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ABSTRACT

To what extent, if at all, did employee-owned (EO) firms maintain jobs for workers compared to non-EO firms in the spring 2020 Covid-19 shock to the US economy? Did EO firms shift jobs from workplaces to work-from-home locations in the pandemic more or less than other firms? This paper uses a unique survey of nearly 750 firms that differ in the Employee Stock Ownership Plan (ESOP) mode of employee ownership to answer these questions. The analysis finds that in the Covid crisis ESOPs with majority ownership of their firm maintained proportionately more jobs and shifted work to workers' homes more than other firms and that these differences scale with the ESOP percentage of firm ownership. The findings are consistent with a model of firm decision-making in which ESOP firms weigh the well-being of employee-owners as workers in the firm in a job crisis while non-ESOP firms view workers solely as a costly input in production in maximizing the income of their (non-employee) owners.

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Contrary to the warnings in early theoretical models of employee ownership (EO) that EO firms have a short run incentive to keep employment low to maximize revenue per worker (Ward 1958, Vanek 1970, Dow 2018) empirical analyses of demand for labor find that EO firms stabilize employment over the business cycle with fewer job losses and a greater chance of surviving a recession than other firms (Blair, Kruse, and Blasi 2000; Park, Kruse, and Sesil 2004; Blasi, Kruse, and Weltmann 2013). Kurtulus and Kruse (2017) find that this pattern is not limited to milder cyclic downturns but also characterized the 2008 Great Recession decline in GDP.¹ Because Work-From-Home (WFH) was a niche phenomenon found largely among self-employed workers prior to Covid-19² little was known about whether EO firms made more or less use of WFH than non-EO firms in the past or would do so in the pandemic.

The paper analyzes data from the *COVID-19 Responses by Businesses with and without Employee Ownership Survey* (“EOC survey” for Employee Ownership-Covid) to contrast the employment practices of EO firms and non-EO firms in the spring 2020 Covid shock to the job market. The EOC survey asked executives³ in 747 private firms whether the firm had an Employee Stock Ownership Plan (ESOP) -- the predominant form of employee ownership in the US -- and the number and timing of their moving work to workers’ homes in the crisis, along with standard questions about employment and other aspects of its business. Expanding on Blasi and Kruse’s (2023) tabulations of the survey, we contrast the number employed and number working from home in firms with differing ESOP stakes in ownership before the pandemic and in the first six months of the pandemic. We give particular attention to Majority-ESOP firms -- those that owned a majority of the firms’ shares, including many with 100% ownership -- compared to Minority-ESOP firms that had a minority of shares and to a base group of firms with no ESOP. We further analyze the percentage of the firm owned by the ESOP and its use of group incentive modes of pay -- profit-sharing, gain-sharing, or other group bonuses -- as pathways to saving jobs and moving work to workers’ homes.

Our findings are consistent with a world in which ESOP firms value the well-being of employee-owners proportionate to their share of ownership in employment decisions, especially after the ESOP has achieved majority ownership while non-ESOP firms minimize or ignore the value of jobs to workers, presumably because their goal is to maximize the income of their non-employee owners. The findings also provide insight into the employment decisions of non-ESOP firms, most of which reduced employment rather than maintaining work while cutting workers’ pay as a compensating differential for the suddenly valuable workplace conditions of holding onto one’s job in a recession or working at home. We hypothesize that this behavior reflects

¹ Consistent with these results Rosen and Quarrey (1987), and Winther et al.(1994) found that employment in EO firms increased in more than other firms in earlier periods.

² Evidence on pre-pandemic WFH from the May 2004 supplement of the Current Population Survey (BLS, September 2005, Table 1, Table 7) showed that 2/3rds of the 7.5% of workers who reported working at home *for pay* were self-employed. In thousands, Table 1 reports 136,602 total employed while Table 7 shows 3,349 paid wage and salary workers *working for pay* at home and 6,960 self-employed workers (presumably all working to make money) for a total of 10,309 working at home for pay. Thus 7.5% of all workers worked from home for pay and of those slightly over 2/3rds ($67.5\% = 6960/10309$) were self-employed. Evidence on WFH prior to the pandemic, October 2022 and in ensuing months the CPS asked whether workers had teleworked in February 2020: 9% reported that they had done so (BLS, October 2022, Table 9) -- a higher percentage than in 2004 but dwarfed by pandemic-induced increase to 35.4% in May 2020 (BLS, May 2020, Table 1).

³ Respondents were limited to high level executives, senior management, or someone in a human resource function responsible for and/or involved in workforce-related decisions. Those are the findings of a survey designed by Rutgers University’s Institute for the Study of Employee Ownership and Profit Sharing and conducted by the survey firm SSRS, whose survey work was funded by the Employee Ownership Foundation. For further details of the survey see Blasi and Kruse (2023).

fears that workers and the public would view pay cuts in the pandemic as exploiting a public health disaster and, per behavior in ultimatum game experiments (Camerer, 2011; Cochar, et al, 2021), respond negatively to the pay reduction in the immediate term or in future economic dealings.

1. Employee Ownership and WFH in Covid-19 pandemic

We analyze three measures of employment response to the pandemic-induced crisis: *changes in total employment*⁴; *changes in WFH employment*; and *the time when firms first sent workers to work at home in the pandemic*. We link these responses to a set of dichotomous variables for *Majority-ESOP* firms (=1 if the ESOP owns 50+% of the firm, 0 otherwise) and for *Minority-ESOP* firms (=1 if the ESOP owns less than 50% of the firm, and 0 otherwise) compared to *non-ESOP* firms; and to a single continuous *% ESOP Ownership* variable that takes numeric values from 0% to 100%.

Table 1 reports the mean changes in total employment and in WFH employment and the level of independent variables among firms with ESOP majority ownership, ESOP minority ownership and without an ESOP in the EOC survey. It shows a smaller percentage loss of jobs in the pandemic for Majority-ESOP firms than for Minority-ESOP or non-ESOP firms and a larger increase in the percentage of firms that moved jobs to WFH for Majority-ESOP firms than for Minority ESOP or non-ESOP firms.

Figure 1 provides greater insight into the relation between ESOP firms and the change in WFH in the pandemic. Figure 1 shows that prior to the pandemic, Majority-ESOP firms were least likely to have workers doing any WFH, with 10% of their workers doing some WFH compared to 17% for Minority ESOP firms and 13% for non-ESOP firms. But when WFH became critical in saving jobs, Majority-ESOP firms increased their WFH share of employment to 36%, closing most of the January 2020 gap in WFH with the other groups.

The EOC survey asked about several attributes of firms that might impact employment decisions in the pandemic beyond employee ownership: the industry and region in which they operate; the number of workers they employed pre-pandemic; whether the firm was an *Essential Business*, which allowed it to maintain its normal workplace in the crisis; whether the firm received or expected to receive government *Financial Assistance* under the Paycheck Protection or other programs designed to help businesses survive the crisis; and the percentage of workers paid by some form of *Incentive Pay Sharing*, including profit-sharing, gainsharing, and group bonuses, whose amount invariably declines in recessions and thus lowers the cost of labor and protects employment without any formal reduction in pay.

In addition, the survey asked executives the importance of five motives in keeping employees on the job irrespective of the immediate economic situation facing the firm, by preserving 1) worker skills, 2) ties to customers or clients, 3) a culture of teamwork, 4) employee commitment and loyalty, and 5) a sense of ownership of the firm. Each of these variables is

⁴ Due to differences in the timing of survey responses, we benchmarked employment figures to the first day of the survey (August 5th, 2020) on the basis of the growth of employment in the industry of the firm using BLS Current Employment Statistics data.

scaled from 0 (not important) to 10 (important). Table 1 shows that executives in Majority-ESOP firms weigh the importance on keeping workers on the job on all five areas more than executives in Minority-ESOP firms who in turn give greater weight to those motives than executives in non-ESOP firms. Given the correlations among the motives, we sum the responses into a single “executive motives” statistic to assess whether their concerns were turned into employment outcomes.

2. Probing ESOP firms’ Smaller Loss of Total Employment

Our main tools to estimate whether firms with ESOP ownership changed employment more or less than firms without ESOP ownership are multiple regression models that take the percent change in employment from January 2020 (pre-pandemic) to August/Sept 2020 (about one half year into the pandemic) as the dependent variable, and that include the independent variables described in section 1 in the relevant regressions along with measures of ESOP ownership.

Table 2 presents the regression results. Panel A uses the dichotomous Majority/Minority ESOP ownership variables to measure ESOP status while Panel B uses the ESOP percentage of ownership. The estimates in column 1 of panel A show a 15-percentage point more positive change in employment (i.e., a smaller drop in employment as the pandemic began) for the Majority-ESOP firms than for the omitted non-ESOP group compared to a 2-percentage point more positive change in employment for the Minority-ESOP firms than for the non-ESOP group. This pattern of differentials holds up in column 2, which includes measures of the firms’ employment, industry and region, if the firm is an essential business (which obtains a strong positive coefficient in the regression), and if the firm received or expects federal financial aid (which has a negligible effect on the change in employment). Given the large drop in total employment in the period, the positive coefficients on the ESOP firm dummy variables show that these firms had smaller declines in employment than non-ESOP firms, with the Majority-ESOP group far surpassing the other two groups in maintaining employment in the crisis.

The estimated coefficients on the ESOP dummy variables drop substantially, however, in the column 3 regression that adds the % of workers covered by *incentive pay sharing* to the analysis. Adding the incentive pay sharing variable reduces the coefficient on Majority-ESOP by 0.055 points compared to column 2 and thus accounts for nearly half of the ESOP effect. This finding is consistent with Weitzman’s classic (1986) model of the profit-sharing firm, in which the amount of money going to workers paid with profit-sharing falls when revenues/profits fall. By contrast, the column 4 regression, which reports the results of a regression that includes the combined *executive motive* statistic, shows that executive motives did little to explain the job saving at ESOP firms.⁵ Since the regressions included dummy variables for ESOP ownership, the failure means that the differences in executive motives *within* the Majority-ESOP, Minority-ESOP, and non-ESOP groups add little to the explanation of their changes in employment.

The results in Panel B of Table 2 tell a similar story with the % ESOP ownership variable replacing the Majority-ESOP and Minority-ESOP variables in the regressions of changes in total employment on potential determinants of the changes. The estimated coefficient on % ESOP

⁵ Appendix Table A1 confirms this result for variables based on the individual motives.

ownership is positive-significant in all four columns. As in Panel A, however, the estimated coefficient is substantially weakened with addition of the *incentive pay sharing* variable, with a drop from 0.142 (column 2) to 0.087 (column 3). The combined executive motive variable, added in column 4, had a modestly significant effect that barely reduced the estimated effect of the % ESOP variable.

Given the huge difference in the WFH potential between white-collar and blue-collar work found in the O-Net database (Dingel and Nieman, 2020) and in actual WFH by occupations (BLS, May 2020 Table 2), we divided each firms' employment between white collar and blue collar occupations and estimated the percentage change in employment due to ESOPs separately for the two groups. Table 3 shows that in both the panel A dichotomous and the Panel B continuous measure of ESOP ownership regressions that employee ownership boosted employment more for blue collar workers than for white collar workers. This possibly reflects the generally greater concern that blue-collar workers have for job security, which almost surely heightened in the pandemic, and/or the increased weight the firm gave to those workers in the firm's maximand due to their share of ownership or to some mixture thereof. The other variable that contributes to the larger ESOP employment gain for blue collar workers than for white-collar workers is whether firms report doing essential work.⁶

In sum, in the pandemic, ESOP firms maintained jobs more than other firms and did so in part due to their use of group incentive pay for a large proportion of their work force.

3. Probing ESOP Firms' Greater Increase in WFH Employment

Does the greater expansion of WFH employment in the pandemic among Majority-ESOP firms than among Minority-ESOP and non-ESOP firms—shown in the mean values of changes in WFH in Table 1—hold up in regression models that include other potential determinants of WFH?

We answer this question by estimating regressions in which the dependent variable is the change in WFH employment from Jan 2020 to Aug/Sept 2020 scaled relative to Jan 2020 *total* employment that include the independent variables used in tables 2 and 3. Due to a data problem in the EOC survey in which 49 firms reported more employees working at home than working in total (see Appendix Tables A4 to A6), our analysis is a bit more complicated than it would otherwise have been. We address the data problem in two ways: first, by limiting analysis to the 93% of firms that had no data inconsistency and then by examining the robustness of results to alternative less extreme ways of dealing with the data problem than dropping observations completely.

Table 4 presents the results of regressions for the firms with no data problem. The estimates in Panel A show that those with Majority-ESOP ownership increased WFH employment the most, followed by those with Minority-ESOP ownership, compared to the base non-ESOP group. The estimates in Panel B show that the WFH increase was positively associated with the ESOP % of ownership. In both panels the estimates in column 3 show that

⁶ Appendix Table A2 show that the results hold with other categorization of white-collar and blue-collar jobs.

incentive pay sharing was the major pathway for the increase in WFH employment as it was in tables 2 and 3: the % of workers covered by incentive pay is the only variable whose inclusion in the regression substantially reduced the estimated coefficients on ESOP variables.⁷

We used three other ways to deal with the observations with inconsistent data. Our first method was to lower the importance of each inconsistent observation by the magnitude by which WFH exceeded total employment. This gives a weight of 1 to the firms with no inconsistency in the data and smaller weights for the firms with inconsistent data, with weights declining with the magnitude of the inconsistency, thus treating the data as contaminated with measurement error that is greater the greater the inconsistency. Appendix Table A4 shows that this analysis does not change the conclusion that Majority-EO firms increased WFH the most. Our second method included the firms with data inconsistency but used a dummy variable to distinguish those firms from the firms with any data problem on the notion that the error would affect the level of change but not the impact of other factors. Appendix Table A5 shows that the table 4 conclusion is robust to this emendation. Our third method deleted firms in the extreme right of the error distribution, where we define extreme right as firms reporting WFH employment more than 50% higher than total employment on the notion that these firms might have erroneously reported total employment of non-WFH workers. Appendix Table A6 shows that the table 4 conclusion is robust to this emendation.

In short, the table 4 result that the Majority-ESOP owned firms increased WFH more than other firms was robust to these milder treatments of the inconsistent data. The 93% of the firms with consistent data dominate the analysis.

As a check on the conclusion that Majority-ESOP firms increased WFH more than other firms we further analyzed an EOC survey question about WFH *that sidestepped the employment data entirely*. This question asked when a firm first sent workers to work-at-home in the pandemic: “If you sent workers to work at home due to the COVID crisis, on what date (approximately) did you start sending them to work at home?”. If ESOP firms were more prone to use WFH to preserve jobs than other firms, it is reasonable to expect them to introduce WFH earlier in the pandemic than other firms. Figure 2 summarizes the responses to the “time sent home” question in terms of the cumulative distribution of months when firms first sent workers home. The cumulative distribution is steepest for Majority-ESOPs with, for example, 84% of Majority-ESOP firms having sent some employees to work at home by April 2020 compared to 68% of Minority-ESOP firms and 66% of non-ESOP firms.

Finally, we used a multivariate regression equation linking the number of months past the March onset of the pandemic when the firm moved jobs to workers’ homes (which gives a 0 for February, 1 for March, 2 for April, 3 for May and so on) to the ESOP status of the firm and other employment related variables as independent right-hand side variables. Table 5 shows that this regression yields a negative coefficient on the Majority-ESOP firm dummy variable that dates the Majority-ESOP response as 0.3 months earlier than the base non-ESOP group (Panel A columns 2-4). Panel B shows a similar negative coefficient on the % ESOP ownership variable on the month the firm sent workers to WFH in the pandemic.

⁷ See Appendix Table A3 for results that include the individual executive motive factors separately.

4. WFH as Response to Pandemic Shocks to non-WFH Jobs

Figure 3 examines the WFH adjustment of firms in a different way. It treats the decline in *non-WFH* employment in the pandemic as an indicator of the magnitude of the unexpected shock to jobs from Covid-19 and asks how much of the pandemic increase in WFH offset the loss of non-WFH jobs.⁸ The data for Majority-ESOP firms shows a shock loss of 17,216 jobs from January 2020 to August/September 2020 when the firm filled out the survey and an increase in WFH jobs of 14,907, implying that shifting work to workers' homes "absorbed" 87% of the shock loss of jobs. The data for Minority-ESOP firms shows a shock loss of 34,334 jobs and an increase in WFH jobs of 14,008, implying that WFH absorbed 41% of the shock. The data for non-ESOP firms shows a shock loss of jobs of 21,893 with a 4,360 increase in WFH jobs absorbing 20% of the loss of jobs. To the extent to which the loss of non-WFH jobs reflects the magnitude of the shock hit on firms, the Majority-ESOP firms responded at a much greater rate with WFH than Minority-ESOP and non-ESOP firms.

Finally, we compared the increase in WFH employment among firms that reported some WFH employment prior to the pandemic and thus operated on an *intensive margin* of WFH adjustment in the pandemic to firms who reported no WFH employment prior to the pandemic and thus operated on the *extensive margin* of the WFH adjustment. Which set of firms absorbed more of the shock loss of non-WFH jobs by expanding WFH? On the one side, firms on the intensive margin might have increased WFH more because their technology of work is more suitable to WFH and because their Human Resource department had experience shifting work from the workplace to home, evinced in their having some WFH in January 2020. On the other side, however, firms at the extensive margin could have a larger response because the marginal productivity of WFH might fall more slowly from zero up to some point as WFH increases than for firms which already have WFH workers.⁹

The calculations in Figure 4 show that the movement to WFH saved a larger proportion of non-WFH jobs lost in the shock among firms on the intensive margin relative to firms on the extensive margin overall and in the Majority-ESOP firms and to a lesser extent in the non-ESOP firms. But the opposite is true for Minority-ESOP firms – the only situation in which the EOC found the Minority-ESOP firms did not fit between Majority-ESOP and no-ESOP firms -- a pattern that deserves further analysis but for which we could find no insight in the data and thus requires additional data for explanation.

5. Conclusion

In sum, Majority-ESOP firms maintained total employment and increased WFH jobs more than other firms in the Covid-19 pandemic. Returning to our opening paragraph, why was there such a pronounced difference between EO and non-EO firms in changing employment in this disaster as in other economic downturns compared to the early theoretical models that

⁸ A presumably better way to estimate the exogenous impact of the pandemic on job loss would have been to use data on changes in sales or revenue as measures of the shock or as determinants of changes in non-WFH employment in an IV model. But the EOC data did not ask for sales or revenues in January 2020 so we used the loss of non-WFH jobs reported in the survey as our indicator.

⁹ This depends on the shape of the demand curves, on which we have no evidence.

suggested that EO firms would treat employment in the opposite direction?

The simplest explanation is that ESOP firms have a different maximand guiding their optimizing behavior than non-ESOP firms. The ESOP maximand is likely to include the well-being of employee-owners as workers in the firm while the non-ESOP maximand is likely to consider only the income of non-employee owners, with employees viewed as “just another costly input” in production. This explanation is consistent with ESOPs’ extensive use of incentive pay sharing, which lowers the cost of labor and the incentive to cut jobs as the incentive pay part of wages falls with revenues or profits in downturns, while also reducing the incentive to increase jobs in boom periods (per the early models of EO employment.)

We note that an “it’s-the-maximand” explanation is consistent with the gift-exchange variant of efficiency wage theory that is often used to illuminate the overall success of EO firms (Akerlof 1982; Axelrod 1997; Fehr and Gächter 2000; Gintis et al. 2005). These models assume that gift-exchange firms offer higher pay to workers, who reciprocate with greater effort that raises productivity and profits. The models often root reciprocity in a supportive corporate culture that helps the firm and workers overcome incentives to free ride and shirk.

In our case the “gift” of ESOP firms to workers in the pandemic was maintaining their job when jobs became scarce and/or shifting jobs rapidly to WFH when working at a workplace became riskier for workers’ health. Gifts of jobs/WFH jobs differ in at least one respect from gifts of higher wages in the standard gift/efficiency wage model. The value of the job gift becomes less valuable when the economy recovers/the pandemic recedes as it becomes easier for the worker to shift to other safe workplace jobs. By contrast, the value of a higher wage gift is unlikely to change with economic developments outside the firm, assuming that the gift is measured as relative to other pay and moves commensurately with wages in the future.

The one question in the EOC survey that addresses gift exchange/efficiency wage type models is the question asked to executives about motives to preserve worker jobs for potential long run gain, which casts light on the impact of supportive corporate culture on the exchange. The mean values in Table 1 showed that executives in employee-owned firms were more motivated to maintain employment for potential long-term benefits, consistent with the model. But the ensuing regression analyses found that the executive motive variable added little to accounting for the variation among firms in maintaining total employment or shifting to WFH, and did not impact the estimated effect of ESOP firms in changing total employment or shifting work to WFH.

We suspect that the weak impact of executive motives is due to its measuring only the business side’s views of corporate culture with a hypothetical question about motives rather than asking what the firm did and why in the pandemic. Theories of reciprocal behavior call for the views of workers as well as managers on the firms’ policies and, absent data from workers, from questions that asked management directly about policies in the pandemic and whether workers responses reflected reciprocating employee behavior. Empirical research has identified a bundle of high performance work practices that make up specific channels of worker-owner reciprocity. This research, using employee surveys, has identified such practices as co-monitoring peers, making suggestions to improve the firm’s operations, extensive training of workers so they are

competent to solve company problems, providing workers greater assurances of job security in order to secure their commitment, emphasizing a “coaching supervision” rather than a “top down command and control” management approach, and making other efforts to lower labor turnover that contributes to the stability and perhaps the success of employee ownership (Kruse, Freeman, and Blasi 2010, chapters 2,4,5,7). Measuring these features in this particular survey would have provided a more specific test of the theorized model to employer behavior in the pandemic. Absent such data, the “it’s-in-the-maximand” explanation is a pithy way to capture our results.

Bibliography

Akerlof, George. "Labor contracts as partial gift exchange." *The quarterly journal of economics* 97, no. 4 (1982): 543-569.

Axelrod, Robert. *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*. Princeton, NJ: Princeton University Press, 1997.

Blair, Margaret, Douglas Kruse, and Joseph Blasi. "Employee ownership: an unstable form or a stabilizing force?." *Available at SSRN 142146* (2000).

Blasi, Joseph, and Douglas Kruse. (2023) "Employee-Owned Firms in the COVID-19 Pandemic." <https://www.employeeownershipfoundation.org/research/employee-owned-firms-excel-at-employee-retention-during-pandemic>

Blasi, Joseph, Douglas Kruse, and Dan Weltmann. "Firm survival and performance in privately held ESOP companies." In *Sharing ownership, profits, and decision-making in the 21st century*, pp. 109-124. Emerald Group Publishing Limited, 2013.

BLS, September 2005, Table 1, Table 7, Work at Home in 2004, U.S. Department of Labor. <https://www.bls.gov/news.release/pdf/homey.pdf>

BLS, October 2022, Table 9, U.S. Department of Labor. <https://www.bls.gov/cps/telework.htm>

BLS, May 2020, Table 1, Table 2, U.S. Department of Labor. <https://www.bls.gov/cps/covid-may2020-sept2022-data-tables.htm>

Camerer, Colin. *Behavioral game theory: Experiments in strategic interaction*. Princeton, NJ: Princeton University Press, 2011.

Cochard, Francois, Julie Le Gallo, Nikolaos Georgantzis, and Jean-Christian Tisserand. "Social preferences across different populations: Meta-analyses on the ultimatum game and dictator game." *Journal of Behavioral and Experimental Economics* 90 (2021): 101613.

Dingel, Jonathan, and Brent Neiman. 2020. "How Many Jobs Can Be Done at Home." *Journal of Public Economics* 189 (2020): 104325.

Dow, Gregory. *The Labor-Managed Firm: Theoretical Foundations*. Cambridge: Cambridge University Press, 2018.

Fehr, Ernst, and Simon Gächter. "Cooperation and punishment in public goods experiments." *American Economic Review* 90, no. 4 (2000): 980-994.

Gintis, H., S. Bowles, R. Boyd, and E. Fehr, eds. 2005. *Moral sentiments and material interests: The foundation of cooperation in economic life*. Cambridge, MA: MIT Press.

Kruse, Douglas L., Richard B. Freeman, and Joseph R. Blasi. *Shared Capitalism at Work: Employee Ownership, Profit and Gain Sharing, and Broad-based Stock Options*. University of Chicago Press, 2010.

Kurtulus, Fidan Ana, and Douglas L. Kruse. *How did employee ownership firms weather the last two recessions?: Employee ownership, employment stability, and firm survival: 1999-2011*. WE Upjohn Institute, 2017.

Park, Rhokeyun, Douglas Kruse, and James Sesil. "Does employee ownership enhance firm survival?." In *Employee participation, firm performance and survival*, pp. 3-33. Emerald Group Publishing Limited, 2004.

Rosen, Corey, and Michael Quarrey. "How well is employee ownership working?." *Harvard Business Review* 65, no. 5 (1987).

Vanek, Jaroslav. *The general theory of labor-managed market economies*. Vol. 21. Ithaca, NY: Cornell University Press, 1970.

Ward, Benjamin. "The firm in Illyria: Market syndicalism." *American Economic Review* 48, no.4 (1958): 566– 89.

Weitzman, Martin. "The share economy: Conquering stagflation." *ILR Review* 39, no. 2 (1986): 285-290.

Winther, Gorm, Peter Kardas, Paul Sommers, Richard Marens, and Katharina Gale. "Employment and Sales Growth in Washington State Employee Ownership Companies." *Journal of Employee Ownership Law and Finance* 4, no. 2 (1994): 83-135.

Tables and Figures

Table 1. Number of Firms, Mean Values and Differences in Key Variables, by ESOP Status of Firms

	Majority- ESOP (1)	Minority- ESOP (2)	Non- ESOP (3)	Difference (1) – (3) (2) – (3)	
Number of firms	287	191	269		
Change in employment January to August/Sept					
Percent change in total employed	-0.0489	-0.1843	-0.2022	0.1533***	0.0179
Percent change in white-collar jobs	-0.0400	-0.1672	-0.1338	0.0937***	-0.0335
Percent change in blue-collar jobs	-0.0708	-0.1790	-0.2118	0.1410***	0.0328
Change in WFH Measures					
Percent change in WFH workers (at least half of work hours)	0.2435	0.2037	0.1375	0.1060***	0.0663
Sent any workers to work at home (unconditional hours)	0.8328	0.7965	0.6659	0.1669***	0.1306**
Economic measures of firm					
Essential business	0.8484	0.7758	0.6302	0.2182***	0.1457**
Financial assistance	0.8019	0.7261	0.6106	0.1912***	0.1155*
Incentive Pay Sharing (Profit-sharing, gain sharing, or group bonuses)	0.7082	0.4425	0.3270	0.3812***	0.1154**
Executive Motivations for keeping employees since the COVID crisis					
Preserving valuable employee skills	9.0781	8.8095	8.5588	0.5193**	0.2507
Preserving ties to customers and clients	9.1745	8.9099	8.8118	0.3627**	0.0981
Preserve a culture of teamwork	8.9902	8.7605	8.5364	0.4538**	0.2242
Preserve employee commitment/loyalty	9.0563	8.9561	8.7081	0.3482	0.2481
Preserve a sense of ownership of firm	8.9243	8.3793	8.1233	0.8009***	0.2560
Combined motive factor	45.2232	43.8154	42.7383	2.4849***	1.0771

Notes: Majority-ESOP indicates that a company offers an ESOP to its employees and more than 50% of the company is owned by the ESOP. Minority-ESOP indicates that a company offers an ESOP to its employees and less than 50% of the company is owned by the ESOP. Non-ESOP indicates that a company does not offer an ESOP. Sample weights are applied in all means. Essential business is a dummy variable indicating whether a company has been declared an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expect to receive financial assistance from the federal government. Financial assistance programs include Paycheck Protection Program, Economic Injury Disaster Loans, SBA Loan Forgiveness, or other programs from the federal government. Incentive pay sharing indicates the percent of a company's employees who are eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company.

Table 2. Estimated Coefficients on ESOP and Other Key Variables for Percent Change in Total Employment (standard errors in parenthesis)

Dependent Variable: Percent Change in Total Employment				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	0.153*** (0.028)	0.123*** (0.027)	0.068** (0.031)	0.063** (0.032)
Minority-ESOP	0.018 (0.039)	-0.003 (0.037)	-0.031 (0.036)	-0.033 (0.036)
Essential Business		0.115*** (0.035)	0.085*** (0.031)	0.085*** (0.031)
Financial Assistance		0.010 (0.031)	0.022 (0.029)	0.022 (0.029)
Incentive Pay Sharing			0.133*** (0.034)	0.127*** (0.033)
Motive Factor				0.003* (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	701	701	690	690
Y Mean	-0.14	-0.14	-0.14	-0.14
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	0.170*** (0.025)	0.142*** (0.024)	0.087*** (0.029)	0.080*** (0.030)
Essential Business		0.111*** (0.034)	0.083*** (0.031)	0.083*** (0.031)
Financial Assistance		0.007 (0.030)	0.018 (0.029)	0.018 (0.029)
Incentive Pay Sharing			0.125*** (0.034)	0.121*** (0.034)
Motive Factor				0.003* (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	699	699	690	690
Y Mean	-0.14	-0.14	-0.14	-0.14

Notes: The reference group for employee ownership is Non-ESOP firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the OVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3. Estimated Coefficients on ESOP and Other Key Variables for Percent Change in Total Employment, White-Collar and Blue-Collar Jobs (standard errors in parenthesis)

Dependent Variable: Percent Change in Total Employment						
	(1) White- Collar	(2) Blue- Collar	(3) White- Collar	(4) Blue- Collar	(5) White- Collar	(6) Blue- Collar
Panel A. ESOP measured by Majority or Minority Status						
Majority-ESOP	0.094*** (0.024)	0.141*** (0.031)	0.056** (0.023)	0.095*** (0.029)	0.016 (0.026)	0.055 (0.034)
Minority-ESOP	-0.033 (0.037)	0.033 (0.039)	-0.063* (0.035)	-0.003 (0.033)	-0.076** (0.035)	-0.026 (0.032)
Essential Business			0.067** (0.032)	0.130*** (0.039)	0.048 (0.029)	0.104*** (0.037)
Financial Assistance			0.032 (0.029)	0.021 (0.034)	0.039 (0.029)	0.031 (0.034)
Motive Factor			0.003** (0.002)	0.003 (0.002)	0.003** (0.001)	0.002 (0.002)
Incentive Pay Sharing					0.110*** (0.029)	0.102*** (0.038)
#Employees, Region, Industry	No	No	Yes	Yes	Yes	Yes
N	661	649	661	649	653	642
Y Mean	-0.11	-0.15	-0.11	-0.15	-0.11	-0.15
Panel B. ESOP measured by % ESOP Ownership						
Percent Owned by ESOP	0.110*** (0.021)	0.158*** (0.027)	0.075*** (0.020)	0.115*** (0.026)	0.033 (0.025)	0.075** (0.033)
Essential Business			0.061* (0.032)	0.126*** (0.038)	0.044 (0.030)	0.101*** (0.037)
Financial Assistance			0.027 (0.030)	0.017 (0.034)	0.034 (0.029)	0.027 (0.034)
Motive Factor			0.003** (0.002)	0.002 (0.002)	0.003** (0.001)	0.002 (0.002)
Incentive Pay Sharing					0.106*** (0.030)	0.093** (0.039)
#Employees, Region, Industry	No	No	Yes	Yes	Yes	Yes
N	660	649	660	649	653	642
Y Mean	-0.11	-0.15	-0.11	-0.15	-0.11	-0.15

Notes: White-collar jobs include executive/senior level officials and managers, first/mid-level officials and managers, and professionals. Blue-collar jobs include technicians, sales workers, administrative support workers, craft workers, operatives, laborers and helpers, and service workers. Modest changes in definition of white/blue collar jobs yield similar results (See Appendix A2). The reference group for employee ownership is non-ESOP firm that does not offer ESOP to employees. Majority-ESOP indicates that a company offers an ESOP to its employees and more than 50% of the company is owned by the ESOP. Minority-ESOP indicates that a company offers an ESOP to its employees and less than 50% of the company is owned by the ESOP. Percent Owned by ESOP the percent of a company owned by the ESOP, from 0% to maximum of 100%. Essential business is a dummy variable indicating whether a company has been declared an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expect to receive financial assistance from the federal government. Financial assistance programs include Paycheck Protection Program (PPP), Economic Injury Disaster Loans (EIDL), SBA Loan Forgiveness, or other programs from the federal government. Incentive pay sharing indicates the percent of a company's employees who are eligible for profit-sharing, gain sharing, or group bonuses. Motive factor (scale 0 to 50) is the combination of executive reports on importance company assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. Specifications (3) to (6) include dummy variables for company size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4. Estimated Coefficients on ESOP and Other Variables for Change in WFH Employment Relative to Total Employment in Jan 2020 (standard errors in parenthesis)

Dependent Variable: Change in Number of WFH Employment Relative to total January Employment				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	0.105*** (0.039)	0.139*** (0.037)	0.088** (0.044)	0.085* (0.044)
Minority-ESOP	0.064 (0.046)	0.085* (0.045)	0.059 (0.045)	0.058 (0.045)
Essential Business		-0.095** (0.044)	-0.113** (0.045)	-0.113** (0.045)
Financial Assistance		0.042 (0.034)	0.052 (0.035)	0.052 (0.035)
Incentive Pay Sharing			0.122*** (0.047)	0.121*** (0.047)
Motive Factor				0.001 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	649	649	641	641
Y Mean	0.19	0.19	0.19	0.19
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	0.109*** (0.042)	0.140*** (0.039)	0.087* (0.048)	0.084* (0.048)
Essential Business		-0.091** (0.044)	-0.110** (0.045)	-0.109** (0.046)
Financial Assistance		0.044 (0.035)	0.054 (0.036)	0.054 (0.036)
Incentive Pay Sharing			0.120** (0.048)	0.119** (0.048)
Motive Factor				0.001 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	649	649	641	641
Y Mean	0.19	0.19	0.19	0.19

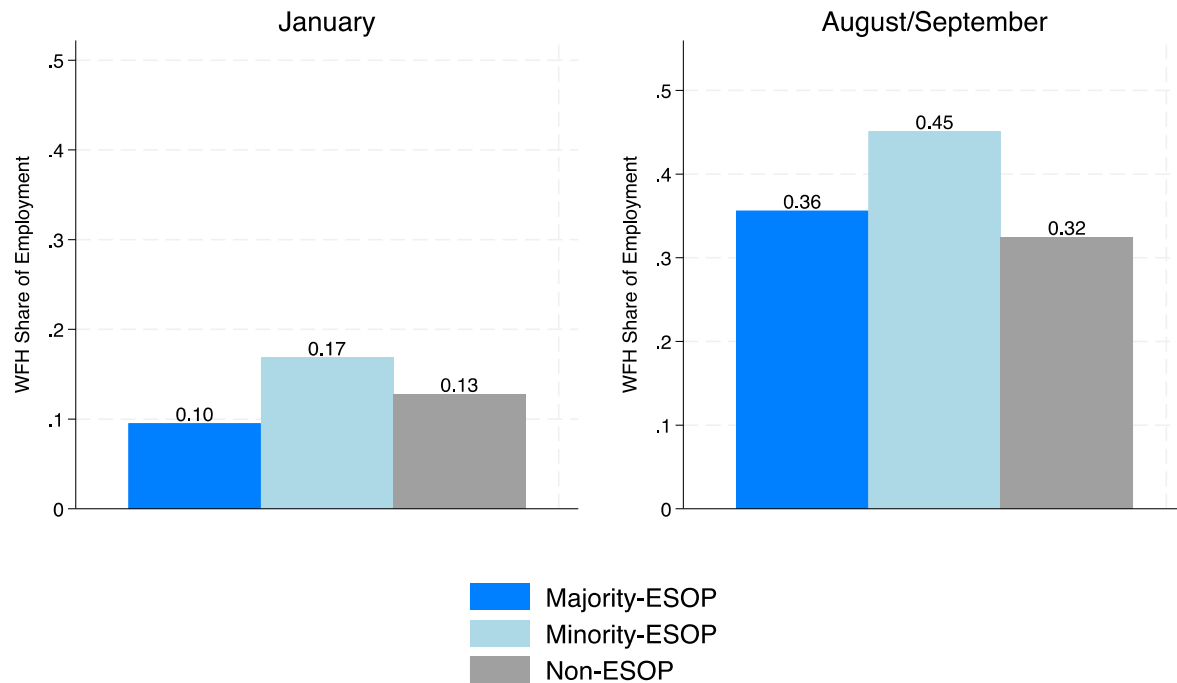
Notes: The reference group for employee ownership is Non-ESOP firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the OVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5. Estimated Coefficients on ESOP and Other Variables for Time of Sending Workers to WFH in Pandemic (standard errors in parenthesis)

Dependent Variable: Month of sending workers home for WFH				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	-0.193 (0.125)	-0.291** (0.122)	-0.301** (0.139)	-0.296** (0.140)
Minority-ESOP	-0.008 (0.129)	-0.065 (0.119)	-0.066 (0.123)	-0.069 (0.124)
Essential Business		0.050 (0.114)	0.036 (0.120)	0.040 (0.122)
Financial Assistance		0.215** (0.099)	0.216** (0.100)	0.221** (0.102)
Incentive Pay Sharing			0.048 (0.137)	0.082 (0.132)
Motive Factor				-0.010 (0.007)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	520	520	513	513
Y Mean	1.42	1.42	1.42	1.42
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	-0.226* (0.117)	-0.327*** (0.115)	-0.355*** (0.132)	-0.343** (0.135)
Essential Business		0.058 (0.115)	0.042 (0.121)	0.045 (0.123)
Financial Assistance		0.224** (0.099)	0.227** (0.101)	0.231** (0.102)
Incentive Pay Sharing			0.080 (0.137)	0.109 (0.133)
Motive Factor				-0.010 (0.007)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	519	519	513	513
Y Mean	1.42	1.42	1.42	1.42

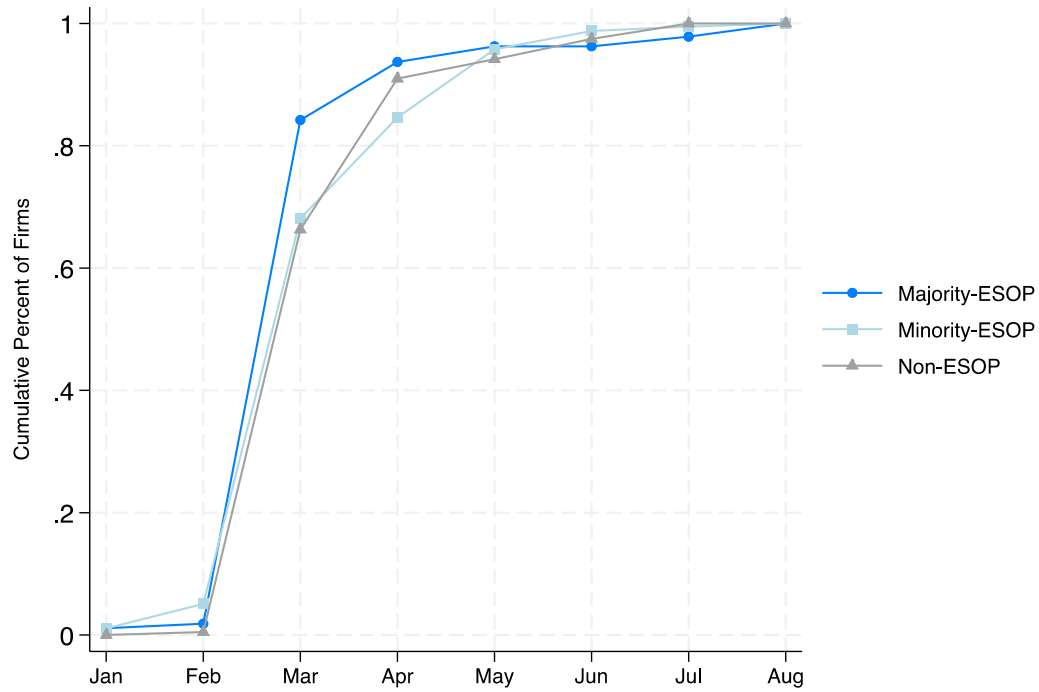
Notes: Dependent variable is based on question "If you sent workers to work at home due to the COVID crisis, on what date (approximately) did you start sending them to work at home?". Sample include firms that sent workers home, with 0 in February, 1 in March, 2 in April, etc. The reference group for employee ownership is Non-ESOP firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the OVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1. Change in WFH Share of Workers, from January 2020 to August/September 2020



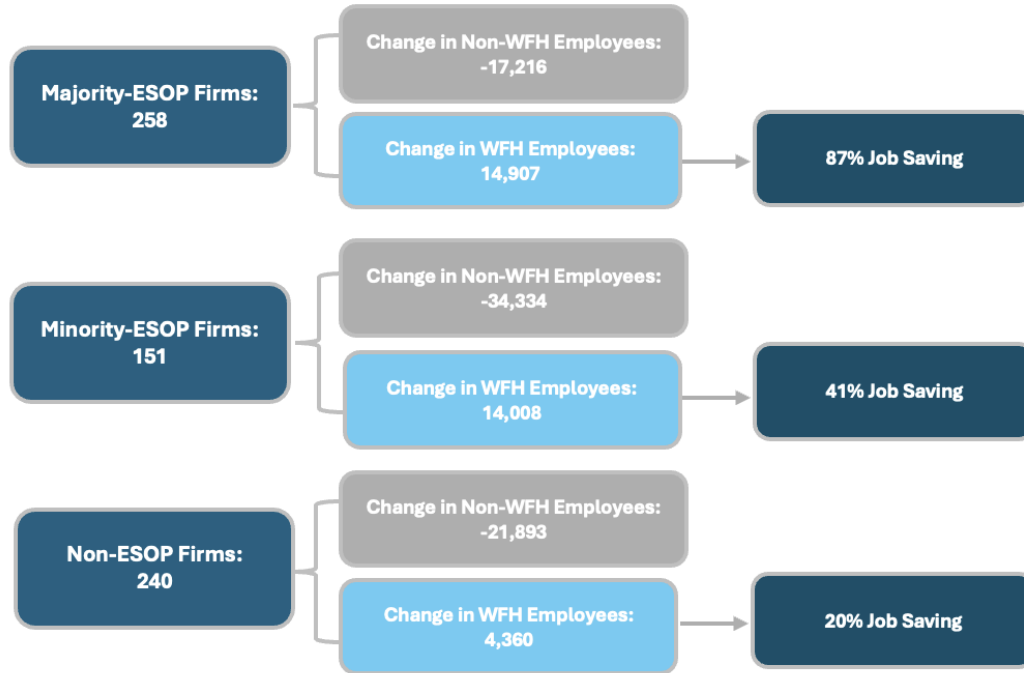
Notes: Majority-ESOP indicates that a company offers an ESOP to its employees and more than 50% of the company is owned by the ESOP. Minority-ESOP indicates that a company offers an ESOP to its employees and less than 50% of the company is owned by the ESOP. Non-ESOP indicates that a company does not offer an ESOP. WFH share of employment is the number WFH workers relative to total employment. Calculations limited to firms with consistent numbers of WFH and total employment, which removes 49 firms from the data set (See Appendix Tables A4 to A6).

Figure 2. Cumulative Percent of Firms Who Created WFH Employment for Workers, by Month of First Sending Workers to WFH in the 2020 COVID Shock



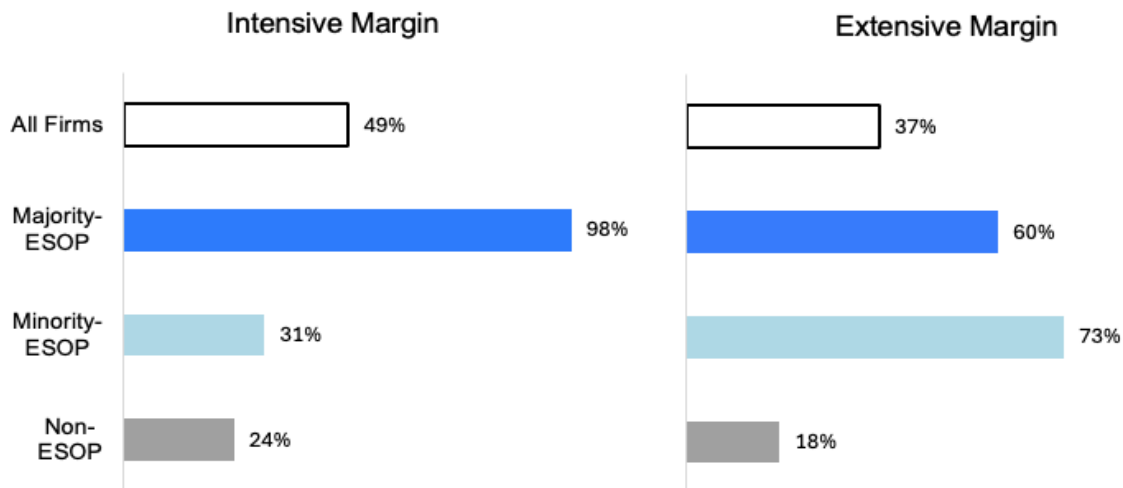
Notes: Majority-ESOP indicates that a company offers an ESOP to its employees and more than 50% of the company is owned by the ESOP. Minority-ESOP indicates that a company offers an ESOP to its employees and less than 50% of the company is owned by the ESOP. Non-ESOP indicates that a company does not offer an ESOP.

Figure 3. Changes in Absolute Number of Non-WFH Employees and WFH Employees in Firms, by ESOP Status from January 2020 to August/September 2020



Notes: Diagram shows the number of firms and the number of non-WFH Employees and WFH Employees, for spring and summer Covid-19 shock, respectively. Calculations limited to firms with consistent numbers of WFH and total employment, which removes 49 firms from the data set (See Appendix Tables A4 to A6).

Figure 4. Percentage of Jobs Saved by WFH, Firms on the Intensive Margin vs Firms on the Extensive Margin, for All Firms and Firms by ESOP Status from January 2020 to August/September 2020



Notes: Figure shows the percentage of jobs saved by WFH for firms on the intensive and extensive margin of WFH. Intensive is for firms that had WFH workers in January 2020, and extensive is for firms that did not have WFH workers in January 2020. Calculations limited to firms with consistent numbers of WFH and total employment, which removes 49 firms from the data set (See Appendix Table A7).

Appendix Tables

Appendix Table A1 replicates the results in Table 2 by including executive motive factors separately as single right-hand side variables and as a group of right-hand side variables. While preserving valuable employee skills and preserving customers and clients enter positively as single variables, column 6 shows that they lose statistical significance when introduced with the other variables, all of whom have weak insignificant effects on the change in total employment

Table A1. Change in Total Employment with Separate Motive Factors

Dependent Variable: Percent Change in Total Employment						
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. ESOP measured by Majority or Minority Status						
Majority-ESOP	0.063** (0.032)	0.064** (0.032)	0.066** (0.031)	0.066** (0.031)	0.065** (0.032)	0.063* (0.033)
Minority-ESOP	-0.033 (0.037)	-0.033 (0.036)	-0.032 (0.036)	-0.033 (0.037)	-0.031 (0.035)	-0.033 (0.037)
Essential Business	0.087*** (0.031)	0.089*** (0.031)	0.084*** (0.031)	0.086*** (0.031)	0.083*** (0.031)	0.090*** (0.031)
Financial Assistance	0.021 (0.029)	0.021 (0.029)	0.022 (0.029)	0.024 (0.029)	0.021 (0.029)	0.020 (0.030)
Incentive Pay Sharing	0.129*** (0.033)	0.126*** (0.033)	0.131*** (0.034)	0.128*** (0.033)	0.131*** (0.033)	0.127*** (0.033)
Preserving valuable employee skills	0.014* (0.008)					0.010 (0.010)
Preserving ties to customers and clients		0.020** (0.009)				0.017 (0.011)
Preserve a culture of teamwork			0.008 (0.006)			-0.001 (0.011)
Preserve employee commitment/loyalty				0.010 (0.008)		-0.003 (0.016)
Preserve a sense of ownership of firm					0.006 (0.007)	-0.002 (0.010)
#Employees, Region, Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	690	690	690	690	690	690
Y Mean	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14
Panel B. ESOP measured by % ESOP Ownership						
Percent Owned by ESOP	0.079*** (0.030)	0.081*** (0.030)	0.084*** (0.029)	0.084*** (0.029)	0.082*** (0.030)	0.080** (0.032)
Essential Business	0.085*** (0.031)	0.087*** (0.031)	0.082*** (0.031)	0.083*** (0.031)	0.081*** (0.031)	0.088*** (0.031)
Financial Assistance	0.017 (0.029)	0.017 (0.029)	0.018 (0.029)	0.020 (0.029)	0.018 (0.029)	0.016 (0.030)
Incentive Pay Sharing	0.123*** (0.034)	0.120*** (0.034)	0.123*** (0.034)	0.121*** (0.034)	0.124*** (0.034)	0.121*** (0.034)
Preserving valuable employee skills	0.013* (0.008)					0.009 (0.011)
Preserving ties to customers and clients		0.019** (0.009)				0.017 (0.011)
Preserve a culture of teamwork			0.008 (0.006)			-0.001 (0.011)
Preserve employee commitment/loyalty				0.009 (0.008)		-0.004 (0.016)
Preserve a sense of ownership of firm					0.006 (0.007)	-0.002 (0.011)
#Employees, Region, Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	690	690	690	690	690	690
Y Mean	-0.14	-0.14	-0.14	-0.14	-0.14	-0.14

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned by ESOP is a continuous variable that measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A2 table examines the effect of alternative definitions of white- and blue-collar jobs to those in table 2 in the text. Here, white-collar jobs include executive/senior level officials and managers, first/mid-level officials and managers, professionals, sales workers, and administrative support workers. Blue-collar jobs include technicians, craft workers, operatives, laborers and helpers, and service workers. The results are analogous to those in table 3.

Table A2. Analysis with Different Definitions of White-Collar and Blue-Collar Jobs

	Dependent Variable: Percent Change in Total Employment					
	(1) White- Collar	(2) Blue- Collar	(3) White- Collar	(4) Blue- Collar	(5) White- Collar	(6) Blue- Collar
Panel A. ESOP measured by Majority or Minority Status						
Majority-ESOP	0.118*** (0.025)	0.125*** (0.037)	0.082*** (0.024)	0.071* (0.037)	0.043 (0.028)	0.019 (0.043)
Minority-ESOP	-0.013 (0.039)	0.031 (0.041)	-0.040 (0.036)	-0.005 (0.037)	-0.055 (0.035)	-0.027 (0.037)
Essential Business			0.104*** (0.032)	0.142*** (0.047)	0.089*** (0.030)	0.106** (0.042)
Financial Assistance			0.015 (0.030)	0.024 (0.041)	0.021 (0.030)	0.036 (0.040)
Motive Factor			0.003* (0.002)	0.002 (0.003)	0.002 (0.002)	0.002 (0.002)
Incentive Pay Sharing					0.111*** (0.031)	0.137*** (0.044)
#Employees, Region, Industry	No	No	Yes	Yes	Yes	Yes
N	663	600	663	600	655	593
Y Mean	-0.13	-0.16	-0.13	-0.16	-0.13	-0.16
Panel B. ESOP measured by % ESOP Ownership						
Percent Owned by ESOP	0.136*** (0.022)	0.145*** (0.031)	0.104*** (0.021)	0.092*** (0.032)	0.063** (0.026)	0.037 (0.039)
Essential Business			0.098*** (0.032)	0.137*** (0.046)	0.085*** (0.030)	0.103** (0.042)
Financial Assistance			0.011 (0.030)	0.020 (0.040)	0.016 (0.030)	0.033 (0.039)
Motive Factor			0.003 (0.002)	0.002 (0.003)	0.002 (0.002)	0.001 (0.002)
Incentive Pay Sharing					0.105*** (0.032)	0.131*** (0.044)
#Employees, Region, Industry	No	No	Yes	Yes	Yes	Yes
N	662	600	662	600	655	593
Y Mean	-0.13	-0.16	-0.13	-0.16	-0.13	-0.16

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned by ESOP is a continuous variable that measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A3 replicates the results in Table 4 by including executive motive factors separately as single right-hand side variables and as a group of right-hand side variables. None of the variables entered singly have any noticeable effect on the change in WFH. The column 6 regression shows a weak *negative* effect on preserving a sense of ownership, suggesting that some of the executives might have favored keeping workers at the workplace because they feared that WFH would reduce the sense of ownership – a plausible possibility worth exploring with a data set that contrasted workers’ sense of ownership in the same ESOP firm or other firms by whether they worked at home or at a workplace.

Table A3. Change in WFH with Separate Motive Factors

Dependent Variable: Change in Number of WFH Employment Relative to total January Employment						
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. ESOP measured by Majority or Minority Status						
Majority-ESOP	0.082*	0.084*	0.089**	0.086*	0.094**	0.092**
	(0.044)	(0.044)	(0.044)	(0.044)	(0.045)	(0.044)
Minority-ESOP	0.057	0.058	0.059	0.058	0.062	0.063
	(0.045)	(0.045)	(0.045)	(0.045)	(0.045)	(0.046)
Essential Business	-0.112**	-0.110**	-0.113**	-0.113**	-0.111**	-0.104**
	(0.045)	(0.045)	(0.045)	(0.045)	(0.044)	(0.044)
Financial Assistance	0.052	0.051	0.052	0.053	0.051	0.049
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)	(0.034)
Incentive Pay Sharing	0.121***	0.118**	0.122***	0.120***	0.122***	0.115**
	(0.047)	(0.046)	(0.047)	(0.046)	(0.046)	(0.046)
Preserving valuable employee skills	0.011					0.016
	(0.011)					(0.020)
Preserving ties to customers and clients		0.015				0.016
		(0.013)				(0.017)
Preserve a culture of teamwork			-0.000			-0.003
			(0.008)			(0.015)
Preserve employee commitment/loyalty				0.005		0.004
				(0.008)		(0.021)
Preserve a sense of ownership of firm					-0.006	-0.021*
					(0.007)	(0.011)
#Employees, Region, Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	641	641	641	641	641	641
Y Mean	0.19	0.19	0.19	0.19	0.19	0.19
Panel B. ESOP measured by % ESOP Ownership						
Percent Owned by ESOP	0.080*	0.082*	0.087*	0.084*	0.094*	0.091*
	(0.048)	(0.048)	(0.048)	(0.048)	(0.049)	(0.048)
Essential Business	-0.109**	-0.106**	-0.110**	-0.109**	-0.108**	-0.100**
	(0.045)	(0.046)	(0.045)	(0.045)	(0.045)	(0.045)
Financial Assistance	0.054	0.053	0.054	0.055	0.053	0.051
	(0.036)	(0.035)	(0.036)	(0.036)	(0.036)	(0.035)
Incentive Pay Sharing	0.120**	0.116**	0.120**	0.118**	0.119**	0.113**
	(0.049)	(0.048)	(0.048)	(0.048)	(0.048)	(0.047)
Preserving valuable employee skills	0.011					0.016
	(0.011)					(0.020)
Preserving ties to customers and clients		0.015				0.015
		(0.013)				(0.017)
Preserve a culture of teamwork			0.000			-0.002
			(0.008)			(0.015)
Preserve employee commitment/loyalty				0.005		0.004
				(0.008)		(0.021)
Preserve a sense of ownership of firm					-0.006	-0.021*
					(0.007)	(0.011)
#Employees, Region, Industry	Yes	Yes	Yes	Yes	Yes	Yes
N	641	641	641	641	641	641
Y Mean	0.19	0.19	0.19	0.19	0.19	0.19

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned by ESOP is a continuous variable that measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company’s employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A4 gives results with firms with data problems assigned smaller weights by the magnitude by which WFH exceeded total employment.

Table A4. Regressions that include all firms and down-weight firms that reported more WFH workers than total employees

Dependent Variable: Change in Number of WFH Employment Relative to total January Employment				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	0.109*** (0.039)	0.143*** (0.038)	0.087** (0.042)	0.084** (0.043)
Minority-ESOP	0.059 (0.043)	0.069 (0.043)	0.042 (0.042)	0.041 (0.042)
Essential Business		-0.096** (0.042)	-0.121*** (0.043)	-0.121*** (0.043)
Financial Assistance		0.037 (0.035)	0.047 (0.036)	0.047 (0.036)
Incentive Pay Sharing			0.143*** (0.045)	0.139*** (0.045)
Motive Factor				0.002 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	698	698	689	689
Y Mean	0.19	0.19	0.19	0.19
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	0.118*** (0.042)	0.152*** (0.041)	0.093* (0.048)	0.089* (0.048)
Essential Business		-0.097** (0.042)	-0.121*** (0.043)	-0.120*** (0.043)
Financial Assistance		0.037 (0.035)	0.047 (0.036)	0.047 (0.036)
Incentive Pay Sharing			0.137*** (0.047)	0.134*** (0.047)
Motive Factor				0.002 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	698	698	689	689
Y Mean	0.19	0.19	0.19	0.19

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer an ESOP. Majority-ESOP indicates that firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that firm offers an ESOP to its employees and less than 50% of the company is owned by the ESOP. Percent Owned by ESOP measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a company has been declared an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for whether firm received or expected to receive financial assistance from the federal government. Financial assistance programs include Paycheck Protection Program, Economic Injury Disaster Loans, SBA Loan Forgiveness, or other programs offered in crisis. Incentive pay sharing indicates the percent of a company's employees who are eligible for profit-sharing, gain sharing, or group bonuses. Motive factor (scale 0 to 50) is the combination of responses executives gave to questions about the importance level in maintaining employment to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. Specifications (2) to (4) include dummy variables for company size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A5 gives results in which data inconsistency is dealt with a dummy variable for firms reporting more WFH workers than total employment

Table A5. Regressions that include all firms with a dummy variable for those firms that reported more WFH workers than total employees

Dependent Variable: Change in Number of WFH Employment Relative to total January Employment				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	0.168** (0.077)	0.223** (0.094)	0.133* (0.071)	0.124* (0.068)
Minority-ESOP	0.023 (0.061)	0.020 (0.069)	-0.022 (0.074)	-0.027 (0.075)
Indicator for Data Inconsistent Firms	0.502 (0.412)	0.418 (0.350)	0.460 (0.359)	0.470 (0.361)
Essential Business		-0.150** (0.072)	-0.182** (0.078)	-0.181** (0.077)
Financial Assistance		-0.032 (0.091)	-0.017 (0.086)	-0.018 (0.086)
Incentive Pay Sharing			0.230** (0.092)	0.222** (0.087)
Motive Factor				0.005 (0.004)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	698	698	689	689
Y Mean	0.22	0.22	0.22	0.22
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	0.197** (0.095)	0.260** (0.117)	0.169* (0.094)	0.158* (0.089)
Indicator for Data Inconsistent Firms	0.504 (0.404)	0.418 (0.340)	0.450 (0.348)	0.459 (0.351)
Essential Business		-0.156** (0.076)	-0.186** (0.081)	-0.185** (0.080)
Financial Assistance		-0.038 (0.096)	-0.024 (0.091)	-0.024 (0.091)
Incentive Pay Sharing			0.213** (0.083)	0.207*** (0.080)
Motive Factor				0.005 (0.004)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	698	698	689	689
Y Mean	0.22	0.22	0.22	0.22

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned by ESOP is a continuous variable that measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A6 deals with the data inconsistency problem by excluding firms reporting WFH employment more than 50% higher than total employment but keeping other inconsistent data firms in the data set.

Table A6. Regressions that include firms reporting WFH employment less than 1.5 times of total employees but eliminating those with more than 1.5 times total employment

Dependent Variable: Change in Number of WFH Employment Relative to total January Employment				
	(1)	(2)	(3)	(4)
Panel A. ESOP measured by Majority or Minority Status				
Majority-ESOP	0.097** (0.038)	0.131*** (0.036)	0.082** (0.041)	0.079* (0.042)
Minority-ESOP	0.064 (0.045)	0.083* (0.045)	0.057 (0.044)	0.056 (0.044)
Essential Business		-0.100** (0.042)	-0.120*** (0.043)	-0.120*** (0.043)
Financial Assistance		0.043 (0.033)	0.053 (0.035)	0.054 (0.035)
Incentive Pay Sharing			0.126*** (0.045)	0.124*** (0.045)
Motive Factor				0.001 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	670	670	662	662
Y Mean	0.19	0.19	0.19	0.19
Panel B. ESOP measured by % ESOP Ownership				
Percent Owned by ESOP	0.103** (0.041)	0.136*** (0.039)	0.083* (0.046)	0.080* (0.047)
Essential Business		-0.098** (0.042)	-0.118*** (0.044)	-0.118*** (0.044)
Financial Assistance		0.044 (0.034)	0.054 (0.035)	0.054 (0.035)
Incentive Pay Sharing			0.122*** (0.047)	0.121** (0.047)
Motive Factor				0.001 (0.002)
#Employees, Region, Industry	No	Yes	Yes	Yes
N	670	670	662	662
Y Mean	0.19	0.19	0.19	0.19

Notes: The reference group for employee ownership is Non-ESOP – a firm that does not offer workers ESOP. Majority-ESOP indicates that a firm offers an ESOP to its employees and more than 50% of the firm is owned by the ESOP. Minority-ESOP indicates that a firm offers an ESOP to its employees and less than 50% of the firm is owned by the ESOP. Percent Owned by ESOP is a continuous variable that measures the percent of a company owned by the ESOP. Essential business is a dummy variable indicating whether a firm is an essential business entitled to stay open during the COVID crisis. Financial assistance is an indicator for having received or expecting to receive financial assistance from Paycheck Protection Program, Economic Injury Disaster Loans SBA Loan Forgiveness, or other programs to help firms survive crisis. Incentive pay sharing is % of a company's employees eligible for profit-sharing, gain sharing, or group bonuses. Motive factors (scale 0 to 10) indicate a series of executive concerns that count the importance level that a firm assigned to preserving valuable employee skills, ties to customers and clients, a culture of teamwork, employee commitment and loyalty, and a sense of ownership in the company. All specifications include dummy variables for firm size, region, and industry. Sample weights are applied. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A7 shows the number of firms and the number of non-WFH employees, WFH employees, and total employment on the intensive and extensive margin, for spring and summer Covid-19 shock, respectively.

Table A7. Number of Employee Changes on the Intensive and Extensive Margin of WFH

Intensive Margin Firms – with WFH Workers in 2020												
Group and # firms (in parenthesis)	All (356)			Majority ESOP (127)			Minority ESOP (106)			NO ESOP (123)		
	Non-WFH	WFH	Total	Non-WFH	WFH	Total	Non-WFH	WFH	Total	Non-WFH	WFH	Total
January 2020	158,622	30,634	189,256	27,055	4,920	31,975	121,662	17,696	139,358	32,537	10,130	42,667
Aug/Sept 2020	117,996	50,552	168,548	14,939	16,760	31,700	95,517	25,735	121,252	25,293	11,868	37,161
Change	-40,625	19,918	-20,708	-12,115	11,840	-275	-26,145	8,039	-18,106	-7,244	1,738	-5,506
Extensive Margin Firms – with No WFH Workers in 2020												
Group and # firms (in parenthesis)	All (293)			Majority ESOP (131)			Minority ESOP (45)			NO ESOP (117)		
	Non-WFH	WFH	Total	Non-WFH	WFH	Total	Non-WFH	WFH	Total	Non-WFH	WFH	Total
January 2020	90,013	0	90,013	27,749	0	27,749	19,517	0	19,517	40,173	0	40,173
Aug/Sept 2020	60,373	11,020	71,392	22,649	3,067	25,715	11,328	5,969	17,297	25,524	2,622	28,146
Change	-29,640	11,020	-18,621	-5,101	3,067	-2,034	-8,189	5,969	-2,220	-14,649	2,622	-12,027

Notes: Intensive is for firms that had WFH workers in January 2020, and extensive is for firms that did not have WFH workers in January 2020. Calculations limited to firms with consistent numbers of WFH and total employment, which removes 49 firms from the data set (See Appendix Tables A4 to A6).