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Information Frictions and Access to the Paycheck Protection Program

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Abstract

The Paycheck Protection Program (PPP) extended over 650 billion dollars of forgivable loans in an unprecedented effort to support small businesses affected by the COVID-19 crisis. This paper provides evidence that information frictions and the "first-come, first-served" design of the PPP program skewed its resources towards larger firms and may have permanently reduced it's effectiveness. Using new daily survey data on small businesses in the U.S., we show that the smallest businesses were less aware of the PPP and less likely to apply. If they did apply, the smallest businesses applied later, faced longer processing times, and were less likely to have their application approved. These frictions likely mattered, as businesses that received aid report fewer layoffs, higher employment, and improved expectations about the future.

Keywords: *COVID-19, small business, information frictions, CARES Act*

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1 Introduction

The coronavirus epidemic has had a broad impact on public health in the United States, with more than 1,600,000 cases and 98,000 deaths reported so far (Center for Disease Control, 2020). As a response, most states have introduced strong social distancing measures, including stay-at-home orders and closure of non-essential businesses. Small and medium enterprises are likely to be severely affected by these measures, as they tend to be more concentrated in sectors directly affected (e.g. retail and services) and are typically more credit constrained than larger businesses.[1] As a response to the crisis, on March 27th the U.S. Congress passed *The Coronavirus Aid, Relief, and Economic Security (CARES) Act*, which included 349 billion dollars (later expanded to 669 billion dollars) to fund the Paycheck Protection Program (PPP). The PPP was designed to support small businesses by extending government-backed loans that can be partially or fully forgiven if certain conditions are met.

This paper provides evidence that, despite the unprecedented amount of aid, the combination of information frictions and PPP's "first-come, first-served" design disadvantaged the smallest businesses. This disadvantage in getting aid likely has large implications. We find that businesses that received aid report fewer layoffs and improved expectations about their businesses survival and recovery, with smaller firms showing the largest improvements. However, our results also show that the smallest businesses were less aware of the PPP and less likely to apply. Among businesses that applied for the PPP, smaller businesses applied later, faced longer processing times, and were less likely to have their applications approved. Over the same period, firms' expectations about the future fell sharply and layoffs increased. These outcomes might be difficult to reverse. In particular, the CARES Act also increased unemployment insurance benefits by $600 per week, which lowers the incentives for employees to return to work and makes layoffs more difficult to reverse in the short run.[2]

Our data come from daily surveys that began on March 28th, the day after the CARES Act was passed, and continued through May 16th. Early respondents were also asked to complete follow-up surveys that began on April 18th, the day that the PPP exhausted its initial funding, and continued through May 16th. Survey participants were recruited via social media ads targeted at micro, small, and medium sized business owners across the United States that had

[1] These businesses make up the majority of companies in the U.S., and are responsible for a substantial fraction of employment. Establishments with up to 20 employees correspond to 68.6% of establishments and 16.4% of employment (2017 Census of US Businesses).

[2] This is particularly important for the PPP, as full loan forgiveness requires firms to maintain payroll at pre-crisis levels during the eight weeks after the initiation of the loan. Moreover, since payroll is the main forgivable component of the loan, this could further reduce the attractiveness of future rounds of the program.

been affected by COVID-19. The sample includes data from more than 14,000 small business owners in the U.S., with follow-up surveys for almost 3,000 small business owners. The surveys collected information on initial firm size, layoffs, beliefs about businesses' future prospects, and their awareness of existing government relief programs that could help their firms. In addition, we collected information about their experiences seeking aid, the current status of their applications, and difficulties they faced during the application process.

We document four key facts. First, respondents' expectations about the future are generally negative and deteriorated over the three to four weeks following the passing of the CARES Act. In the first week of the survey, 64% of respondents believed their businesses would recover within two years, but this number steadily decreases until late April, when it levels out or slightly reverses. The latter movement corresponds to the period of time when it was clear that the PPP would continue to be funded. However, after a short period, most outcomes continue to deteriorate. In the last week of the survey, only 48% of firms report that they expect their businesses to recover within two years. We observe the same patterns for the proportion of respondents who think their businesses will ever recover. These results hold when controlling for a rich set of covariates and when using changes over time within firm.

Second, the smallest businesses were slower to become aware of government programs. The day after the CARES Act was passed (March 28th), businesses with fewer than 10 full-time equivalent (FTE) employees were much less likely to know about any government programs designed to support small businesses when compared to larger firms with 10 to 50 employees. Despite large initial information differences, the proportion of businesses with 5 to 9.5 FTE employees that knew about government programs rapidly increased, reaching levels similar to larger firms a day or two after the program started accepting applications. In contrast, around 68% of businesses with fewer than five employees reported knowing about government programs that could help their business when PPP applications were open, and this share remained below 80% through April 16th, when the PPP exhausted its initial funding. Given the "first-come, first-served" nature of the program, information asymmetries early on may have resulted in the smaller firms missing out on the first round of PPP loans.

Third, the smallest firms were less likely to apply for the PPP and, conditional on applying, they applied later, waited longer for their application to be approved, and were less likely to get approval. Firms with 0 to 4.5 FTE employees were 23 percentage points less likely to apply for PPP loans compared to firms with 10 to 50 employees. Conditional on applying, businesses with fewer than five employees applied two days later, and were 25 percentage points less likely to

have received approval. Conditional on receiving a PPP loan, businesses with 0 to 4.5 employees waited two days longer for their application to be approved.

Fourth, businesses that received a PPP loan report more employees, lower probabilities of closure or bankruptcy, and higher probabilities of recovering in the next two years. Conditional on applying for a PPP loan, those that are approved are, on average, 12 percentage points more likely to report that they will recover in the next two years, and reported probabilities of bankruptcy or closure that are 11 percentage points lower. They are also 9 percentage points less likely to report having fewer workers than in January. All of these effects are stronger for smaller businesses (with fewer than 10 employees). Taken together, the four facts indicate that information frictions hindered the ability of small businesses to access the PPP resources, which likely had real negative consequences for these businesses.

Related literature

This paper contributes to a small but rapidly growing literature on the economic impacts of COVID-19. Closely related work by Bartik et al. (2020) surveys 5,800 U.S. small businesses through Alignable, a network-based platform for small businesses. Their survey reached somewhat larger businesses and found that the majority planned to seek funds through the CARES Act, which is consistent with our findings for the larger small businesses (over 5 employees) in our sample. Granja et al. (2020) use administrative data on the distribution of PPP loans and high-frequency micro-level employment data to evaluate how well the CARES Act targeted businesses in need. They conclude that funds flowed to areas that were less impacted by the economic crisis in terms of declines in hours worked or business shutdowns.

Other work has focused on the effects of COVID-19 on employment. Adams et al. (2020) use real-time survey evidence to analyze the impacts of the COVID-19 containment measures on workers in the U.S. and the UK. Most relevant for the results discussed in this paper, they document substantial negative effects on workers in the U.S. in their first wave of data (collected on March 24-25, 2020), which is consistent with the strong effects on lay-offs that we document here.[3] Kahn et al. (2020) show that job vacancies fell more than 30% compared to the beginning of 2020 and align closely with the number of new UI claims filed across the U.S.[4]

The paper is also related to a large literature studying how broadly defined information

[3] As part of their main analysis, the authors document substantial inequality in the observed effects, as workers without a college degree and women are more severely affected. Beland et al. (2020) find similar results for the US using data from the Current Population Survey (CPS).

[4] See also Barrero et al. (2020), which discusses the reallocation effects of the shock, and specifically discusses the impacts of increased unemployment insurance benefits.

frictions, behavioral biases, and transaction costs can affect the take-up and targeting of social programs. There is theory and evidence that ordeal mechanisms or transaction costs associated with applying for aid can improve targeting of social programs (Besley and Coate, 1992). Yet, there is also ample evidence that even individuals who would greatly benefit from government assistance programs may not take advantage of them due to a lack of information, sophistication, or ability to optimize. For example Bettinger et al. (2012) provide evidence that low income students are more likely to access financial aid and attend college when they receive limited assistance with filling out FASFA applications. Bhargava and Manoli (2015) shows that low awareness and understanding of EITC benefits lead to lower take-up. Finkelstein and Notowidigdo (2019) similarly shows that improving information and reducing transaction costs can lead to higher take-up in the case of food stamps, but also lead to reduced targeting.

2 Institutional Background and Data

2.1 The Paycheck Protection Program (PPP)

The Coronavirus Aid, Relief, and Economic Security (CARES) Act was passed by Congress and signed into law on March 27th, 2020. This large relief package (over USD 2 trillion) established the Paycheck Protection Program (PPP), which was aimed to provide small businesses with a temporary source of liquidity in the form of forgivable loans. These loans are designed to help cover payroll costs and additional fixed expenses during the COVID-19 pandemic.

The maximum loan amount in the program is the minimum between 2.5 times the average monthly payroll costs and ten million dollars. The interest rate on all loans is 1% and their maturity is two years. The loans are forgivable when used to cover payroll costs, mortgage interest, rent, or utilities, with the additional requirement that 75% of the total forgiven amount must be payroll. The loans do not require collateral or personal guarantees, and can be deferred for six months. To get access to these funds, firms must apply through an authorized Small Business Administration (SBA) lender.

A key aspect of the PPP is that the loans are forgiven only if the employer maintains the number of full-time employees and salary levels, or if the employees are re-hired and salary levels restored by June 30, 2020 (relative to any changes made between February 15 and April 26, 2020). If the number of employees or salary levels are reduced, the amount forgivable is also reduced.[5]

[5]More detailed information is available at `https://home.treasury.gov/policy-issues/cares/assistance-for-small-businesses`.

The PPP started accepting applications on April 3rd, and the initial funding of $349 billion was exhausted by April 16th. New legislation was signed on April 24th, which included an additional $320 billion dollars in funding for the PPP after the program reopened to applications on April 27th. Appendix A provides additional details on the PPP.

2.2 The Small Business Survey Data

We collect new survey data on small businesses in the U.S. to understand the impacts of the COVID-19 crisis, and the challenges it created. We recruited the sample of participants via social media ads targeted at small and medium sized business owners in the United States who had been affected by the COVID-19 crisis. Recruitment began on March 28th, one day after the CARES Act was passed, and we continuously received baseline responses through May 16th. The responses are distributed relatively uniformly throughout the sampling period, though there are fewer respondents in the first four days and last week of the survey. Appendix Table 3 reports the number of survey responses by day.

The core of the baseline survey contains a set of questions about firm characteristics, which include size (as measured by the number of full- and part-time employees) and the number of laid-off employees since January. The survey also asks small business owners to report their beliefs about the future. More specifically, we elicit their beliefs about the future by asking owners how many employees they expect to lay off within the next two months, if they believe their businesses will recover in the next two years, if they think their businesses will ever recover, and the probability that they will shutdown or go bankrupt within the next six months. We also measure awareness of existing state and federal programs available to help small businesses cope with the COVID-19 crisis. On April 27th, the baseline survey was expanded to include a broader set of questions, with a particular focus on respondent's access to the PPP. We ask if and when the respondent applied and about the outcome of their application. The overall baseline sample consists of 14,421 adult small business owners in the United States who completed the survey by May 16th, 2020.[6] Of those, 11,283 completed the short baseline survey and 3,138 completed the expanded baseline survey.

A follow-up survey was launched on April 19th targeting those who completed the short baseline survey. It repeated questions about employment and expectations, and included the more comprehensive set of questions used in the extended baseline survey about the PPP. The follow-up survey was completed by 2,936 of the respondents.

[6] We include responses where the respondent consented to the survey and completed at least the initial questions regarding employment in January, layoffs to date, and planned layoffs.

While we did not construct the survey to be representative of the population of firms in the U.S., the size distribution in the data is similar to the firm size distribution in the 2017 Census of U.S. Businesses, as shown in Figure 4 in the Appendix. The survey includes responses from all 50 states and the District of Columbia. The states with the most responses were New York, California, Pennsylvania, Michigan, Illinois, Florida, and Texas, but there are over 30 responses from each state (including Alaska and Hawaii). Figure 3 in the Appendix maps the distribution of survey responses across the country.

For the analysis in this paper, we restrict our sample to respondents who report having fifty or fewer FTE employees in January 2020 and who completed at least the employment portion of the survey (firms larger than 50 employees represent only 1% of respondents). Table 4 summarizes the baseline survey responses. The table shows that, on average, respondents had 4.87 FTE employees in January, though the number of employees is right skewed, with a median of 2.5. 79% of the sample expects to recover eventually, with 57% expecting to recover in the next two years. Finally, on average, awareness of government programs to help businesses was high (79%), but lower for programs specifically designed to help business cover wages of their employees (68%). The bottom panel of the table summarizes the additional outcomes from the follow-up and expanded baseline surveys. Using this subsample, 53% applied for a PPP loan and 39% of those who applied were approved.

3 Results

This section outlines four sets of results. First, we document how layoffs and expectations of small businesses evolved from March 28th to May 16th. Second, we provide evidence that the smallest businesses were substantially less informed about available government programs that could help their business, and that this gap remains large. Third, smaller businesses were less likely to apply for the PPP and, conditional on applying, they applied later, waited longer for their application to be approved, and were less likely to get approval. Fourth, we document that receiving a PPP loan is associated with a notable improvement in expectations about the future and a small increase in current employment.

3.1 Evolution of layoffs and expectations

The first set of results investigates the evolution of responses for the 50 days after the the CARES Act was passed. We chart the responses over time, which provide a repeated cross section of respondents. This provides insights into how businesses have adjusted to the disruption and

how their expectations about the future have evolved. Overall, we see that employment fell sharply in the first two weeks after the passage of the CARES Act, and has largely leveled off or slightly improved since mid-April. While employment has improved somewhat, expectations for the future have not, with a continued decline over the length of the survey.

Figure 1 summarizes the trends over time using daily survey responses. The top panel provides evidence on how employment decisions have changed for small businesses. The top left plot shows the time trend for whether businesses have laid off any workers since January while the top right figure shows the proportion of workers from January currently working. The black line is loess regression fit to the data with the grey region showing the 95% confidence interval. The blue line plots a moving average over 250 responses. The light red vertical lines show key dates: when the CARES Act was signed, when PPP applications opened to most businesses, when PPP applications opened to the self-employed and independent contractors, when the initial funding for the PPP was exhausted, and when legislation was signed to replenish PPP funds. In the first three weeks, there was an upward trend in the proportion of small businesses that have had to lay off workers – increasing by approximately 10 percentage points. The top right figure provides similar evidence by plotting the proportion of workers from January who are still employed. This figure shows a decline of more than 10 percentage points from late March through mid April. In the last three weeks, the proportion of firms that have laid off workers levels off, while the proportion of workers from January currently working changes sign and moderately increases.

While layoffs were concentrated in the first three weeks, expectations about the future declined over the entire fifty days. The bottom row of Figure 1 shows the trends for the proportion of firms that expect to recover in the next two years (left), and the proportion that expect to ever recover (right). Both expectations sharply declined by more than 10 percentage points through late April. Expectations temporarily level off before then declining further in the last two weeks of the survey.

One concern with the visual evidence presented above is that the sample of respondents may change over time. To address this concern, we provide three pieces of evidence in Appendix C. First, the composition of firm size – based on employment in January – has remained consistent across the survey. Second, we show that these trends hold when controlling for state dummies, cubic polynomials for full-time and part-time employment in January, and the day of the week on which the survey was taken. Third, we use the follow-up survey to directly measure changes within firms and to control for additional firm characteristics. Appendix Table 6 uses the follow-

up survey to regress within-firm change on the elapsed number of days between the baseline survey and the follow-up. The regression controls for full-time and part-time employment in January, state dummies, day of the week when the baseline survey was taken, years of education, sex, age group, dummies for the type of firm, dummies for sector, and dummies for the week the baseline survey was taken. The table shows that for each elapsed day the probability of recovering in the next two years falls by 0.004, the probability of ever recovering falls by 0.003, and the probability of past layoffs increases by 0.006. These results thus confirm that the trends in Figure 1 are not likely driven by changes in sample composition over time.

3.2 Information frictions

In contrast to the declining expectations of respondents over the first three to four weeks of the survey, small business owners rapidly became aware of programs that could help them. Yet, the levels and trends in awareness differ substantially by the initial size of the business. This question asks specifically about awareness of aid that could help the respondent's business, and thus it captures a combination of awareness as well as comprehension of existing programs.

The top panel of Figure 2 shows the time trends in survey respondents' awareness of any federal state programs that could help their businesses. Awareness increases substantially over the first three weeks, with over 70% of businesses reporting that they were aware of programs when PPP applications opened, increasing to over 80% on April 16th when the PPP exhausted its initial funding. In late April, we see a slight downturn in awareness, which may be related to the fact that the awareness question specifically asks if individuals are aware of programs that "could help your business". Thus, this slight downturn could be reflecting businesses that have already laid off their employees realizing that the PPP may not help them.[7]

The lower panel of Figure 2 breaks out the trends by business size, showing the trends for businesses with fewer than five FTE employees, five to 9.5 FTE employees, and ten to fifty FTE employees. There are substantial gaps in awareness across firm size bins from the onset, as well as marked differences in their evolution over the first three weeks. Businesses with 10–50 FTE employees were highly aware of programs that could help their business throughout the sample. In comparison, businesses with 0 to 4.5 and 5 to 9.5 employees were much less likely to be aware of programs immediately after the CARES Act was passed. Yet, these two groups had very different trends in awareness over time. Businesses with 5 to 9.5 employees rapidly became more aware of programs, reaching similar levels as those of larger businesses around the

[7] Appendix C.1 provides similar results specifically for programs that provide subsidized loans and programs that help cover payroll.

time the PPP opened for applications. In contrast, businesses with fewer than five employees learned about programs much more slowly, with a large gap persisting through when the PPP exhausted its initial funding and never closing completely.

In late April, we see awareness of programs falling for the smallest businesses. One explanation for this decline is that, as details of how forgiveness of PPP loans worked became more widely known, small businesses realized that the program would not be helpful to them.[8]

3.3 Frictions in getting PPP loans

Consistent with the differential rates of awareness, we also find that larger businesses were much more likely to apply for PPP loans, and to get approved conditional on applying. Using the follow-up survey and the extended baseline survey described in Section 2.2, we collect information on whether the business applied for a PPP loan, when the application was submitted, the outcome of the application, and how long it took for the application to be approved. Table 1 shows how these outcomes are predicted by firm characteristics. The first column reports results from regressing an indicator for getting a PPP loan on firm characteristics.[9] Businesses with fewer than 5 employees were 24 percentage points less likely to apply than businesses with 10 to 50 employees, while businesses with 5 to 9.5 employees were 10 percentage points less likely to apply. Those with more education were more likely to apply, and – compared to omitted category of C-Corps and S-Corps – the self-employed, sole proprietorships, and partnerships were substantially less likely to apply.

The first column shows that firm size and sophistication were important predictors of getting a PPP loan, but combine the decision to apply and the outcome of the application. The second and third columns report the same regression for the decision to apply, and receiving a PPP loan conditional on applying, respectively. Both the decision to apply and getting approved conditional on applying are positively correlated with firm size, years of education, and the type of firm. While we do not have exogenous variation in the decision to apply, it is informative that larger firms were more likely to have their PPP loans approved even after conditioning on those who applied and controlling for a rich set of firm characteristics.

Consistent with Fact 2, we find that smaller firms also applied later. The fourth column of

[8]Specifically, two characteristics of the PPP are key: (i) 75% of the forgiven amount of the loan was required to be payroll; and (ii) employment levels were required to be at pre-crisis levels. If small businesses had already laid off their employees, qualifying for forgiveness is more challenging. While we cannot prove these mechanisms, they are consistent with many of the open-ended responses collected at the end of survey.

[9]All regressions in this table control for firm size, firm type, firm sector, the respondent's years of education, an indicator for being female, age bins, state dummies, and the date the survey was taken. The final column controls for the date the application was submitted and the week the survey was taken.

Table 1 runs the same regression, but on how many days it took the firm to apply (conditional on applying). The results show that firms with fewer than five employees applied an average of 1.67 days later. Finally, the fifth column of the table regresses the average wait time for approval on firm characteristics among the firms that were approved. The smallest firms waited, on average 2.25 days longer for approval, while firms with 5 to 9.5 employees waited 1.21 days longer, though this second coefficient is not statistically significant. The final column also shows that the self-employed waited substantially longer for approval.

3.4 The impact of getting the PPP on expectations and employment

We find that getting a PPP loan was associated with substantial improvements in expectations about the future and moderate increases in current employment. Table 2 regresses outcomes on an indicator for receiving a PPP loan and a rich set of controls. The first column includes the whole sample of individuals who were asked about PPP loans, while the second column restricts to those who applied for PPP loans. The remaining columns repeat these regressions conditional on firm size. Overall, getting a PPP loan is associated with a notable improvement in expectations, with the probability of recovery within two years increasing by 0.09 and the probability of closure or bankruptcy in the next six months decreasing by 0.09. When conditioning only on those who applied for a PPP loan, the results are larger, with a 0.12 increase in the probability of recovering within two years and a 0.11 reduction in the probability of closure or bankruptcy in the next six months. These results are largely similar across firm size bins, with the exception of a smaller and statistically insignificant result for recovering within two years for firms with 10-50 FTE employees. Across outcomes, the results are larger and have smaller standard errors for firms with fewer than five employees, and are larger when restricting the regression to only those who applied for a PPP loan.

The last two panels report the same regressions with current employment and an indicator for if the firm has any reduction in employment since January as the outcome variables. Those who received a PPP loan reported slightly higher rates of employment. In addition, they are 9 percentage points less likely to have fewer employees than in January.

3.5 Discussion

Our results suggest that information frictions played an important role in determining differential access to PPP resources between smaller and larger businesses. These frictions might be associated with, for example, uncertainty about the eligibility criteria or the forgivable aspect of

the loan. We argue that these frictions are more binding for small businesses for at least three reasons. First, firm sophistication (measured by years of education of the owner and firm type) is positively correlated with firm size, and lower sophistication could imply greater difficulties in accessing and processing information. Second, larger firms typically have more and better human resources (e.g. accountants or human resources departments), which also contributes to reducing the cost of acquiring information, and applying to the program. Third, there are fixed costs implied by the application process (e.g. finding a bank that will accept the application and acquiring appropriate documentation of payroll), which are more likely to be binding for smaller business. The "first-come, first-served" nature of the program magnifies the potential impacts of these frictions since a timely application was integral to quickly receiving a PPP loan.

The results also show that lower application rates, longer processing times, and ultimately less access to the program have real negative consequences for small firms. To the extent that small businesses struggle to re-hire laid-off workers (potentially due to increased unemployment benefits introduced by the CARES Act), the layoffs that have already occurred might be costly to reverse in the short- to mid-run.[10] This by itself also reduces the attractiveness of loans from future rounds of the program, as payroll determines the size of the loan and how much of the loan can be forgiven. Moreover, uncertainty about what can be forgiven, and how firms will apply for forgiveness may have caused firms to not apply. When the PPP was initially launched, there were few details on how forgiveness worked, and the detailed rules were not posted until May 22nd, almost two months after the CARES Act was signed into law. The initial uncertainty, combined with changing guidance, may have distorted small business owners' beliefs about their eligibility and what the program actually provides.

4 Conclusion

We use new survey data on small business owners in the U.S. to document four key facts. First, by the time the CARES Act was passed, small business owners had already been severely impacted by COVID-19-related disruptions and had laid off many employees. Their expectations about the future were in general negative and deteriorated throughout our sample period, including the period of implementation of the CARES Act. Second, the smallest businesses

[10] While many layoffs may have been intended to be temporary (Alstadsæter et al., 2020), the increased UI benefits introduced as part of the CARES Act, may create additional challenges in re-hiring workers (Barrero et al., 2020). This may be particularly true if workers realize they are likely to be laid off again in eight weeks, which is the period of time for which payroll costs can be forgiven under a PPP loan.

were the least aware of government assistance programs, had the slowest growth in awareness after the passage of the CARES Act, and never reached levels of awareness similar to those of larger businesses. Third, the smallest firms were less likely to apply for the PPP; conditional on applying, they applied later, waited longer for their application to be processed, and were less likely to have been approved. Finally, firms that do get a PPP loan report better outcomes such as greater employment, higher expectations of survival, and higher expectations that their business will recover in the next two years. Overall, our results indicate that information frictions combined with the "first-come, first-served" nature of the PPP led to unequal access to program resources across firm size.

References

Adams, A, T Boneva, M Golin, and C Rauh, "Inequality in the Impact of the Coronavirus Shock: Evidence from Real Time Surveys," *Mimeo*, 2020.

Alstadsæter, Annette, Bernt Bratsberg, Gaute Eielsen, Wojciech Kopczuk, Siem Markussen, Oddbjorn Raaum, and Knut Røed, "The First Weeks of the Coronavirus Crisis: Who Got Hit, When and Why? Evidence from Norway," *NBER Working Paper*, 2020, *27131.*

Barrero, Jose Maria, Nick Bloom, and Steven J. Davis, "Covid-19 is Also a Reallocation Shock," *Becker Friedman Institute Working Paper*, 2020, *2020-59.*

Bartik, Alexander W., Marianne Bertrand, Zoe Cullen, Edward L. Glaeser, Michael Luca, and Christopher Stanton, "How are small businesses adjusting to COVID-19? Early Evidence from a Survey," *NBER working paper*, 2020, *26989.*

Beland, Louis-Philippe, Abel Brodeur, and Taylor Wright, "The Short-Term Economic Consequences of COVID-19: Exposure to Disease, Remote Work and Government Response," *IZA DP No.13159*, 2020.

Besley, Timothy and Stephen Coate, "Workfare versus welfare: Incentive arguments for work requirements in poverty-alleviation programs," *The American Economic Review*, 1992, *82* (1), 249–261.

Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu, "The Role of Application Assistance and Information in College Decisions: Results from the

H&R Block FAFSA Experiment," *The Quarterly Journal of Economics*, 07 2012, *127* (3), 1205–1242.

Bhargava, Saurabh and Dayanand Manoli, "Psychological frictions and the incomplete take-up of social benefits: Evidence from an IRS field experiment," *American Economic Review*, 2015, *105* (11), 3489–3529.

Center for Disease Control, "Cases of Coronavirus Disease (COVID-19) in the U.S.," `https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html` 2020. Accessed: 2020-04-19.

Finkelstein, Amy and Matthew J Notowidigdo, "Take-up and targeting: Experimental evidence from SNAP," *The Quarterly Journal of Economics*, 2019, *134* (3), 1505–1556.

Granja, João, Christos Makridis, Constantine Yannelis, and Eric Zwick, "Did the Paycheck Protection Program Hit the Target?," Working Paper 27095, National Bureau of Economic Research 2020.

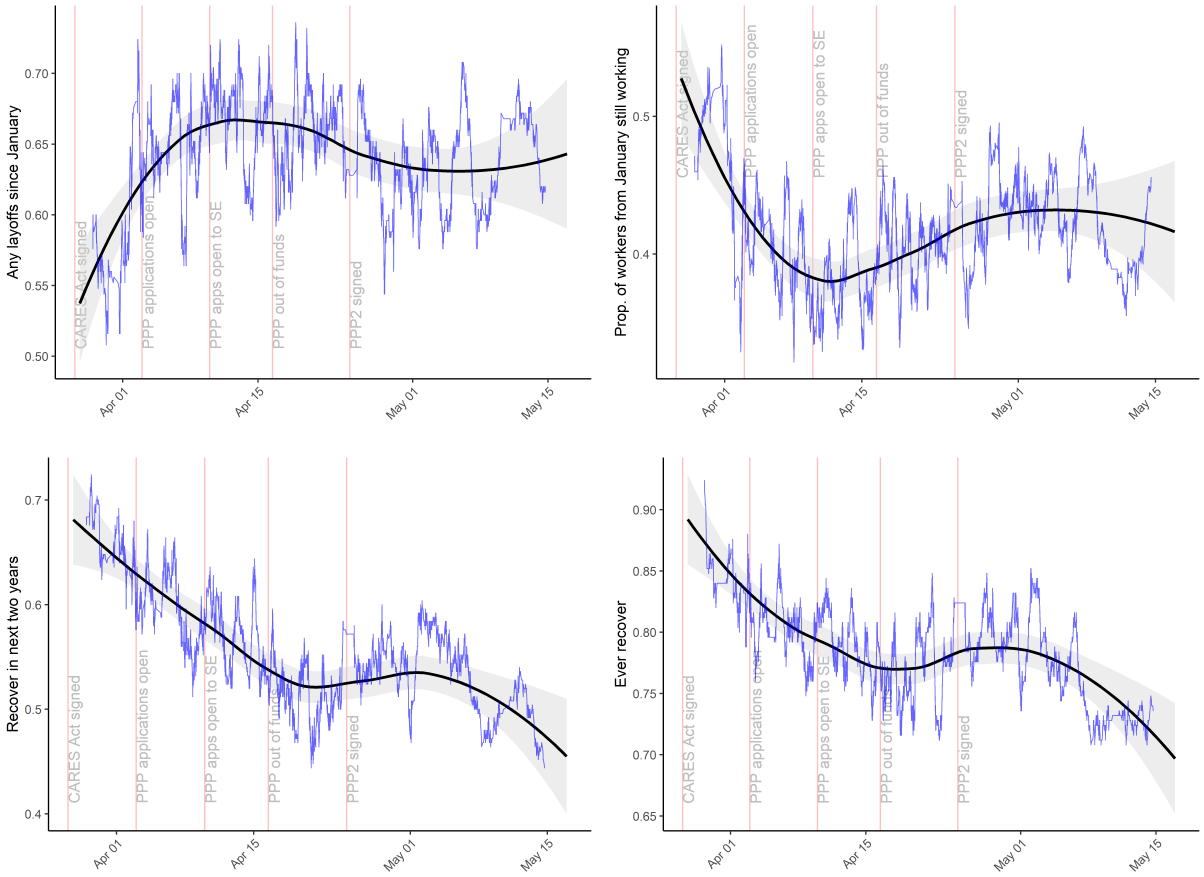
Kahn, Lisa B., Fabian Lange, and David G. Wiczer, "Labor Demand in the Time of COVID-19: Evidence from Vacancy Postings and UI Claims," *NBER Working Paper*, 2020, *27061.*

Table 1: PPP timing by firm characteristics

	Got PPP	Applied to PPP	Got PPP (cond.)	Days to apply	Days to approval
Jan. FTE Emp 0-4.5	-0.242^{***}	-0.226^{***}	-0.245^{***}	1.672^{***}	2.253^{*}
	(0.020)	(0.020)	(0.025)	(0.559)	(1.259)
Jan. FTE Emp 5-9.5	-0.100^{***}	-0.010	-0.129^{***}	0.172	1.219
	(0.024)	(0.022)	(0.027)	(0.581)	(1.354)
Years of schooling	0.009^{***}	0.017^{***}	0.010^{**}	-0.070	0.089
	(0.003)	(0.003)	(0.004)	(0.108)	(0.236)
Type: LLC	-0.075^{***}	-0.082^{***}	-0.057^{**}	0.887	1.165
	(0.018)	(0.020)	(0.024)	(0.584)	(1.406)
Type: Other	-0.002	-0.148^{**}	0.095	3.384^{*}	-4.721
	(0.058)	(0.059)	(0.078)	(1.918)	(2.879)
Type: Self-employed	-0.210^{***}	-0.287^{***}	-0.205^{***}	1.977	6.583^{***}
	(0.023)	(0.037)	(0.055)	(1.632)	(2.365)
Type: Sole prop or part	-0.162^{***}	-0.229^{***}	-0.166^{***}	1.224^{*}	1.656
	(0.017)	(0.020)	(0.025)	(0.642)	(1.712)
N	5,041	5,041	2,526	1,341	374
R^2	0.144	0.129	0.225	0.112	0.459

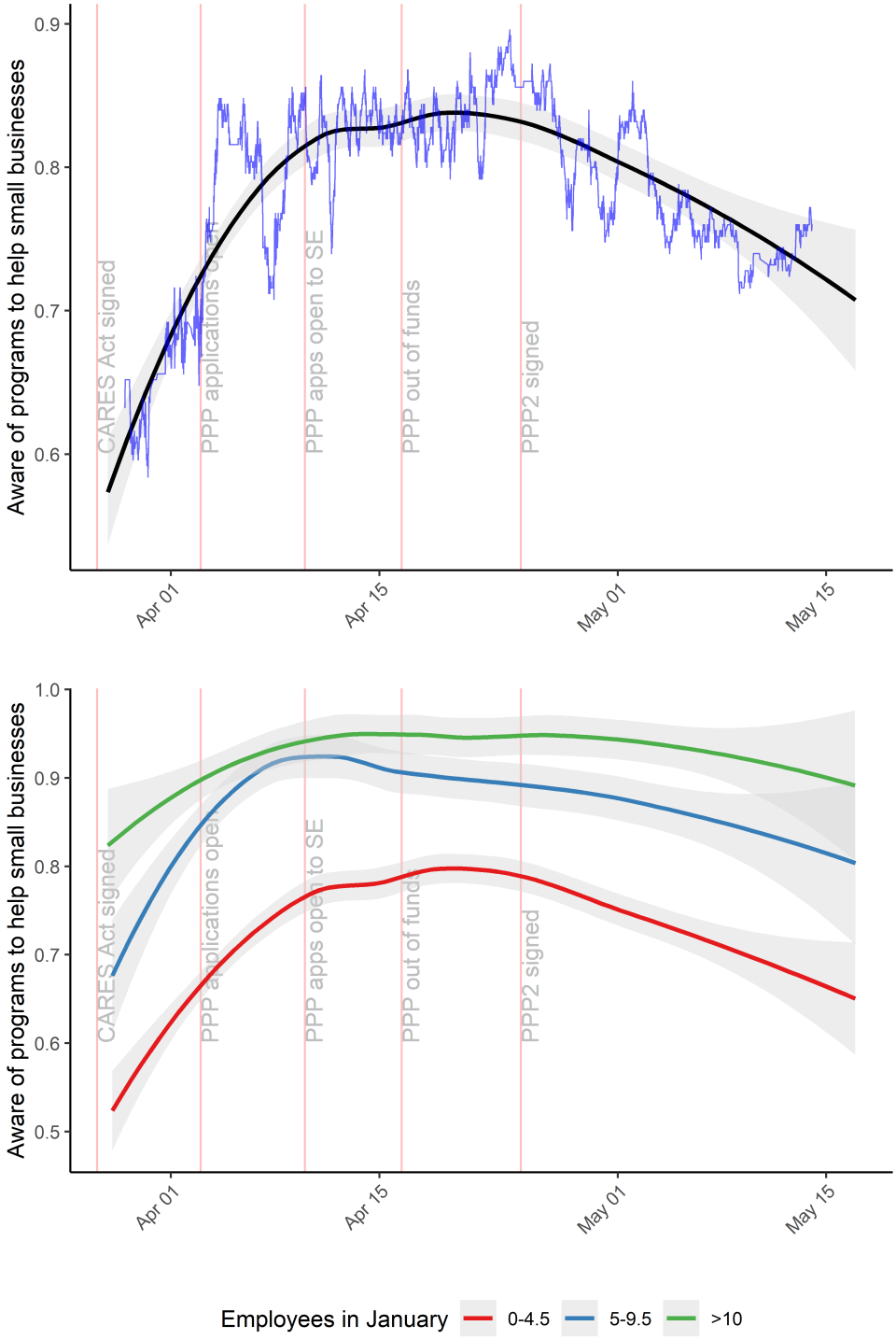
Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. All regressions additionally control for the state of residence. The first three specifications control for the date of the survey, the fourth regression controls for the week the survey was completed, and the final regression controls for the day the first PPP loan application was submitted. All regressions also include controls for industry, age groups, and gender, but coefficients were largely not statistically significant or large and are not displayed as they largely did not predict the outcomes. Alternative specifications of these results are provided in Appendix Tables 7 and 8.

Figure 1: Responses over time



Note: The figure shows survey responses to key questions from March 28th, 2020 to May 16th, 2020. The black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses. The vertical red lines reference the dates of key events related to the Paycheck Protection Program.

Figure 2: Awareness of government programs over time



Note: In the top panel, the black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses. The bottom panel shows loess regression lines over time by business size bins based on the number of FTE employees in January, 2020.

Table 2: Impacts of getting a PPP loan

	Recover in next 2 years							
	All		0–4.5 FTE		5–9.5 FTE		10-50 FTE	
PPP	0.091^{***}		0.110^{***}		0.116^{***}		0.017	
	(0.018)		(0.024)		(0.039)		(0.044)	
PPP (cond)		0.116^{***}		0.136^{***}		0.141^{***}		0.016
		(0.023)		(0.033)		(0.049)		(0.058)
	Prob of closure or bankruptcy							
	All		0–4.5 FTE		5–9.5 FTE		10-50 FTE	
PPP	-0.086^{***}		-0.085^{***}		-0.094^{***}		-0.078^{***}	
	(0.009)		(0.012)		(0.019)		(0.020)	
PPP (cond)		-0.108^{***}		-0.100^{***}		-0.123^{***}		-0.098^{***}
		(0.011)		(0.016)		(0.024)		(0.026)
	Current employment							
	All		0–4.5 FTE		5–9.5 FTE		10-50 FTE	
PPP	0.482^{***}		0.220^{***}		0.665^{***}		0.832	
	(0.155)		(0.064)		(0.216)		(0.703)	
PPP (cond)		0.590^{***}		0.226^{***}		0.743^{***}		0.923
		(0.193)		(0.079)		(0.263)		(0.893)
	Past layoffs							
	All		0–4.5 FTE		5–9.5 FTE		10-50 FTE	
PPP	-0.085^{***}		-0.102^{***}		-0.058		-0.067^{*}	
	(0.017)		(0.024)		(0.037)		(0.036)	
PPP (cond)		-0.108^{***}		-0.134^{***}		-0.066		-0.058
		(0.021)		(0.030)		(0.046)		(0.047)

Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. "PPP" is an indicator for if the business received a PPP loan while "PPP (cond)" is the same regression, but restricted to those who applied to the PPP program. The first two columns show results for the full sample, while the remaining columns show results conditional on firm size bins. All regressions control for a third order polynomial in the number of full-time employees in January, a third order polynomial in the number of part-time employees in January, the day of the week the survey was completed, state dummies, years of education dummies, gender, age group dummies, firm type, firm sector, and the date the survey was completed.

A Appendix: Details on the Paycheck Protection Program

The Paycheck Protection Program (PPP) was established under the CARES Act to provide loans for small businesses impacted by COVID-19. These loans differ from previous Small Business Administration (SBA) loans because they do not require collateral or a credit check. Moreover, the loans may be fully forgiven if the money is spent on payroll, rent, utilities, or interest payments on business mortgages for an 8-week period (with a minimum of 75% to payroll). The first round of aid was available April 3 for small businesses and sole proprietorships. April 10 independent contractors and self-employed individuals were able to apply. The initial $350 billion allocated for the program was exhausted as of April 16.

The Paycheck Protection Program received a second round of funding from Congress and the Small Business Administration resumed accepting applicants on April 27. On April 2, the SBA posted its first Interim Final Rule that announced the implementation of the Coronavirus Aid, Relief, and CARES Act. Since then, the SBA has posted additional Interim Final Rules that supplement those previously posted. Updates have included additional guidance on on eligibility for: certain pledges of loans, certain electric cooperatives, student and seasonal workers, and other specific types of businesses. The Interim Final Rules also provides additional guidance on loan forgiveness. As of May 25 2020, the Paycheck Protection Program has not exhausted its second round of funding to lend to eligible small businesses.

Eligibility

In order to be eligible for the Paycheck Protection Program, the applicant or business impacted by COVID-19 must meet entity specific criteria. Eligible applicants include: sole proprietors, independent contractors, and self-employed persons. Self-employed individuals must have been in operation no later than February 15, 2020, been an individual with self-employed income, have a principal place of residence in the U.S., and have filed or intends to file a 2019 Form 1040 Schedule C.

Loan eligibility expands to any: small business that meets the SBA's size standards or business with a NAICS Code that begins with 72 (as long as the location employs less than 500 per location). Additional eligible businesses that have 500 employees or that meet the SBA's industry size standard (if more than 500) include: non-profit organizations, veteran organizations, or Tribal business.

Applicants are not eligible for the PPP if: (1) they engage in any illegal activities under federal, state, or local law; (2) If an owner of 20% equity or more is incarcerated, on probation, on parole, or currently subject to any criminal charges; or has been convicted of a felony within the last five years; and (3) if the applicant, the applicant's co-owners, or any of the applicant's businesses received or guaranteed a loan from the SBA or other Federal agency, and that loan is currently delinquent within the last 7 years.

Application Process

In order to apply for the PPP, business owners must submit the application form with supplementary materials to existing SBA approved lenders or other FDIC insured lenders. On the application form, business owners are asked about whether they received any Economic Injury Disaster Loans, their number of employees, their average monthly payroll, and information on any co-owners holding at least 20% equity of the business. In addition to the form, applicants are asked to provide documentation on the number of full-time equivalent employees on their payroll and other costs, such as mortgage interest payments and rent. Business owners are not required to provide any personal guarantee or collateral, or prove that they were not able to receive credit elsewhere in order to apply for the PPP.

Conditions of the Program

The PPP offers loans to small business owners with a fixed interest rate of 1%. All payments are deferred for the first six months, though borrowers are not penalized for prepayment. In the case that business owners default on their loans, the administration is barred from laying any claims to theirs or their shareholders' assets. As aforementioned, the PPP allows borrowers to cover payroll costs, which includes salaries, retirement benefits, group health care benefits, rent, utilities, any mortgage or debt obligations, payments for vacation, parental, family, or medical leave, and allowances for dismissals.

While the PPP's coverage of payroll costs is broad, there are a few limitations. In particular, workers whose primary place of residence are outside of the U.S. cannot be included in the calculation of payroll costs, nor independent contractors (who can apply for a PPP loan directly). Wages are also capped at $100,000 for each employee. In addition, the PPP can only cover family and sick leave wages that are not eligible for credit under the Families First Coronavirus Response Act (FFCRA).[11]

[11]The FFCRA provides fully refundable tax credits for sick and family leave wages if an employee is personally

The maximum PPP loan amount depends on three main factors: whether the business hires employees seasonally, whether it is new, and whether it has previously received an Economic Injury Disaster Loan. The first two factors impact the reference period for calculating payroll costs. Generally, the loan amount is capped at 2.5 times the average, monthly payroll costs during the last year. However, seasonal employees can choose to calculate their average, monthly payroll costs between February 15 and June 30, 2019. If a business is new (defined as not operating between February 15 and June 30, 2019), the reference time period for average, monthly payroll costs is between January 1 and February 29, 2020. If an applicant received an Emergency Injury Disaster Loan (EIDL) between January 31 and April 3, 2020, then any outstanding payments for the EIDL should be added to the loan amount. Any advance EIDL loan should be excluded from the calculation, as the advance does not need to be repaid. The total PPP loan amount is capped at $10 million.

Forgiveness

Generally, all payroll costs covered by the loan may be forgiven, if wages are capped at $100,000 per employee. For other purposes, such as rent, utilities, and mortgage interest payments, the maximum amount forgivable is 25% of payroll costs. However, the loan may not be forgiven if an owner reduced their full-time equivalent (FTE) workforce since February 15 or lowered wages originally below $100,000 by more than 25% compared to the most recent quarter. With that said, borrowers who made such changes between February 15 and April 26, 2020, may be exempt from the reduction if they restore their employee numbers and/or wages by June 30, 2020.

https://www.congress.gov/bill/116th-congress/house-bill/748/text

B Appendix: Survey details

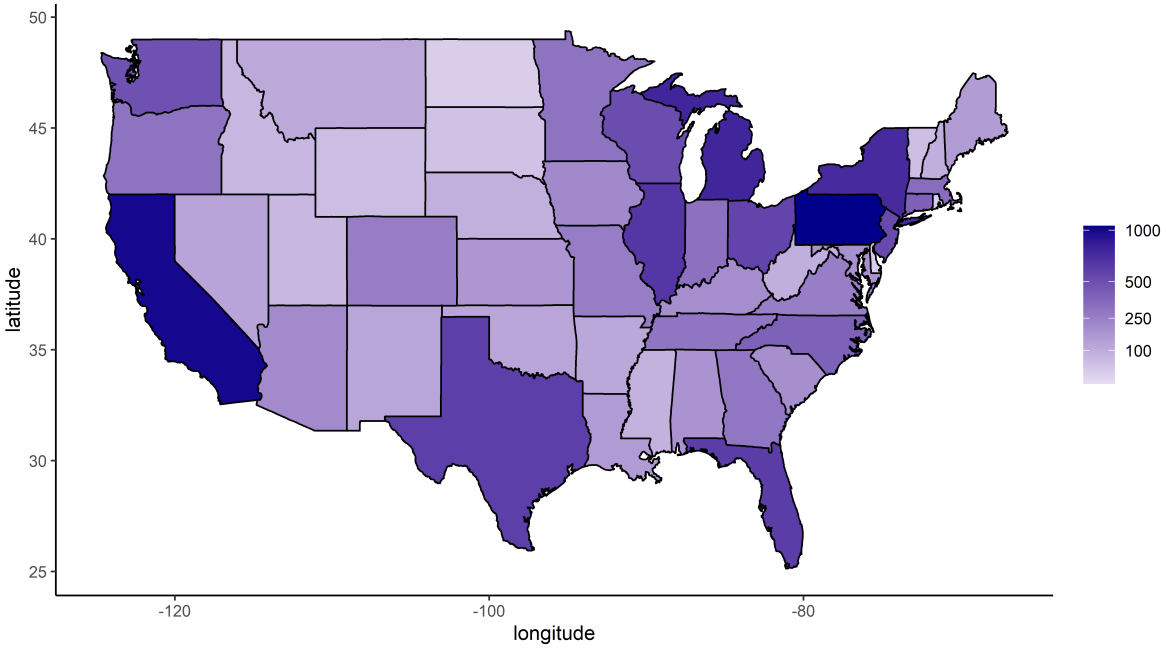
impacted by COVID-19.

Table 3: Valid survey responses by day

2020-03-28	147
2020-03-29	173
2020-03-30	161
2020-03-31	167
2020-04-01	639
2020-04-02	758
2020-04-03	530
2020-04-04	425
2020-04-05	193
2020-04-06	398
2020-04-07	454
2020-04-08	463
2020-04-09	461
2020-04-10	362
2020-04-11	418
2020-04-12	370
2020-04-13	324
2020-04-14	283
2020-04-15	364
2020-04-16	462
2020-04-17	474
2020-04-18	507
2020-04-19	443
2020-04-20	420
2020-04-21	394
2020-04-22	354
2020-04-23	260
2020-04-24	55
2020-04-25	253
2020-04-26	201
2020-04-27	377
2020-04-28	200
2020-04-29	272
2020-04-30	324
2020-05-01	261
2020-05-02	265
2020-05-03	201
2020-05-04	189
2020-05-05	223
2020-05-06	204
2020-05-07	161
2020-05-08	98
2020-05-09	118
2020-05-10	28
2020-05-11	88
2020-05-12	107
2020-05-13	95
2020-05-14	60
2020-05-15	62
2020-05-16	44

Note: Figure shows number of valid survey responses by day.

Figure 3: Distribution of surveys across the United States



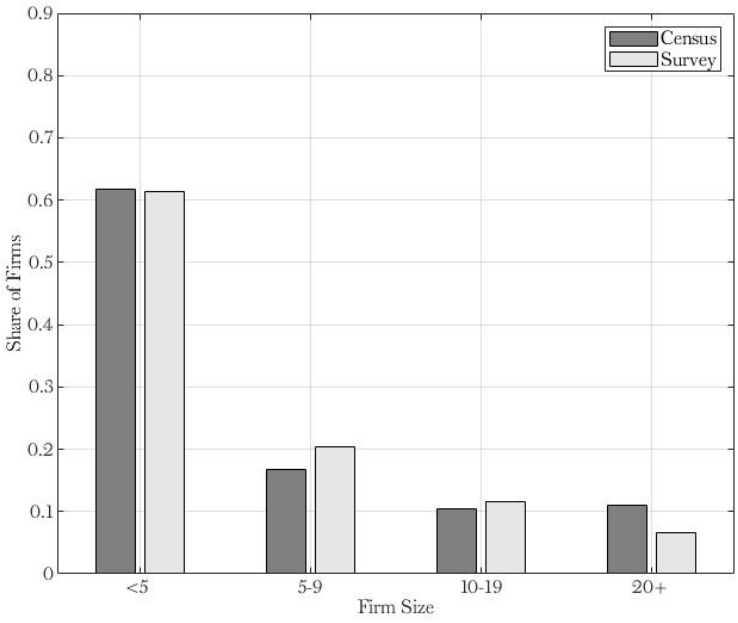
Note: Figure shows number of valid survey responses by state.

Table 4: Survey summary statistics

	Mean	Var	p5	p25	p50	p75	p95	N	missing
Employees in Jan	4.87	41.89	0	1	2.50	5.50	17	14,294	0
Already laid of workers	0.64	0.23	0	0	1	1	1	14,294	0
Expect to lay off workers	0.31	0.21	0	0	0	1	1	14,294	0
Recover in next two years	0.57	0.25	0	0	1	1	1	13,928	366
Ever recover	0.79	0.16	0	1	1	1	1	13,845	449
Prob of closure or bankruptcy	0.34	0.08	0	0.10	0.30	0.50	0.90	13,466	828
Aware of programs to help	0.79	0.17	0	1	1	1	1	12,997	1,297
Aware of subsidized loans	0.66	0.22	0	0	1	1	1	12,656	1,638
Aware of programs to cover wages	0.68	0.22	0	0	1	1	1	12,656	1,638
Diff in recover in next 2 years	0.05	0.21	-1	0	0	0	1	2,576	3,443
Diff in ever recover	0.03	0.13	-1	0	0	0	1	2,565	3,454
Diff in prob of closure or bankruptcy	-0.06	0.04	-0.41	-0.16	-0.02	0.04	0.24	2,556	3,463
Diff in awareness of programs	-0.04	0.16	-1	0	0	0	1	2,591	3,428
Apply for PPP	0.53	0.25	0	0	1	1	1	5,043	976
Got PPP (cond on applying)	0.39	0.24	0	0	0	1	1	2,528	3,491

Note: Table shows the summary statistics for data collected between March 28th and April 20th. Two restrictions are imposed on the data. First, we restrict the analysis to small businesses with fewer than 50 FTE employees, and second, we only include respondents who complete at least the first module of questions regarding employment. Not all respondents complete the entire survey. The bottom half of the table shows numbers relying on follow-up surveys or the extended intake survey started on 2020-04-27. The four rows corresponding to differences use only the follow-up survey, while the final two columns on applying for and getting the PPP use both the follow-up survey and the extended baseline survey.

Figure 4: Firm size distribution: survey vs. Census



Note: Figure shows the share of firms in each employment category in the 2017 Census of US Businesses and the survey respondents.

C Appendix: Robustness of trends over time

Table 5: Trends in outcomes and expectations over time

	Recover in next 2 years				
	All		0–4.5 FTE	5–9.5 FTE	10–50 FTE
Days since 2020-03-27	−0.003***				
	(0.0004)				
Week of 2020-04-01		−0.049**	−0.046*	−0.081	−0.031
		(0.023)	(0.027)	(0.056)	(0.070)
Week of 2020-04-08		−0.099***	−0.082***	−0.193***	−0.077
		(0.023)	(0.027)	(0.057)	(0.073)
Week of 2020-04-15		−0.146***	−0.129***	−0.239***	−0.131*
		(0.023)	(0.027)	(0.056)	(0.071)
Week of 2020-04-22		−0.135***	−0.120***	−0.230***	−0.096
		(0.024)	(0.028)	(0.059)	(0.075)
Week of 2020-04-29		−0.113***	−0.109***	−0.188***	−0.054
		(0.024)	(0.029)	(0.059)	(0.074)
Week of 2020-05-06		−0.153***	−0.137***	−0.242***	−0.153*
		(0.028)	(0.033)	(0.069)	(0.083)
Week of 2020-05-13		−0.210***	−0.169***	−0.386***	−0.180*
		(0.038)	(0.046)	(0.085)	(0.106)
N	13,919	13,919	9,603	2,545	1,771
	Any layoffs				
	All		0–4.5 FTE	5–9.5 FTE	10–50 FTE
Days since 2020-03-27	−0.0004				
	(0.0003)				
Week of 2020-04-01		0.076***	0.088***	0.066	0.117*
		(0.022)	(0.025)	(0.052)	(0.060)
Week of 2020-04-08		0.099***	0.115***	0.066	0.135**
		(0.022)	(0.026)	(0.052)	(0.062)
Week of 2020-04-15		0.093***	0.105***	0.079	0.104*
		(0.022)	(0.025)	(0.052)	(0.061)
Week of 2020-04-22		0.063***	0.065**	0.040	0.121*
		(0.023)	(0.027)	(0.054)	(0.063)
Week of 2020-04-29		0.046**	0.060**	0.030	0.081
		(0.023)	(0.027)	(0.054)	(0.063)
Week of 2020-05-06		0.078***	0.093***	0.047	0.075
		(0.026)	(0.030)	(0.062)	(0.070)
Week of 2020-05-13		0.029	−0.005	0.078	0.140*
		(0.035)	(0.043)	(0.075)	(0.083)
N	14,285	14,285	9,864	2,612	1,809
	Prob of closure or bankruptcy				
	All		0–4.5 FTE	5–9.5 FTE	10–50 FTE
Days since 2020-03-27	−0.001***				
	(0.0002)				
Week of 2020-04-01		0.007	−0.0004	0.048	0.001
		(0.013)	(0.016)	(0.031)	(0.043)
Week of 2020-04-08		0.010	0.002	0.054*	0.003
		(0.014)	(0.017)	(0.031)	(0.044)
Week of 2020-04-15		0.029**	0.015	0.082***	0.043
		(0.014)	(0.016)	(0.031)	(0.043)
Week of 2020-04-22		−0.008	−0.015	0.026	−0.013
		(0.014)	(0.017)	(0.032)	(0.045)
Week of 2020-04-29		−0.031**	−0.038**	0.012	−0.044
		(0.014)	(0.017)	(0.032)	(0.043)
Week of 2020-05-06		−0.034**	−0.055***	0.038	−0.002
		(0.016)	(0.019)	(0.038)	(0.050)
Week of 2020-05-13		−0.012	−0.022	0.064	−0.048
		(0.021)	(0.026)	(0.047)	(0.058)
N	13,457	13,457	9,232	2,490	1,735

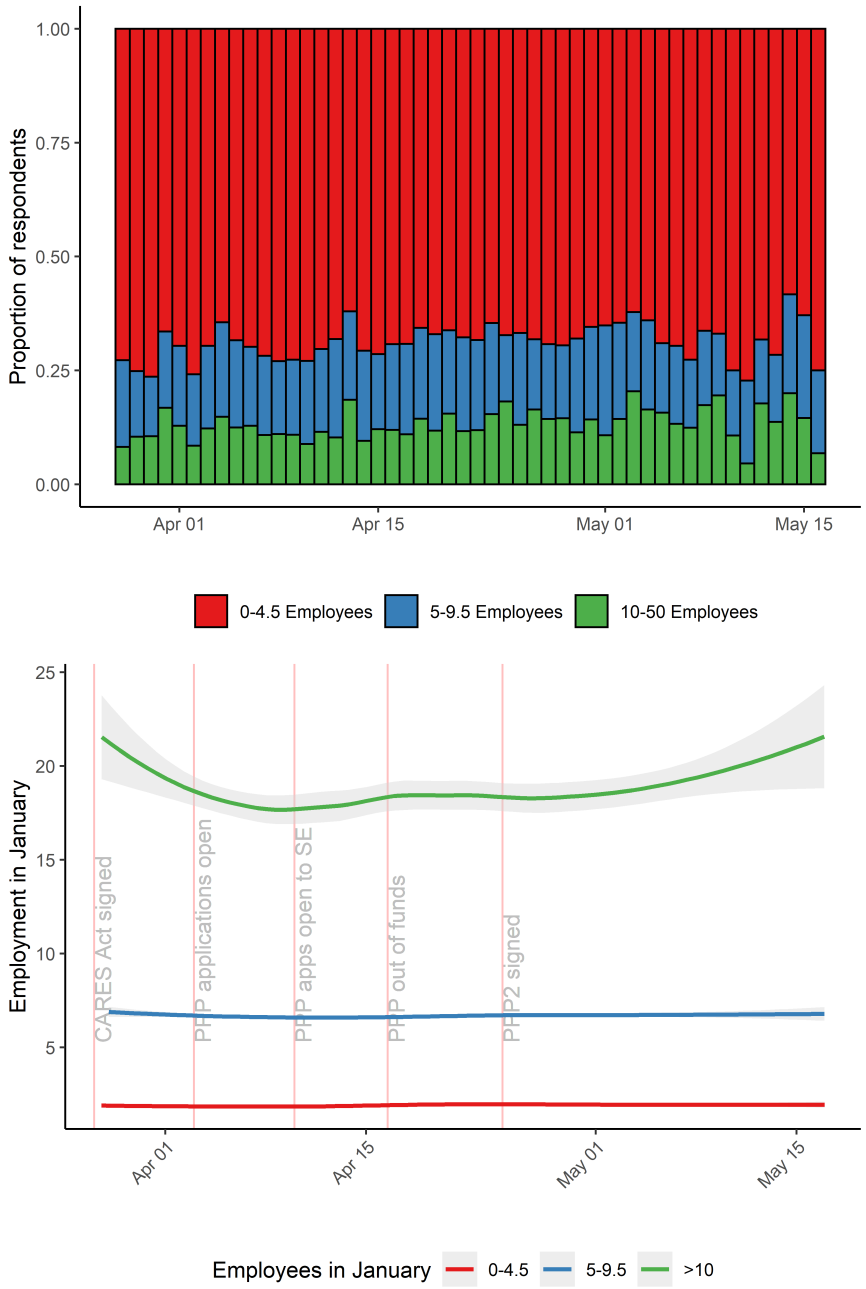
Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. Column one shows the outcome regressed on days since 2020-03-28 while column two shows the outcome regressed on week dummies. The third and fourth column repeat these results, but additionally control for number of part-time employees in January, number of full-time employees in January, the day of the week, and the state indicators.

Table 6: Within-firm changes

	Change in recover in next two years:			
	All	0-4.5	5-9.5	10-50
Elapsed days	-0.004^{**}	-0.004^{*}	-0.002	-0.006
	(0.002)	(0.002)	(0.004)	(0.006)
N	2,573	1,777	475	321
	Change in ever recover:			
	All	0-4.5	5-9.5	10-50
Elapsed days	-0.003^{**}	-0.002	-0.004	-0.005
	(0.001)	(0.002)	(0.003)	(0.005)
N	2,562	1,768	473	321
	Change in past layoffs			
	All	0-4.5	5-9.5	10-50
Elapsed days	0.006^{***}	0.004	0.019^{***}	0.006
	(0.002)	(0.003)	(0.006)	(0.007)
N	2,638	1,819	488	331
	Change in awareness of programs			
	All	0-4.5	5-9.5	10-50
Elapsed days	-0.002	-0.002	-0.002	-0.004
	(0.002)	(0.002)	(0.003)	(0.004)
N	2,588	1,788	477	323

Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. Table shows the change in outcomes for firms who completed follow-up surveys. The first four columns show results for those who completed their follow-up before 2020-04-27, while the second four columns show results for all follow-ups. For each set of four columns, the table shows results for all firms, and then by firm size bin. All regressions control for cubic polynomials in full-time employment and part-time employment in January, the day of the week the baseline was take, state dummies, years of education, sex, age group dummies, firm type, firm sector, and dummies for the week the baseline survey was taken.

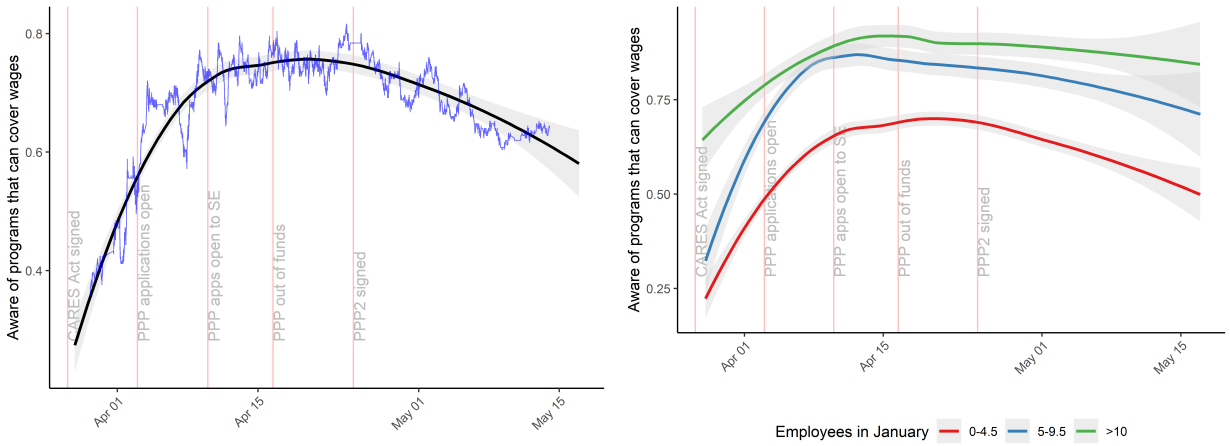
Figure 5: Employment in January 2020



Note: The top panel shows the proportion of daily respondents in three size bins based on their FTE employment in January (0-4.5 employees, 5-9.5 employees, 10-50 employees). The bottom panel shows the a loess regression by size bin size with 95% confidence intervals shown in grey.

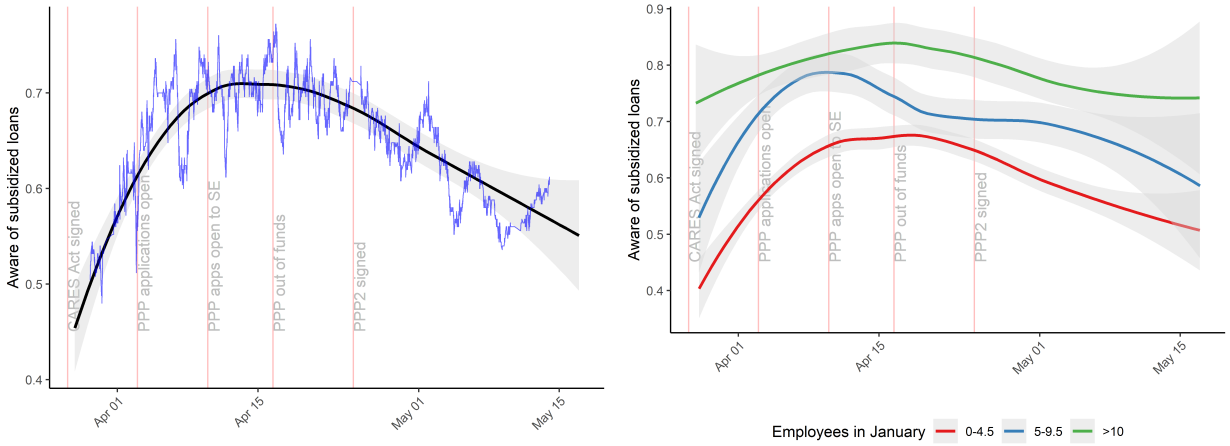
C.1 Trends in awareness of programs over time

Figure 6: Awareness of government programs over time (programs that help cover payroll)



Note: In the top panel, the black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses. The bottom panel shows loess regression lines over time by business size bin.

Figure 7: Awareness of government programs over time (subsidized loans)



Note: In the top panel, the black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses. The bottom panel shows loess regression lines over time by business size bin.

D Appendix: Additional results related to the Paycheck Protection Program

Table 7: Who got a PPP loan?

	Received PPP		Applied to PPP		Received PPP (cond on app)	
	(1)	(2)	(3)	(4)	(5)	(6)
Jan. FTE Emp	0.014^{***}		0.013^{***}		0.013^{***}	
	(0.001)		(0.001)		(0.001)	
Jan. FTE Emp 0-4.5		-0.242^{***}		-0.226^{***}		-0.244^{***}
		(0.020)		(0.020)		(0.025)
Jan. FTE Emp 5-9.5		-0.100^{***}		-0.010		-0.128^{***}
		(0.024)		(0.022)		(0.027)
Years of schooling	0.009^{***}	0.009^{***}	0.017^{***}	0.017^{***}	0.009^{**}	0.010^{**}
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Type: LLC	-0.079^{***}	-0.075^{***}	-0.090^{***}	-0.082^{***}	-0.062^{**}	-0.057^{**}
	(0.018)	(0.018)	(0.020)	(0.020)	(0.024)	(0.024)
Type: Other	-0.001	-0.001	-0.156^{***}	-0.149^{**}	0.093	0.096
	(0.059)	(0.058)	(0.059)	(0.059)	(0.079)	(0.077)
Type: Self-employed	-0.219^{***}	-0.211^{***}	-0.311^{***}	-0.288^{***}	-0.215^{***}	-0.206^{***}
	(0.023)	(0.024)	(0.038)	(0.038)	(0.055)	(0.056)
Type: Sole prop or part	-0.172^{***}	-0.163^{***}	-0.251^{***}	-0.229^{***}	-0.178^{***}	-0.167^{***}
	(0.017)	(0.017)	(0.020)	(0.020)	(0.025)	(0.025)
N	5,041	5,041	5,041	5,041	2,526	2,526
R^2	0.147	0.145	0.121	0.130	0.228	0.225

Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. Columns (1) and (2) regress an indicator for receiving a PPP loan on covariates. Columns (3) and (4) run the same regression but on applying for a PPP loan. Columns (5) and (6) regress an indicator for receiving a PPP loan on covariates, but conditions on those who report applying for a PPP. The first column of each set of regressions includes FTE employment in janury, while the second includes an indicator for 5 to 9.5 employees and an indicator for 10-50 employees. All regressions also include fixed effects for the date the survey was completed and report robust standard errors. The omitted category for age is 18-24, the omitted business type is "S-Corp or C-Corp" and the omitted industry is agriculture.

Table 8: PPP timing by firm characteristics

	Days to apply			**Days waited for approval**		
	(1)	(2)	(3)	(4)	(5)	(6)
Jan. FTE Emp	-0.119^{***}	-0.101^{***}		-0.144^{***}	-0.133^{***}	
	(0.027)	(0.027)		(0.047)	(0.048)	
Jan. FTE Emp 0-4.5			1.830^{***}			2.212^{*}
			(0.547)			(1.149)
Jan. FTE Emp 5-9.5			0.103			1.566
			(0.573)			(1.211)
Years of schooling		-0.128	-0.131		0.211	0.210
		(0.106)	(0.106)		(0.244)	(0.243)
Type: LLC		0.802	0.763		0.956	0.942
		(0.568)	(0.567)		(1.219)	(1.245)
Type: Other		4.119^{**}	4.292^{**}		-3.587	-3.447
		(1.941)	(1.947)		(2.807)	(2.765)
Type: Self-employed		1.614	1.538		5.641^{***}	5.480^{**}
		(1.475)	(1.476)		(1.947)	(2.171)
Type: Sole-prop or part		1.595^{**}	1.341^{**}		1.051	0.866
		(0.628)	(0.642)		(1.515)	(1.515)
N	1,342	1,342	1,342	374	374	374
R^2	0.024	0.052	0.054	0.276	0.304	0.297

Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 10 percent level. The first three columns show regression of elapsed number of days since 2020-03-27 before the business applied for the PPP on business characteristics (restricted to the businesses which applied for the PPP). The last three columns show a similar regression of days waited between applying the PPP and getting approval (restricted to the businesses which were approved for the PPP). All regressions include dummies for the week the baseline survey was completed, and the last three columns additionally include dummies for the day on which the business applied to the PPP program.