0.154***	0.159***
	(0.011)	(0.011)	(0.010)	(0.010)	(0.010)
(LN) Market Capitalization (t-1)	-0.096***	-0.092***	-0.079***	-0.086***	-0.096***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
ROA (t-1)	0.094***	0.096***	0.075***	0.074***	0.094***
	(0.017)	(0.017)	(0.020)	(0.020)	(0.017)
(LN) NPPE/Assets (t-1)	-0.078***	-0.078***	-0.060***	-0.065***	-0.077***
	(0.011)	(0.011)	(0.012)	(0.013)	(0.010)
(LN) Leverage (t-1)	-0.170***	-0.173***	-0.164***	-0.176***	-0.171***
	(0.017)	(0.017)	(0.017)	(0.018)	(0.017)
Constant	0.572***	0.600***	0.569***	0.611***	0.583***
	(0.064)	(0.063)	(0.064)	(0.066)	(0.063)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	11,297	11,297	9,791	9,724	11,297
F	76.449***	67.550***	72.687***	48.340***	74.880***
Adjusted R-square	0.286	0.275	0.280	0.266	0.285

Figure 1: Employment Growth Around Paid Sick Laws

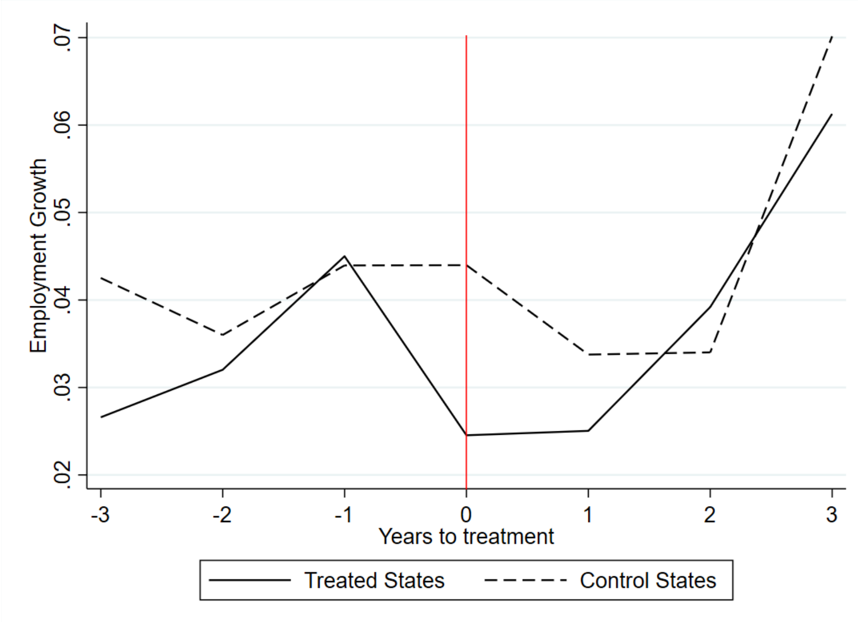

Table 4: The passage of Paid Sick Leave (PSL) laws as a shock to EWPs

We explore the staggared passage of Paid Sick Leave (PSL) laws as an exogenous shock to EWPs. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and the interaction between Industry Sales Shocks and the variable PSL, measured as a dummy =1 on and after the year in which states adopted the PSL laws, and =0 before that and for states not adopting the PSL laws, plus the variable PSL on its baseline effect. Pre PSL Enactment is a dummy =1 for the two years preceding the PSL enactment, and =0 otherwise. The vector of firm controls includes the same variables as in Table 3. Columns (1) and (2) show OLS estimates, column (3) shows OLS estimates based on propensity score matched samples (PSM), and column (4) reports the results obtained from the Two Stage Difference-in-Differences estimator (2S DiD). State clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)	(4)
Industry Sales Shock	0.044**	0.045**	0.052**	0.046***
	(0.018)	(0.018)	(0.021)	(0.013)
Industry Sales Shock x PSL Enactment	-0.041**	-0.042**	-0.052***	-0.061***
	(0.017)	(0.017)	(0.019)	(0.018)
PSL Enactment	0.006	0.009	-0.003	0.002
	(0.009)	(0.008)	(0.013)	(0.005)
Pre PSL Enactment		-0.004		
		(0.009)		
Estimation	OLS	OLS	OLS (PSM)	2S DiD
Firm Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	10977	10977	4708	10349

Table 5: Evidence from Labor-related Incidents

This table reports OLS regression results. Columns (1) and (2) show estimates in which we regress Workforce (ratings) against industry-wide (SIC 3-digit) lagged shocks to the number of labor-related incidents: (1) UNGC Labor-related Incidents, and (2) Poor Employment Conditions Incidents. Columns (3) and (4) show results in which we regress Employment Growth against the Industry Sales Shocks interacted with the industry-wide shocks to the number of labor-related incidents. All models include firm and year fixed effects. The vector of firm controls includes the same variables as in Table 3. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

	(1)	(2)	(3)	(4)
Dependent Variable	$Workforce_{it}$	$Workforce_{it}$	Employment Growth	Employment Growth
UNGC Labor Incidents Shocks [t-1]	0.002**		-0.000	
	(0.001)		(0.000)	
Poor Conditions Incidents Shocks [t-1]		0.001**		-0.000
		(0.000)		(0.000)
Industry Sales Shock			0.029*	0.031**
			(0.015)	(0.015)
Industry Sales Shock x UNGC [t-1]			-0.005**	
			(0.002)	
Industry Sales Shock x Poor Cond. [t-1]				-0.006**
				(0.003)
Firm Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	9,331	9,331	9,331	9,331
F	7.562***	7.566***	44.199***	44.479***
Adjusted R-square	0.759	0.759	0.274	0.274

Table 6: Instrumental Variables Estimation

This table reports GMM Instrumental Variables estimations. Column (1) shows the first-stage estimates, where we regress Workforce against two state-level instruments: the LGBTQ Hate Crimes index and the increase in the number of fatal victims from Workplace Shootings (both instruments are lagged by one period). Column (2) shows the second-stage estimates, where we regress Employment Growth against the variable Workforce and its interaction (both instrumented) with the Industry Sales Shocks. The vector of firm controls includes the same variables as in Table 3. State clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

First and Second Stage Estimates	(1)	(2)
Stage	First	Second
Dependent Variable	$Workforce_{it}$	Employment Growth
LGBTQ Hate Crimes index	0.0281***	
	(0.0104)	
Workplace Shootings	-0.0003***	
	(0.0001)	
Industry Sales Shock		0.4225***
		(0.1315)
Industry Sales Shocks x Workforce		-0.8739***
		(0.3171)
Workforce		0.4825
		(0.3321)
Kleibergen-Paap (LM chi2 stat)		9.515
Kleibergen-Paap (F Wald stat)		13.806
Hansen's J (chi2 stat)		1.613
Firm Controls	Yes	Yes
Firm FE	Yes	Yes
Year FE	Yes	Yes
N	10,879	10,879
F	32.096***	47.717***

Table 7: The Moderating Role of State Unemployment Insurance Benefits: Substitutes or Complements?

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and triple interactions between Industry Sales Shocks, the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), and (LN) Maxben (states' maximum unemployment insurance benefits). The vector of firm controls includes the same variables as in Table 3. In models (1) and (2) we control for Unemployment Growth. Model (1) includes firm and year fixed effects. Models (2) and (3) include firm and state x year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)
Industry Sales Shock	1.247*	1.333*	1.139**
	(0.705)	(0.695)	(0.507)
Industry Sales Shock x Workforce	-2.628**	-2.727**	
	(1.266)	(1.160)	
Industry Sales Shock x Workforce x (LN) MaxBen (t-1)	0.408**	0.423**	
	(0.207)	(0.189)	
Industry Sales Shock x Workforce (H/L)			-1.949***
			(0.552)
Industry Sales Shock x Workforce (H/L) x (LN) MaxBen (t-1)			0.310***
			(0.090)
Industry Sales Shock x (LN) MaxBen (t-1)	-0.189	-0.203*	-0.176**
	(0.115)	(0.113)	(0.082)
Workforce x (LN) MaxBen (t-1)	0.137**	0.146**	
	(0.056)	(0.066)	
Workforce (H/L) x (LN) MaxBen (t-1)			0.037
			(0.029)
Workforce	-0.608*	-0.659	
	(0.340)	(0.401)	
Workforce (H/L)			-0.168
			(0.177)
(LN) MaxBen (t-1)	-0.131**	(.)	(.)
	(0.059)	(.)	(.)
Unemployment Rate (t-1)	0.030	(.)	(.)
	(0.029)	(.)	(.)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	No	No
State x Year FE	No	Yes	Yes
N	10,555	10,525	10,525
F	43.115***	47.708***	40.795***
Adjusted R-square	0.290	0.281	0.269

Table 8: State Regulatory Heterogeneity: Evidence from Right-to-work Laws

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and triple interactions between Industry Sales Shocks, the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), and a dummy variable separating states which are compliant to RTW (Right-to-work) laws (=1) from non-compliant states (=0). The vector of firm controls includes the same variables as in Table 3. Models (1) and (2) include firm and year fixed effects. Model (3) includes firm and state x year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)
Industry Sales Shock	0.047	0.030	0.023
	(0.036)	(0.028)	(0.028)
Industry Sales Shock x RTW States	0.124**	0.097**	0.108**
	(0.062)	(0.046)	(0.048)
Industry Sales Shock x Workforce	-0.050		
	(0.065)		
Industry Sales Shock x Workforce x RTW States	-0.210*		
	(0.108)		
Industry Sales Shock x Workforce (H/L)		-0.004	-0.020
		(0.033)	(0.032)
Industry Sales Shock x Workforce (H/L) x RTW States		-0.121**	-0.118**
		(0.053)	(0.054)
Workforce x RTW States	0.017		
	(0.034)		
Workforce (H/L) x RTW States		-0.005	-0.014
		(0.013)	(0.015)
Workforce	0.196***		
	(0.018)		
Workforce (H/L)		0.055***	0.061***
		(0.008)	(0.009)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	No
State x Year FE	No	No	Yes
N	10,636	10,636	10,219
F	52.979***	45.863***	41.628***
Adjusted R-square	0.287	0.277	0.270

Table 9: The Pass-through of Innovations to Production Functions

This table reports OLS regression results. We regress firm (LN) Capital-Labor Ratios against interactions between Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database) and (1 & 2) State Patents Growth (the growth rate of states' patents filings per capita), and (3) Industry Patents Tobin's Q (the average Patents Q of the industry excluding the focal firm). The vector of firm controls includes the same variables as in Table 3. All models include firm fixed effects. Models (1) and (3) include year fixed effects. Model (2) includes State x Year fixed effects Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = (LN) Capital-Labor Ratio	(1)	(2)	(3)
State Patents Growth	0.427***	(.)	
	(0.124)	(.)	
State Patents Growth x Workforce	-0.462**	-0.420**	
	(0.189)	(0.193)	
Industry Patents Tobin's Q			0.001***
			(0.000)
Industry Patents Tobin's Q x Workforce			-0.001**
			(0.001)
Workforce	-0.081***	-0.084***	-0.062**
	(0.029)	(0.032)	(0.028)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	No	Yes
State x Year FE	Yes	Yes	No
N	10,881	10,787	11,329
F	22.79636	24.72504	24.34465
Adjusted R-square	0.970	0.970	0 .970

Table 10: Firm characteristics

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and triple interactions between Industry Sales Shocks, the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), and (1) Tobin's Q (growth), (2) TNIC3HHI (industry concentration), (3) Prodmktfluid (competitive threats), and (4) SG&A/Sales (cost structure). The vector of firm controls includes the same variables as in Table 3. All models include firm and year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)	(4)
Industry Sales Shock	0.145***	0.219***	-0.081	0.092***
	(0.036)	(0.053)	(0.092)	(0.032)
Industry Sales Shock x Workforce	-0.210***	-0.357***	0.266	-0.087
	(0.066)	(0.096)	(0.164)	(0.058)
Industry Sales Shock x Workforce x (LN) Tobin's Q (t-1)	0.235***			
	(0.076)			
Industry Sales Shock x Workforce x (LN) TNIC3HHI (t-1)		0.858***		
		(0.273)		
Industry Sales Shock x Workforce x (LN) Prodmktfluid (t-1)			-0.253**	
			(0.104)	
Industry Sales Shock x Workforce x SG&A/Sales (t-1)				-0.222**
				(0.100)
Industry Sales Shock x (LN) Tobin's Q (t-1)	-0.143***			
	(0.036)			
Workforce x (LN) Tobin's Q (t-1)	-0.017			
	(0.017)			
Industry Sales Shock x (LN) TNIC3HHI (t-1)		-0.463***		
		(0.138)		
Workforce x (LN) TNIC3HHI (t-1)		-0.043		
		(0.054)		
Industry Sales Shock x (LN) Prodmktfluid (t-1)			0.113*	
			(0.059)	
Workforce x (LN) Prodmktfluid (t-1)			0.035*	
			(0.019)	
Industry Sales Shock x SG&A/Sales (t-1)				0.030
				(0.028)
Workforce x SG&A/Sales (t-1)				-0.005
				(0.030)
(LN) TNIC3HHI (t-1)		0.058*		
		(0.031)		
(LN) Prodmktfluid (t-1)			-0.025*	
			(0.013)	
SG&A/Sales (t-1)				0.024
				(0.020)
(LN) Tobin's Q (t-1)	0.167***	0.156***	0.158***	0.155***
	(0.013)	(0.011)	(0.011)	(0.011)
Firm Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	11,297	10,949	10,919	10,375
F	56.295***	51.890***	52.326***	47.603***
Adjusted R-square	0.287	0.266	0.281	0.258

Table 11: The Effect of Wage Increases

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and triple interactions between Industry Sales Shocks, the variable Workforce, and two state-level variables capturing wage increases: the states' Minimum Wage in models (1) and (2), and the states' growth rate of Earnings in Manufacturing in models (3) and (4). The vector of firm controls includes the same variables as in Table 3. Models (1) and (3) include firm and year fixed effects and control for the unemployment rate. Models (2) and (4) include firm and state x year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)	(4)
Industry Sales Shock	0.399***	0.421***	0.113***	0.115***
	(0.138)	(0.148)	(0.038)	(0.039)
Industry Sales Shock x Workforce	-0.655***	-0.706***	-0.269***	-0.282***
	(0.230)	(0.236)	(0.080)	(0.083)
Industry Sales Shock x Workforce x Minimum Wage (t-1)	0.066**	0.069**		
	(0.028)	(0.029)		
Industry Sales Shock x Workforce x Earnings (t-1)			0.193**	0.185**
			(0.077)	(0.082)
Workforce x Minimum Wage (t-1)	0.008	0.010		
	(0.008)	(0.008)		
Industry Sales Shock x Workforce x Minimum Wage (t-1)	-0.039**	-0.040**		
	(0.016)	(0.017)		
Workforce x Earnings (t-1)			0.002	0.006
			(0.011)	(0.012)
Industry Sales Shock x Workforce x Earnings (t-1)			-0.058	-0.053
			(0.037)	(0.039)
Minimum Wage (t-1)	-0.008			
	(0.007)			
Earnings (t-1)			-0.004	
			(0.007)	
Unemployment Rate (t-1)	0.025		0.041	
	(0.030)		(0.034)	
Firm Controls	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	No	Yes	No
State x Year FE	No	Yes	No	Yes
N	10,555	10,468	8,434	8,381
F	42.398***	47.088***	34.768***	39.302***
Adjusted R-square	0.290	0.283	0.304	0.296

Table 12: On the Measurement of the Economic Shocks

This table reports OLS regression results. We regress firm Employment Growth against interactions between Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database) and (1) Firm Sales Shock (the lagged residual of a dynamic model estimated via GMM in which employment growth is regressed against its lagged value plus fundamentals predicting employment decisions), (2) Industry Employment Shock (the growth rate of industry employment, excluding the focal firm), and (3) State Employment Shock (the growth rate of the inflow of manufacturing employment into states). The vector of firm controls includes the same variables as in Table 3. All models include firm and year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)
Firm Sales Shock	0.027**		
	(0.012)		
Firm Sales Shock x Workforce	-0.060***		
	(0.023)		
Industry Employment Shock		0.080***	
		(0.029)	
Industry Employment Shock x Workforce		-0.103**	
		(0.052)	
State Employment Shock			0.696***
			(0.210)
State Employment Shock x Workforce			-0.677***
			(0.213)
Workforce	0.222***	0.198***	0.190***
	(0.019)	(0.015)	(0.015)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	10,717	11,298	11,081
F	74.247***	76.320***	73.266***
Adjusted R-square	0.248	0.285	0.285

Table 13: Absorbing Confounding Effects from Competing Social Pillar Categories and the E&G Pillars

This table reports OLS regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and interactions between Industry Sales Shocks, the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), plus interactions between Industry Sales Shocks and key categories from the S pillar (Product Resp., Human Rights, and Community), and the remaining pillars from the ESG triad (Environment and Governance). The vector of firm controls includes the same variables as in Table 3. All models include firm and year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)	(4)	(5)
Industry Sales Shock	0.097***	0.100***	0.119***	0.106***	0.107***
	(0.033)	(0.030)	(0.039)	(0.030)	(0.039)
Industry Sales Shock x Workforce	-0.148***	-0.119**	-0.110*	-0.183***	-0.131**
	(0.052)	(0.054)	(0.062)	(0.064)	(0.055)
Industry Sales Shock x Product Resp.	0.025				
	(0.042)				
Industry Sales Shock x Human Rights		-0.029			
		(0.039)			
Industry Sales Shock x Community			-0.046		
			(0.061)		
Industry Sales Shock x Environmental Pillar				0.054	
				(0.048)	
Industry Sales Shock x Governance Pillar					-0.016
					(0.062)
Workforce	0.205***	0.209***	0.211***	0.237***	0.203***
	(0.016)	(0.016)	(0.016)	(0.017)	(0.016)
Product Resp.	-0.012				
	(0.012)				
Human Rights		-0.031***			
		(0.011)			
Community			-0.027*		
			(0.016)		
Environmental Pillar				-0.106***	
				(0.018)	
Governance Pillar					-0.011
					(0.015)
Firm Controls	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	11,297	11,297	11,297	11,297	11,297
F	62.937***	61.953***	61.851***	65.370***	61.295***
Adjusted R-square	0.286	0.286	0.286	0.289	0.286

Table 14: On the Measurement of Employee Welfare Policies: Alternative Ratings

This table reports OLS regression results. We regress firm Employment Growth against the Industry Sales shocks interacted with alternative proxies for employee policies (sourced from the KLD database): (1) Number of Employee-related Strengths, (2) Number of Employee-related Concerns, and (3) Number of Net Employee-related Strengths (Strengths minus Concerns). The vector of firm controls includes the same variables as in Table 3. All models include firm and year fixed effects. Firm clustered robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)
Industry Sales Shock	0.058**	-0.001	0.035
	(0.028)	(0.023)	(0.024)
Industry Sales Shock x Employee Strengths	-0.031**		
	(0.016)		
Industry Sales Shock x Employee Concerns		0.045**	
		(0.023)	
Industry Sales Shock x Employee Strengths (-) Concerns			-0.037**
			(0.015)
Employee Strengths	0.000		
	(0.003)		
Employee Concerns		-0.011**	
		(0.006)	
Employee Strengths (-) Concerns			0.003
			(0.003)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
N	2,840	2,840	2,840
F	14.336***	16.215***	15.468***
Adjusted R-square	0.221	0.228	0.228

Table 15: On the Persistency of Labor Investments: Dynamic GMM Estimation

This table reports Arellano-Bond GMM dynamic regression results. We regress firm Employment Growth against Industry Sales Shocks (the growth rate of industry sales) and interactions between Industry Sales Shocks and the variable Workforce (our proxy for employee welfare policies, from the Refinitiv ESG database), controlling for past Employment Growth. The vector of firm controls includes the same variables as in Table 3. All models include firm and year fixed effects. Firm clustered (Windmeijer) robust standard errors in parenthesis. *, ** and *** denote statistical significance at the 0.10, 0.05 and 0.01 levels respectively.

y = Employment Growth	(1)	(2)	(3)
Industry Sales Shock	0.172***	0.169***	0.148***
	(0.053)	(0.055)	(0.055)
Industry Sales Shock x Workforce	-0.212***	-0.221***	-0.197**
	(0.078)	(0.082)	(0.084)
Employment Growth (t-1)	0.974***	0.919***	0.902***
	(0.041)	(0.046)	(0.049)
Employment Growth (t-2)		0.020	0.010
		(0.014)	(0.019)
Employment Growth (t-3)			0.004
			(0.012)
Workforce	0.333***	0.322***	0.356***
	(0.058)	(0.058)	(0.060)
Firm Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Sargan OVERID (p-value)	0.496	0.423	0.299
Arellano-Bond AR2 (p-value)	0.552	0.925	0.678
N	9,646	9,482	9,202
Chi2	2,482.760***	2,463.320***	2,202.190***

Appendix

Table 16: **Variables Summary**

Variable	Definition	Data Source
Employment Growth	Growth rate of firm employment	Compustat
Industry Sales Shock	Growth rate of industry (SIC 3-digit) sales (excluding focal firm)	Compustat
Workforce	Rating on the Workforce category of the Social pillar	Refinitiv
Tobin's Q	Market value of equity plus total debt divided by total assets	Compustat
(LN) Market Capitalization	The natural log of market capitalization	Compustat
ROA	Net income divided by total assets	Compustat
Net PPE/Assets	Net property, plant, and equipment divided by total assets	Compustat
Leverage	Total debt divided by market capitalization	Compustat
TNIC3HHI	Industry (TNIC) market share concentration ratio	Hoberg & Phillips (2016)
Prodmktfluid	Product market fluidity (competitive threats)	Hoberg *et al.* (2014)
SGA/Sales	Selling, general and administrative expenses divided by sales	Compustat
(LN) Capital-labor	The natural log of PPE divided by the number of employees	Compustat
Product Responsibility	Rating on the Product Responsibility category of the Social pillar	Refinitiv
Human Rights	Rating on the Human Rights category of the Social pillar	Refinitiv
Community	Rating on the Community category of the Social pillar	Refinitiv
Environmental Pillar	Rating on the Environmental pillar	Refinitiv
Governance Pillar	Rating on the Governance pillar	Refinitiv
Firm Sales Shock	The residual of a sales growth model as predicted by fundamentals	Compustat
Patent Tobin's Q	The replacement cost of patent capital	Woeppel (2022)
Industry Employment Shock	Growth rate of industry (SIC 3-digit) employment (excluding focal firm)	Compustat
MaxBen	Maximum weekly unemployment insurance benefits ($)	Dept of Labor
State Employment Shock	Growth rate of state manufacturing employment	FRED
State Patents Shock	Growth rate of state patents filings per capita	FRED
State Minimum Wage	State hourly Minimum Wage ($)	FRED
State Earnings Shock	Growth rate of state hourly earnings in manufacturing	FRED
RTW States (0/1)	=1 for states compliant with Right-to-work laws, =0 otherwise	Authors
Employee Strengths	The number of employee-related Strengths	KLD
Employee Concerns	The number of employee-related Concerns	KLD
Net Employee Strengths	The number of employee-related Strengths (-) Concerns	KLD
UNGC Labor Incidents Shocks	Industry increase in the number of UNGC incidents	RepRisk
Employment Conditions Shocks	Industry increase in the number of EC incidents	RepRisk
PSL Enactment Dummy	=1 on and after the years when PSL laws were enacted by the adopting states, and =0 before that in the ever treated states and also for the never-treated states	Authors
State Workplace Shootings Victims	Number of fatal victims per state	The Violence Project
Δ State Workplace Shootings Victims	Δ Number of fatal victims per state	The Violence Project
State LGBTQ Hate Crimes Legislation	Index (1-4, higher is better)	US State Sustainable Development Report 2021

Table 17: **Industry Summary Statistics (averages)**

Industry	Employment Growth	Sales Growth	Workforce Ratings	Number of Firms
AGRICULTURAL PRODUCTION-CROPS	-0.03	-0.00	0.21	3.00
AGRICULTURAL PRODUCTION-LIVESTOCK/ANIMAL	0.02	-0.36	0.18	1.00
AMUSEMENT AND RECREATION SERVICES	0.12	0.07	0.38	13.00
APPAREL AND ACCESSORY STORES	0.04	0.02	0.41	18.00
APPAREL AND OTHER FINISHED PRODUCTS	0.07	-0.02	0.39	13.00
AUTOMOTIVE DEALERS AND GAS STATIONS	0.05	0.03	0.44	12.00
AUTOMOTIVE REPAIR, SERVICES, AND PARKING	0.02	0.01	0.40	5.00
BUILDING CONSTRUCTION-GEN. CONTRACTORS/ BUILDERS	0.03	0.05	0.27	15.00
BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY, AND MOBILE HOME DEALERS	0.09	0.03	0.58	6.00
BUSINESS SERVICES	0.08	0.05	0.46	213.00
CHEMICALS AND ALLIED PRODUCTS	0.11	0.03	0.46	276.00
COAL MINING	-0.01	-0.04	0.48	5.00
COMMUNICATIONS	0.04	0.03	0.36	41.00
CONSTRUCTION-SPECIAL TRADE CONTRACTORS	0.09	0.13	0.24	5.00
EATING AND DRINKING PLACES	-0.01	0.01	0.45	35.00
EDUCATIONAL SERVICES	0.04	0.00	0.36	12.00
ELECTRIC, GAS, AND SANITARY SERVICES	0.02	0.09	0.58	4.00
ELECTRONIC AND OTHER ELECTRICAL EQUIPMENT AND COMPONENTS, EXCEPT COMPUTER	0.05	0.04	0.46	114.00
ENGINEERING, ACCOUNTING, RESEARCH, MANAGEMENT, AND RELATED SERVICES	0.10	0.04	0.51	28.00
FABRICATED METAL PRODUCTS, EXCEPT MACHINERY AND TRANSPORTATION EQUIPMENT	0.03	0.03	0.37	27.00
FOOD AND KINDRED PRODUCTS	0.03	0.04	0.53	44.00
FOOD STORES	0.04	-0.09	0.44	7.00
FURNITURE AND FIXTURES	0.02	0.01	0.46	13.00
GENERAL MERCHANDISE STORES	0.02	0.03	0.56	14.00
HEALTH SERVICES	0.08	0.03	0.43	32.00
HEAVY CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION-CONTRACTORS	0.04	0.01	0.40	12.00
HOLDING AND OTHER INVESTMENT OFFICES	0.05	0.09	0.44	13.00
HOME FURNITURE, FURNISHINGS, AND EQUIPMENT STORES	0.07	-0.01	0.40	4.00
HOTELS, ROOMING HOUSES, CAMPS, AND OTHER LODGING PLACES	0.01	0.08	0.61	4.00
INDUSTRIAL AND COMMERCIAL MACHINERY AND COMPUTER EQUIPMENT	0.02	0.01	0.42	92.00
INSURANCE AGENTS, BROKERS, AND SERVICE	0.07	0.04	0.43	2.00
LEATHER AND LEATHER PRODUCTS	0.07	0.03	0.45	7.00
LUMBER AND WOOD PRODUCTS, EXCEPT FURNITURE	-0.01	0.01	0.52	8.00
MEASURING, ANALYZING AND CONTROLLING INSTRUMENTS	0.08	0.04	0.44	121.00
METAL MINING	0.06	0.06	0.64	6.00
MINING AND QUARRYING OF NONMETALLIC MINERALS, EXCEPT FUELS	0.03	0.04	0.27	7.00
MISCELLANEOUS MANUFACTURING INDUSTRIES	0.01	0.02	0.48	11.00
MISCELLANEOUS REPAIR SERVICES	0.09	0.09	0.41	21.00
MOTION PICTURES	0.07	-0.01	0.21	5.00
MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING	0.04	0.04	0.43	15.00
NONCLASSIFIABLE ESTABLISHMENTS	-0.00	-0.01	0.59	1.00
NONDEPOSITORY INSTITUTIONS	0.03	0.09	0.44	1.00
OIL AND GAS EXTRACTION	-0.01	0.02	0.42	49.00
PAPER AND ALLIED PRODUCTS	0.02	0.04	0.56	14.00
PERSONAL SERVICES	-0.02	-0.03	0.31	6.00
PETROLEUM REFINING AND RELATED INDUSTRIES	0.03	0.02	0.56	13.00
PRIMARY METAL INDUSTRIES	0.01	0.01	0.32	21.00
PRINTING, PUBLISHING, AND ALLIED INDUSTRIES	-0.01	0.04	0.45	12.00
RAILROAD TRANSPORTATION	-0.02	0.03	0.72	4.00
REAL ESTATE	0.08	-0.00	0.19	3.00
RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS	0.01	-0.01	0.43	16.00
SECURITY AND COMMODITY BROKERS	0.13	-0.02	0.23	4.00
SOCIAL SERVICES	0.03	0.06	0.27	1.00
STONE, CLAY, GLASS, AND CONCRETE PRODUCTS	-0.02	-0.04	0.36	6.00
TEXTILE MILL PRODUCTS	0.03	0.17	0.43	3.00
TOBACCO PRODUCTS	-0.11	0.04	0.75	2.00
TRANSPORTATION BY AIR	0.06	0.00	0.50	14.00
TRANSPORTATION EQUIPMENT	0.05	0.03	0.42	60.00
TRANSPORTATION SERVICES	0.10	0.10	0.37	7.00
WATER TRANSPORTATION	0.03	0.06	0.45	14.00
WHOLESALE TRADE;DURABLE GOODS	0.07	0.02	0.35	38.00
WHOLESALE TRADE;NONDURABLE GOODS	0.04	0.02	0.41	21.00