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THE EVOLVING IMPACTS OF COVID-19 ON SMALL BUSINESSES SINCE THE CARES ACT

By

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April 2020

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The evolving impacts of COVID-19 on small businesses since the CARES Act

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April 26, 2020

Abstract

This note provides new evidence on how small business owners have been impacted by COVID-19, and how these effects have evolved since the passage of the CARES Act. As part of a broader and ongoing project, we collected survey data from more than 8,000 small business owners in the U.S. from March 28th, one day after the CARES Act was passed, through April 20th. The data include information on firm size, layoffs, beliefs about the future prospects of their businesses, as well as awareness of existing government relief programs. We provide three main findings. First, by the time the CARES Act was passed, surveyed small business owners were already severely impacted by COVID-19-related disruptions: 60% had already laid off at least one worker. Second, business owners' expectations about the future are negative and have deteriorated throughout our study period, with 37% of respondents in the first week reporting that they did not expect to recover within 2 years, growing to 46% by the last week. Third, the smallest businesses had the least awareness of government assistance programs, the slowest growth in awareness after the passage of the CARES Act, and never caught up with larger businesses. The last finding indicates that small businesses may have missed out on initial Paycheck Protection Program funds because of low baseline awareness and differential access to information relative to larger firms.

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1 Introduction

The coronavirus epidemic has had a broad impact on public health in the United States, with more than 800,000 cases and 40,000 deaths reported so far (Center for Disease Control, 2020). In response, 41 states have issued state-wide stay at home orders, with many mandating work-at-home orders and the closure of non-essential businesses. Micro, small and medium enterprises are likely to be severely affected, as they tend to be more concentrated in sectors that have been directly affected by COVID-19 response measures (e.g. retail and services) and are typically more credit constrained than larger businesses (Cao and Leung, 2020; Kumar and Francisco, 2005). Importantly, small businesses make up the majority of companies in the U.S., and are responsible for a substantial fraction of employment.[1] As a response to this crisis, the U.S. Congress passed *The Coronavirus Aid, Relief, and Economic Security (CARES) Act*, which included 350 billion dollars to fund the Paycheck Protection Program (PPP). The PPP was designed to support small businesses by extending forgivable loans.[2]

This note provides new evidence on the effects of the COVID-19 pandemic on small businesses and how these effects evolved over time. Our data comes from daily surveys beginning the day after the CARES Act was passed. As part of an ongoing and broader project,[3] we collected survey data from more than 8,000 small business owners in the U.S., including information on firm size, layoffs, beliefs about future prospects, as well as their awareness of existing government relief programs that could help their firms. We recruited survey participants via social media ads targeted at micro, small, and medium sized business owners across the United States. Our data collection began on March 28th 2020, one day after the CARES Act was passed, and results in this note include responses through April 20th.

We present three main findings. First, by the time the CARES Act was passed, small business owners had already severely impacted by COVID-19-related disruptions and had laid off many employees. By March 30th, 59% of survey respondents reported that they had already laid off a substantial portion of their employees. The passage of the CARES Act does not seem to have modified this trend, as businesses have continued to lay off workers. On average,

[1] Establishments with up to 20 employees correspond to 68.6% of establishments and 16.4% of employment (2017 Census of US Businesses).

[2] The CARES Act was passed on March 27. The PPP started accepting applications on April 3rd, and exhausted initial funding on April 16th. If certain conditions were met, the portion of the loan spent on payroll, utilities, or rent or mortgage interest payments for the eight weeks after the origination date of the loan could be forgiven, as long as 75% of the forgiven expenses were payroll.

[3] The results in this research note are based on the baseline survey of a broader project, which also covers 9 Latin American countries. We are currently conducting the follow-up surveys and an RCT to assess the impacts of providing individualized information about existing programs to small business owners. More information about the project is available at `https://covid19sbs.org/`.

respondents in the survey reported having laid of 0.2 percentage points more of their work force in each new daily wave of responses.

Second, business owners' expectations about the future are in general negative and deteriorated throughout our sample period. On March 28th, 30% of respondents believed their business would not recover within two years, but this number steadily increased, with almost 50% of firms reporting that their business would not recover within two years on April 20th. Put differently, between March 28th and April 20th, the average proportion of respondents reporting that they expect their business to recover within two years declined by 0.7 percentage points each day, with the strongest deterioration happening in the last week of our sample (15–20th of April). We observe the same patterns for the proportion of respondents that think their business will permanently close or go bankrupt within the next six months.

Third, we show that the Paycheck Protection Plan likely provided less benefits for the smallest businesses, since they were generally unaware of the aid on offer. The day after the CARES Act was passed, businesses with fewer than 10 full time equivalent (FTE) employees were much less likely than larger firms to report knowing about any government programs designed to support small businesses when compared to larger firms with 10 to 50 employees. These information asymmetries were even larger when we specifically asked about programs that provide subsidized loans or help cover payroll. 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 50% of businesses with fewer than 5 employees reported knowing about government programs that could help their business when PPP applications were open, and this share remained below 70% through April 16th, when the PPP exhausted its initial funding. Given the "first-come, first-served" nature of the Paycheck Protection Program, these findings support the idea that larger firms were more informed, and that this may have played an important role in unequal access to relief aid.

This note and our broader research agenda contribute to a small but rapidly growing literature on the economic impacts of COVID-19. The most closely related work is Bartik et al. (2020), which surveys 5,800 U.S. small businesses through Alignable, a network-based platform for small business. We find that small and medium sized businesses have been heavily affected by the crisis, with many closing and laying off workers. 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.

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 note, 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.[4]

The main contribution of this note is to provide new evidence on how small business owners have been impacted by COVID-19, with a focus on how their expectations about the future and awareness of government assistance programs have evolved since the passage of the CARES Act. Taken together, results indicate that small businesses had already been deeply impacted by the time the CARES Act was passed, that employment and expectations about the future continued to decline after the Act was passed and the PPP began accepting applications, and that small businesses may have missed out on initial PPP funds because of low baseline awareness and differential access to information.

2 Survey and Data

The goal of the survey is to better understand the challenges small businesses face during the COVID-19 crisis and how these businesses have responded, or plan to respond, to growing economic uncertainties. In this baseline survey, we collected basic firm characteristics such as size (as measured by the number of full- and part-time employees), and the number of laid-off employees since January. The core of the survey relates to small business owners' future beliefs about their businesses and the COVID-19 crisis. More concretely, we elicit their future beliefs by asking how many employees they expect to lay off within the next two months, how optimistic owners are that their businesses will ever fully recover, and the probability that they will go out of business. We also measure awareness of existing state and federal programs available to help small businesses cope with the COVID-19 crisis. The survey concludes by asking participants if they would like to receive additional information from the research team.[5]

Our sample consists of 8,115 adult small business owners in the United States who completed the survey by April 20th, 2020, and in this note we focus on the 8,048 respondents with businesses with fifty or fewer FTE employees. We recruited the sample participants via social media ads

[4] 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).

[5] We will target these businesses in a randomized controlled trial that will evaluate the impact of providing information about existing government programs available in each country to help small businesses during this crisis.

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 2020, one day after the CARES Act was passed, and results in this paper include responses through April 20th. The data was collected relatively uniformly throughout the sampling period, though the number of daily respondents increased over time. In the first four days from March 28th to March 31st, the survey had a response rate of approximately 100 small businesses a day. From April 1st onward, the daily response rate varies between approximately 300 and 600 surveys completed. Appendix Table 5 reports the number of survey responses by day.

The sample draws largely on businesses with fewer than 10 employees in January 2020. While we did not construct the survey to be representative of small firms in the USA, 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 1.

The survey includes responses from all fifty states and the District of Columbia. The majority of responses come from New York, California, Pennsylvania, Michigan, and Illinois, but there are at least 15 responses from each state (including Alaska and Hawaii). Figure 12 in the Appendix maps the distribution of survey responses across the country.

Table 1 summarizes the survey responses. All results we present are restricted to respondents with 50 or fewer employees in January 2020 (firms larger than 50 employees represent only 1% of respondents). The table shows that, on average, respondents had 4.73 FTE employees in January, though the number of employees is right skewed, with a median of 2.5. 80% of the sample said they expect to recover eventually, with 59% expecting to recover in the next two years. Finally, on average, awareness of government programs to help businesses was high, 78%, but lower for programs specifically designed to help business cover wages of their employees (65%).

3 Results

This section outlines three sets of results. The first set of results provides evidence on how the businesses have been affected since January and their beliefs about the future. The second set provides evidence on how the situations and expectations of businesses evolved from March 28 until April 20th, 2020. The third set provides evidence that the smallest businesses were substantially less informed about available government programs that could help their business, and that this gap remains large.

3.1 Overall results

The survey shows that respondents had already laid off many of their employees by mid-April, and that they are pessimistic about a quick recovery. Figure 2 shows the distribution of small businesses in our sample by number of employees in January (dark grey bars) and at the time of the survey (light grey bars). The size distribution at the time of the survey is notably left shifted, with a large increase in the number of businesses with zero employees.

Figure 3 shows how long respondents think it will take for their business to recover. 25% of respondents expect to never recover, 25% say they expect recovery to take more than a year, and less than 15% of respondents believed it would take less than 6 months to recover. Overall, small businesses are pessimistic about the prospects for a quick recovery, and more than half think their businesses will still be impacted in one year.

Figure 4 graphs the self-reported probabilities that the business would permanently close or goes bankrupt in the next six months. The figure reports the fraction of businesses in each decile. More than 25% of businesses reported a probability of 10% or less, but many report much higher probabilities, with 5% of the distribution placing their probability of permanent closure or bankruptcy in the next six months above 90%.

3.2 Changes over time

The second set of results investigates the evolution of responses over the three weeks after the passage of the CARES Act. Using the survey, we chart the responses over time, which provide a repeated cross section of the population of respondents. This repeated cross section provides insights into how businesses have continued to adjust to the disruption and how their expectations about the future have evolved. Overall, later respondents are more likely to have laid off workers and have lower expectations about the future.

Figure 5 provides evidence on how employment decisions have changed for small businesses over the three weeks following the passage of the CARES Act. The top panel shows the time trend for whether businesses have laid off any workers since January. The black-line is loess regression fit to the data with the grey region showing the 95% confidence interval, and the blue-line plots a moving average over 250 responses. We have added light red vertical lines for when the CARES Act was signed, when PPP applications opened to most businesses, when PPP applications opened to the self-employed and independent contractors, and when the initial funding for the PPP was exhausted. There has been an upward trend in the proportion of small businesses who have had to lay off workers – increasing from below 60 percent to above 65

percent over 3 weeks. The bottom panel provides similar evidence by plotting the proportion of workers who were employed in January who are still employed, which provides additional evidence on the intensive margin. Over the three week period, this proportion falls by more than 5 percentage points.

Figure 6 provides additional detail on how the distribution of the number of FTE employees has changed over time. Each panel shows the distribution of businesses by their number of employees (grey bars) as well as the distribution of FTE employees in January (red bars). By March 28th, many small businesses had already laid off a sizable proportion of their workers with more than 40% reporting zero workers compared to less than 10% in January. Over time, the distribution of businesses by number of employees continues to shift to the left, with more than 50% of small businesses reporting that they had no employees by the week of April 15th.

While layoffs show that many small businesses have already taken action, expectations about the future are also declining over time. Figure 7 shows the time trends for whether respondents believed their business would ever recover (top panel) and if they thought their business would recover in the next two years (bottom panel). Over the three week period, the proportion expecting to ever recover fell by more than 10 percentage points, and the proportion expecting to recover in the next years fell by approximately 15 percentage points. Both trends seem to be unaffected by the PPP.

Figure 8 shows that expectations about permanent business closure or bankruptcy have evolved similarly. Unlike the recovery questions above, here respondents were asked to adjust a slider ranging from 0 to 100 to report the probability that their business would close permanently or would declare bankruptcy in the next six months. The top panel shows the average probability over time, while the bottom panel reports the proportion of responses above 80%. Similar to the proportion of firms that never expect to recover, we see a persistent increase over time.

One concern with the visual evidence presented above is that the sample of respondents may change over time. To address this, we provide regression results on how responses evolve over time, controlling for the number of full time employees in January, the number of part time employees in January, day of week dummies, and state dummies. Table 2 provides our estimates for layoffs over time. The first column regresses the outcome on days since March 28th, while the second column regresses the outcome on week indicators. The third and fourth columns repeat these regressions but add the controls mentioned above. The top panel shows results for the indicator of any layoffs since January, while the bottom panel shows results for the proportion of employees from January still employed. All specification show similar trends. Each day, the

proportion of businesses who have already laid of workers increased by 0.2 percentage points, with the week dummies showing a similar pattern, but with the increase being larger in the first week and smaller in the second and third.

Table 3 shows results similar to Table 2, but for expectation on future recovery. The top panel uses an indicator for whether the individual believes her business will recover in the next two years while the bottom panel uses an indicator for if she thinks their business will ever recover. Similar to layoffs, adding controls does little to the estimates and we again find a strong decline over time. On average, the proportion of businesses reporting that they will recover within the next two years decreases by 0.7 percentage points per day. Similarly, the the proportion reporting that they will ever recover decreases by 0.4 percentage points per day.

Related to expectations of recovery, Table 4 shows regression results for the probability of permanent business closure or bankruptcy in the next six months, as well as an indicator for whether this number is above 80%. We find that each day the average probability of closure or bankruptcy increases by 0.2 percentage points, and that the proportion of those reporting probabilities above 80% also increases by 0.2 percentage points per day.

Finally, one potential concern is that these patterns could be a consequence of changes in the composition of respondents over time. Appendix Figure 13 shows that this is unlikely to be the case, as the distribution of businesses changes little over time. The top panel shows that the size distribution of businesses across the three size bins (0–4.5, 5–9.5 and 10–50 FTE employees) remains roughly constant, while the bottom panel shows that the average size within the three bins also remains largely the same. This is true for the whole period except the first two days, when businesses with 10-50 employees made up a slightly smaller proportion of participants and came from somewhat larger businesses within that group.

3.3 Information frictions

In contrast to the declining expectations of respondents over time, we find that, on average, small businesses 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. The top panel of Figure 9 shows the time trends in survey respondents' awareness of any federal, state, or municipal program that could help their business. As the figure shows, awareness increases substantially over the period, with over 70% of businesses reporting that they were aware of programs when PPP applications opened, increasing to over 85% on April 16th when the PPP ran out of initial funding. Since April 16th, we see a slight downturn in awareness, which corresponds to the

exhaustion of the PPP, the main program for supporting small businesses during the COVID-19 disruption.

The lower panel of Figure 9 breaks out the trends by business size, showing the trends for businesses with fewer than five FTE employees, five to 9.5 employees, and ten to fifty employees. There are substantial gaps in awareness across firm size bins from the onset, but also marked differences in their evolution. Businesses with 10–50 FTE employees were highly aware of programs that could help their business throughout the three weeks in 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 the day after the CARES Act were passed. These two groups had very different trends during our sample period. The businesses with 5 to 9.5 employees rapidly become more aware of programs, reaching similar levels of awareness as the larger businesses within one or two days after 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. After the PPP ran out of initial funds, awareness of aid programs falls, especially for the smaller businesses.

Figures 10 and 11 show similar results specifically for awareness of programs that help cover payroll and of programs that provide subsidized loans. While overall levels for both are lower, the same trend emerges. The larger businesses are aware of programs early on, the 5 to 9.5 employee businesses learn about programs rapidly, while businesses with fewer than 5 employees become aware of programs at a much slower rate.

4 Conclusion

This research note provides new evidence on how small business owners have been impacted by COVID-19 and how these effects have evolved since the Cares Act was passed, on March 27th, until April 20th. As part of an ongoing and broader project, we collect survey data from more than 8,000 small business owners in the U.S., including information on their firm size, layoffs, beliefs on future prospects, as well as their awareness of existing government relief programs that can help their firms.

We provide three main findings. 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. Second, business owners' expectations about the future are in general negative and deteriorated throughout our sample period, including the period of implementation of the CARES Act. Third, the smallest businesses had the least awareness of government assistance

programs, and the slowest growth in awareness after the passage of the CARES Act. This finding indicates that small businesses may have missed out on initial PPP funds because of low baseline awareness and differential access to information.

References

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

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).

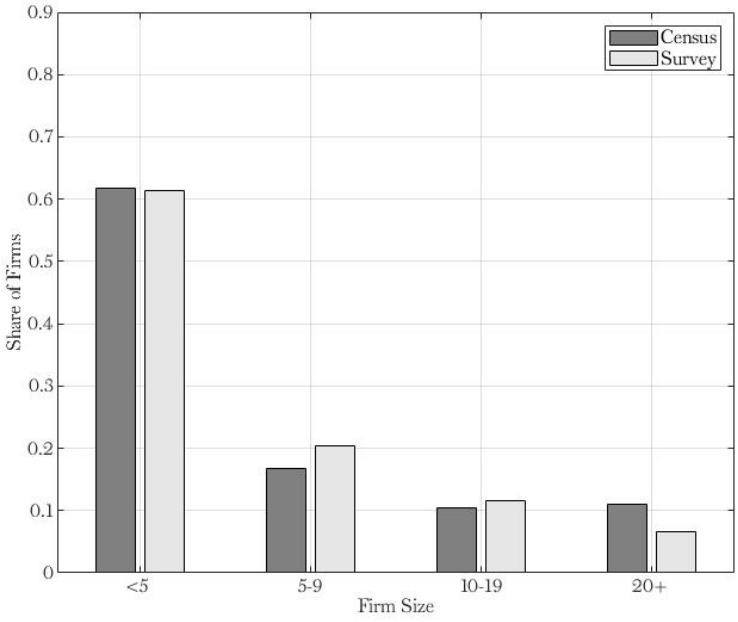
Beland, Louis-Philippe, Abel Brodeur, and Taylor Wright, "The Short-Term Economic Consequences of COVID-19: Exposure to Disease, Remote Work and Government Response," *IZA DP No.13159*, 2020.

Cao, Shutao and Danny Leung, "Credit constraints and productivity of SMEs: Evidence from Canada," *Economic Modelling*, 2020, *88*, 163 – 180.

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.

Kumar, Anjali and Manuela Francisco, "Enterprise Size, Financing Patterns, and Credit Contraints in Brazil," Technical Report, World Bank Working Paper 2005.

Figure 1: Firm size distribution: survey vs. Census



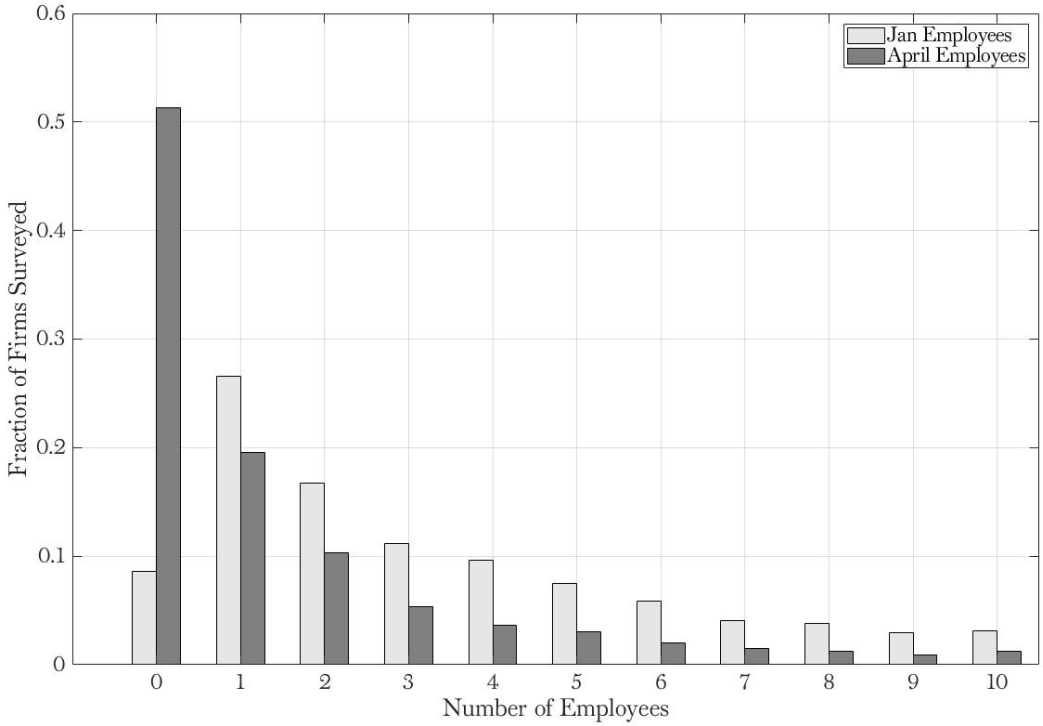
Note: Figure shows the share of firms in each employment category in the 2017 Census of US Businesses and the survey respondents.

Table 1: Survey summary statistics

	Mean	Var	p5	p25	p50	p75	p95	N	missing
Employees in January	4.73	39.47	0	1	2.50	5.50	16.50	8,048	0
Already laid of workers	0.65	0.23	0	0	1	1	1	8,048	0
Expect to lay off workers	0.31	0.22	0	0	0	1	1	8,048	0
Recover in next two years	0.59	0.24	0	0	1	1	1	7,848	200
Ever recover	0.80	0.16	0	1	1	1	1	7,781	267
Prob of closure or bankruptcy	0.36	0.08	0	0.10	0.30	0.51	0.90	7,618	430
Aware of programs to help	0.78	0.17	0	1	1	1	1	7,589	459
Aware of subsidized loans	0.66	0.22	0	0	1	1	1	7,432	616
Aware of programs to cover wages	0.65	0.23	0	0	1	1	1	7,432	616

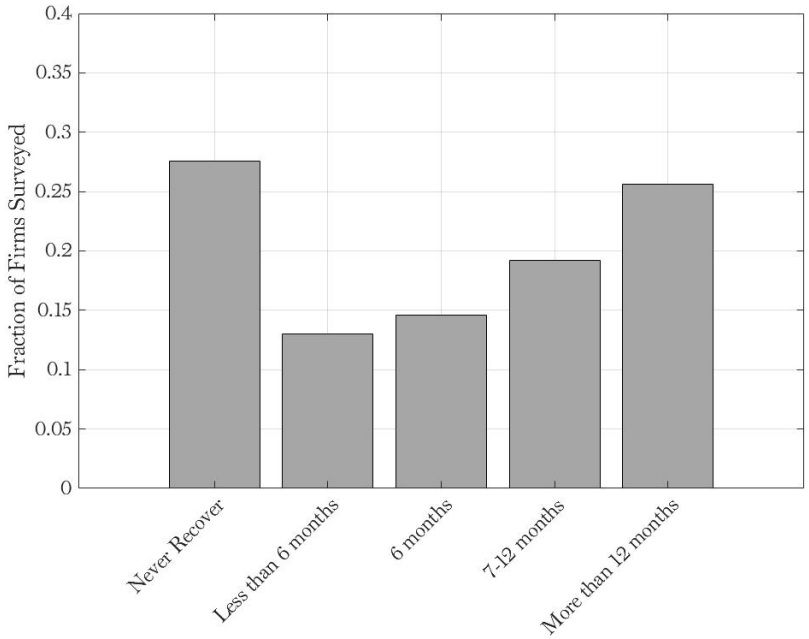
Note: Table shows the summary statistics for data collected between March 28th and April 20th. Two restrictions are imposed on the data. First, we restrict the analysis to small businesses with fewer than 50 FTE employees, and second, we only include respondents who complete at least the first module of questions regarding employment.

Figure 2: Change in firm size distribution (March 28th - April 18th)



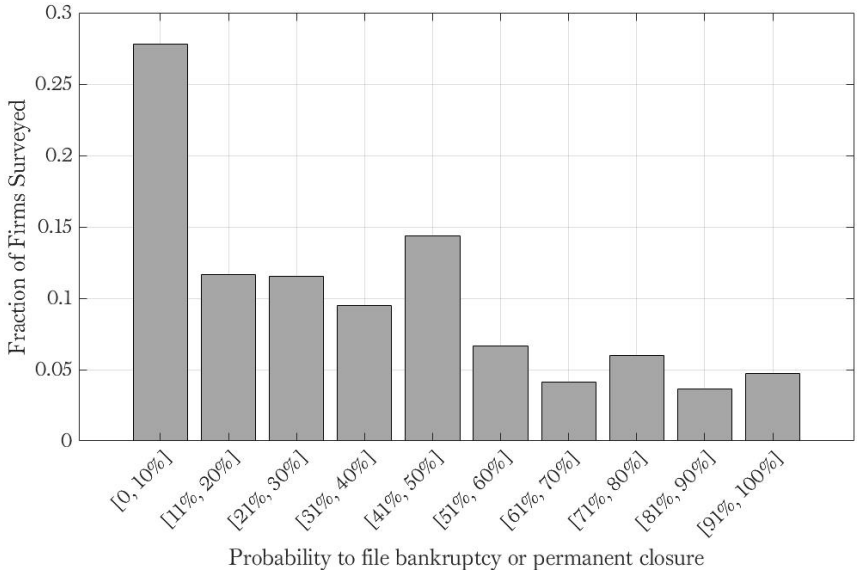
Notes: Figure shows proportion of businesses with 1 to 10 employees in January and at the time of the survey. The figure is truncated at 10 given that this accounts for the majority of businesses in the sample.

Figure 3: Expectations about recovery (March 28th - April 18th)



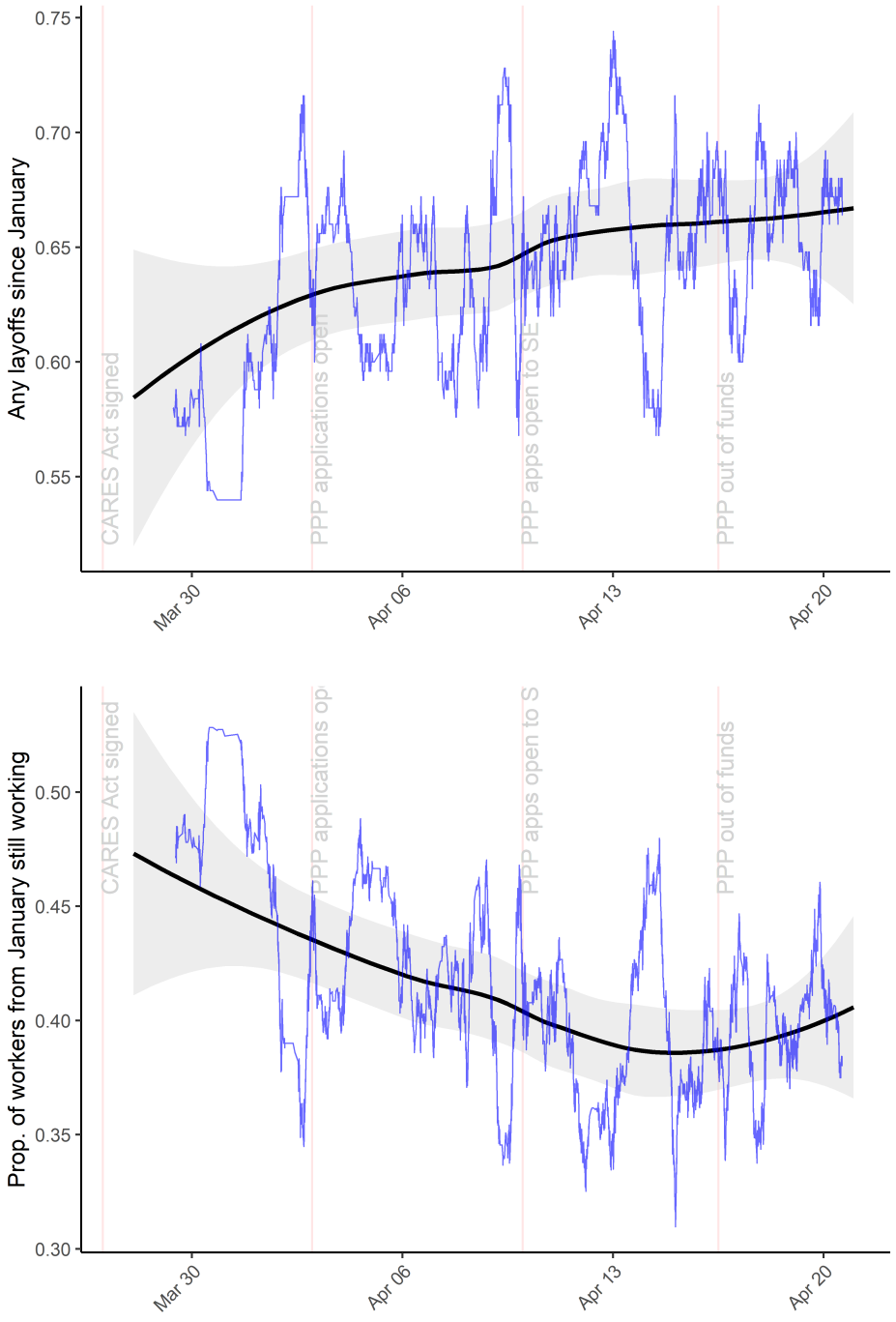
Note: Figure shows self-reported expectations about how long it will take the business to recover.

Figure 4: Expectations of permanent business closure or bankruptcy (March 28th - April 18th)



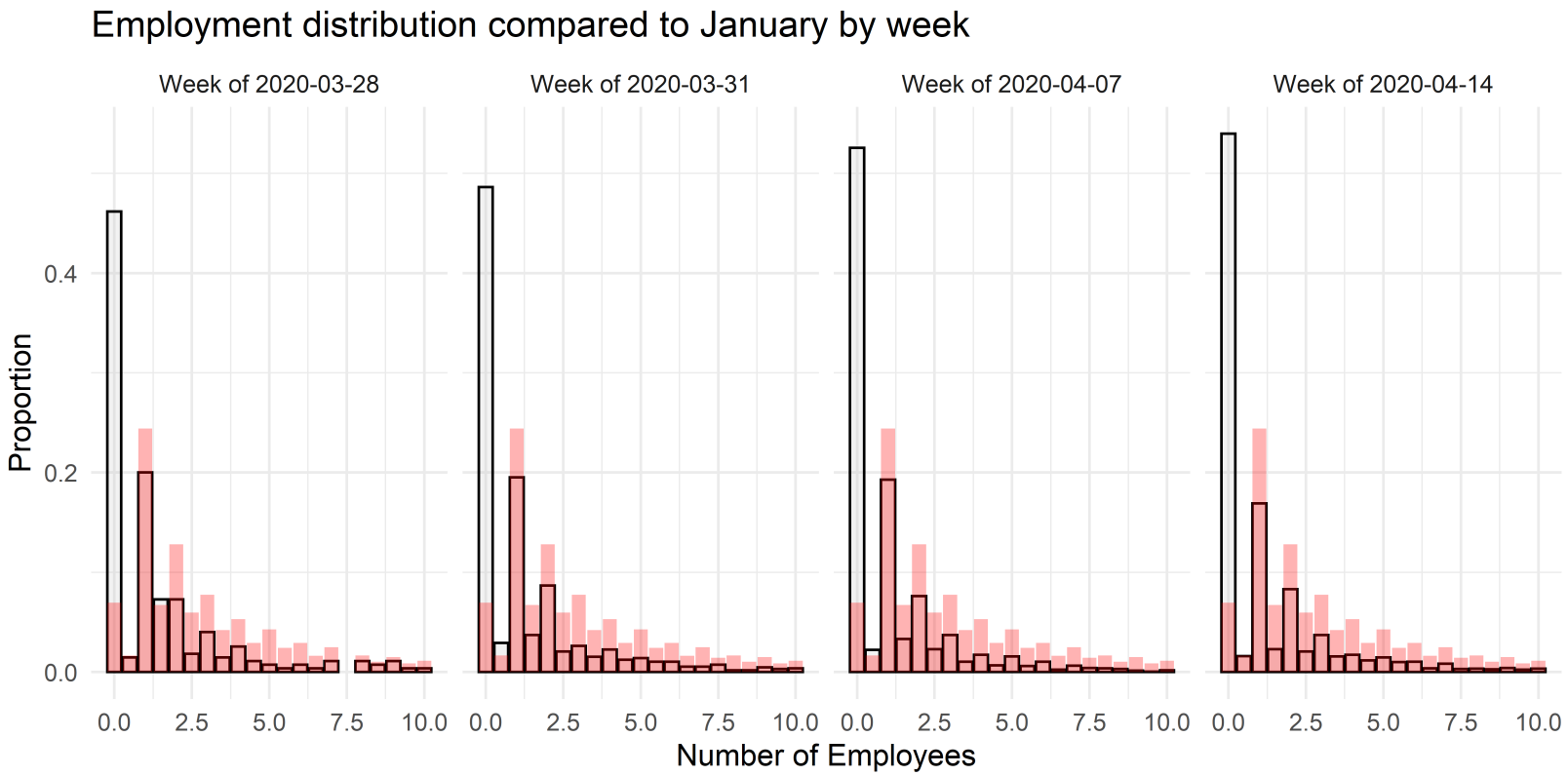
Note: Figure shows the proportion of respondents in each quintile of self-reported probability of permanent business closure or bankruptcy in the next six months.

Figure 5: Any past layoffs over time



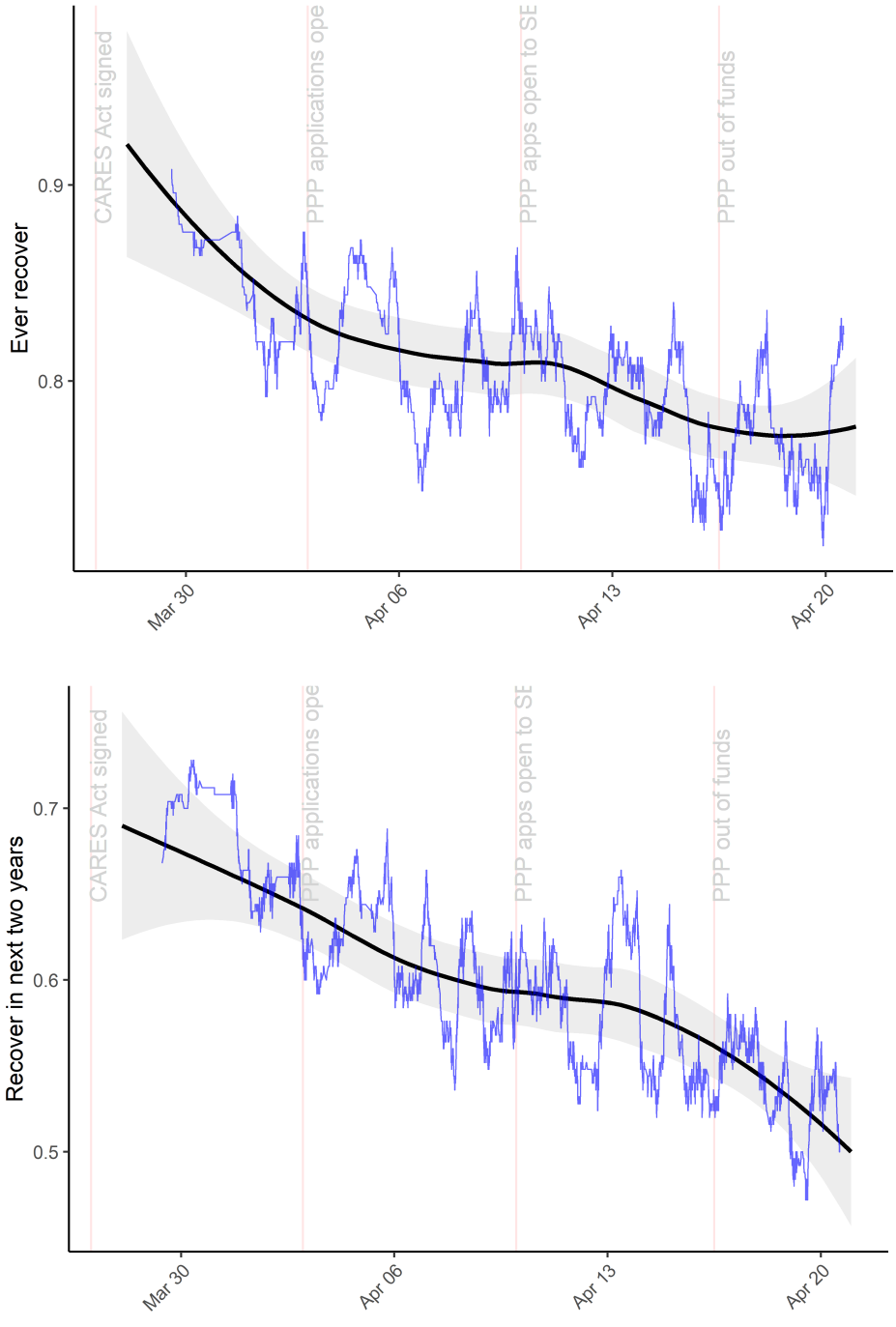
Note: The black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses.

Figure 6: Size distribution by week (compared to January)



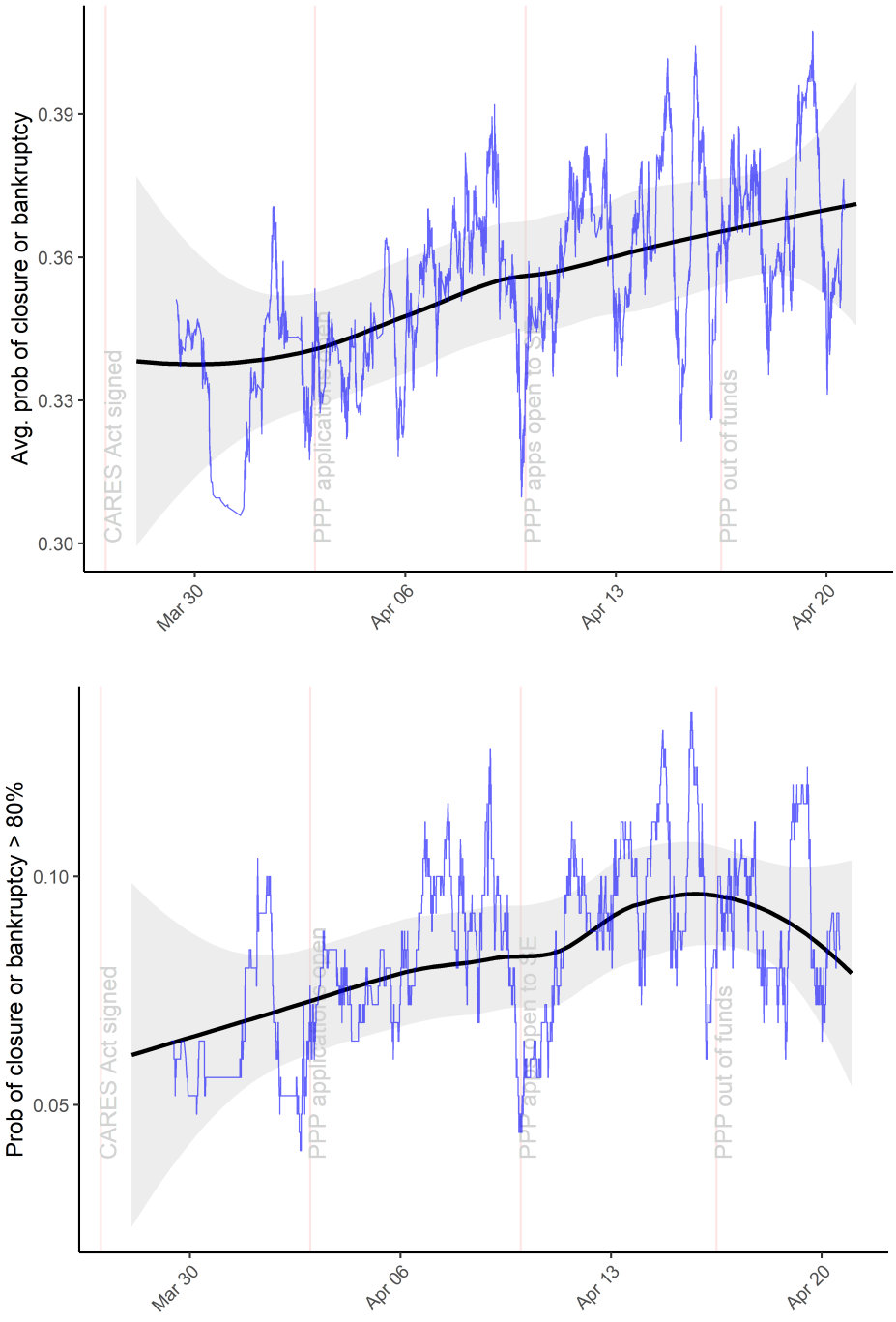
Note: Figure shows the distribution of FTE employees of respondents (light grey bars), with each panel representing a separate week. In each panel, we also include the distribution of FTE employees in January (red bars) for reference. Figure is truncated at 10 FTE employees.

Figure 7: Expectations of business recovering



Note: 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.

Figure 8: Expectations about closure and bankruptcy



Note: 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.

Table 2: Layoffs

	Any layoffs since January			
Days since 2020-03-28	0.002***		0.001	
	(0.001)		(0.001)	
Week of 2020-03-31		0.055*		0.024
		(0.031)		(0.031)
Week of 2020-04-07		0.065**		0.042
		(0.030)		(0.030)
Week of 2020-04-14		0.073**		0.041
		(0.030)		(0.030)
Controls			✓	✓
N	8,048	8,048	8,042	8,042
R^2	0.001	0.001	0.112	0.112
	Prop. of employees in January still employed			
Days since 2020-03-28	−0.003***		−0.002**	
	(0.001)		(0.001)	
Week of 2020-03-31		−0.043		−0.028
		(0.029)		(0.030)
Week of 2020-04-07		−0.070**		−0.052*
		(0.029)		(0.030)
Week of 2020-04-14		−0.078***		−0.056*
		(0.029)		(0.030)
Controls			✓	✓
N	7,551	7,551	7,546	7,546
R^2	0.002	0.002	0.048	0.048

Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 5 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 3: Expectations of recovery

	Recover in next two years			
Days since 2020-03-28	-0.007^{***}		-0.007^{***}	
	(0.001)		(0.001)	
Week of 2020-03-31		-0.036		-0.031
		(0.029)		(0.031)
Week of 2020-04-07		-0.080^{***}		-0.075^{**}
		(0.029)		(0.031)
Week of 2020-04-14		-0.131^{***}		-0.126^{***}
		(0.029)		(0.031)
N	7,848	7,848	7,842	7,842
Controls			✓	✓
R^2	0.007	0.007	0.023	0.023
	Ever recover			
Days since 2020-03-28	-0.004^{***}		-0.004^{***}	
	(0.001)		(0.001)	
Week of 2020-03-31		-0.067^{***}		-0.073^{***}
		(0.021)		(0.023)
Week of 2020-04-07		-0.085^{***}		-0.085^{***}
		(0.020)		(0.022)
Week of 2020-04-14		-0.119^{***}		-0.117^{***}
		(0.021)		(0.023)
Controls			✓	✓
N	7,781	7,781	7,775	7,775
R^2	0.004	0.005	0.015	0.016

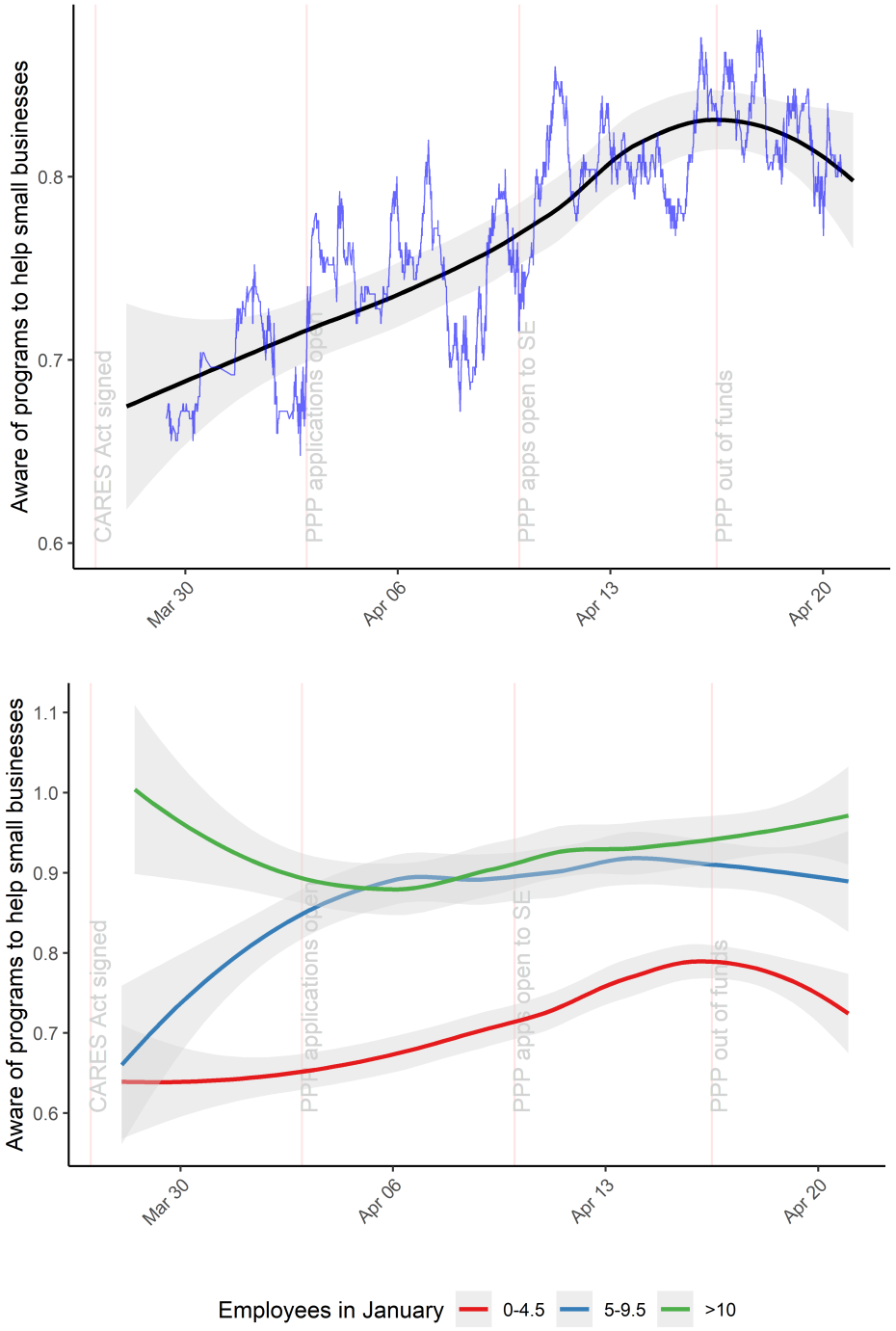
Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 5 percent level. Column one shows the outcome regressed on days since 2020-03-28 while column two shows the outcome regressed on week dummies. The third and fourth column repeat these results, 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 4: Expectations of business closure and bankruptcy

	Avg prob of permanent closure or bankruptcy			
Days since 2020-03-28	0.002***		0.002***	
	(0.001)		(0.001)	
Week of 2020-03-31		−0.002		0.002
		(0.017)		(0.018)
Week of 2020-04-07		0.015		0.019
		(0.017)		(0.018)
Week of 2020-04-14		0.025		0.027
		(0.017)		(0.018)
Controls			✓	✓
N	7,618	7,618	7,612	7,612
R^2	0.001	0.001	0.014	0.014
	Prob of permanent closure or bankruptcy > 80%			
Days since 2020-03-28	0.001**		0.001**	
	(0.0005)		(0.001)	
Week of 2020-03-31		0.008		0.011
		(0.015)		(0.017)
Week of 2020-04-07		0.021		0.023
		(0.015)		(0.016)
Week of 2020-04-14		0.028*		0.029*
		(0.015)		(0.016)
Controls			✓	✓
N	7,618	7,618	7,612	7,612
R^2	0.001	0.001	0.010	0.010

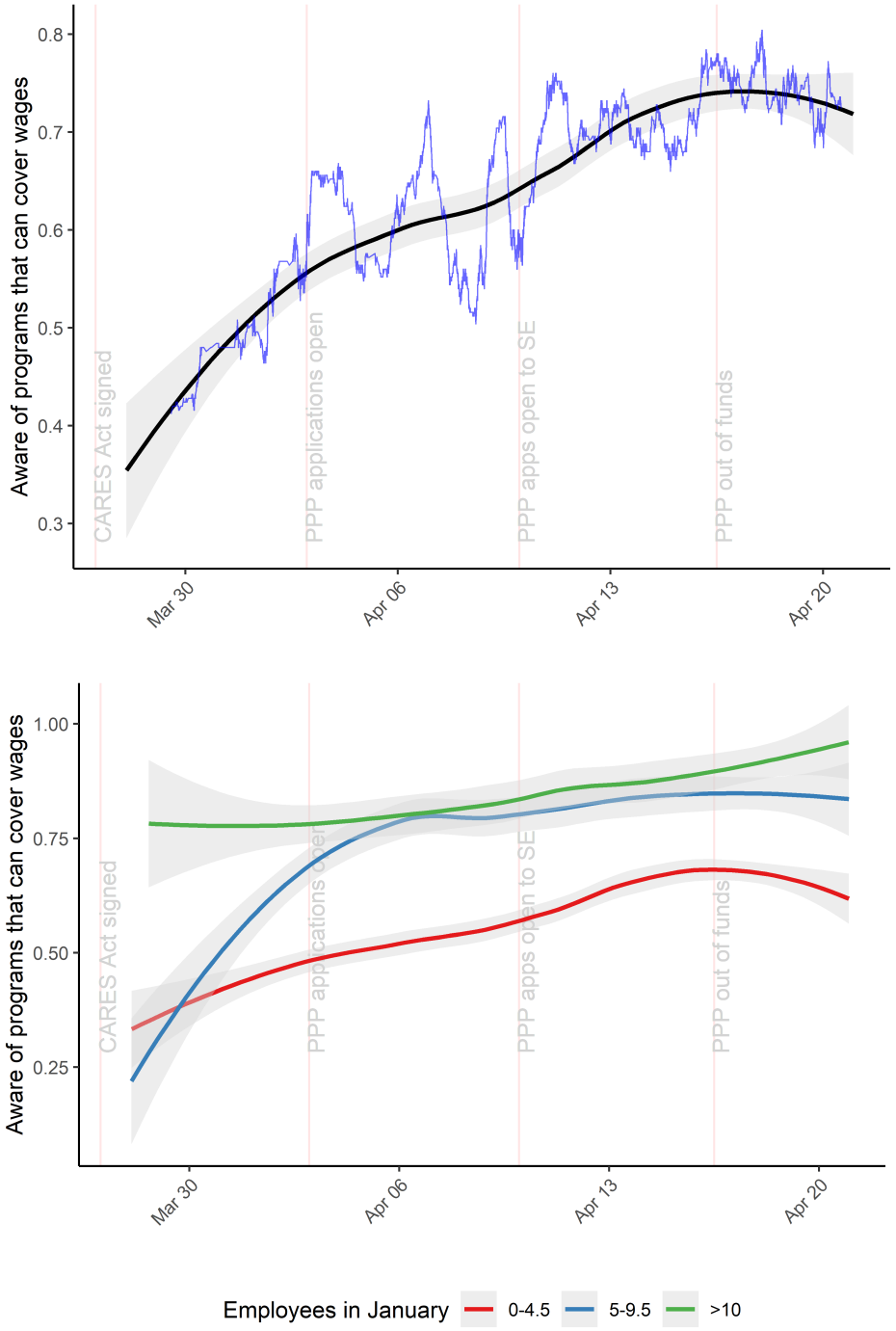
Note: *** Significant at the 1 percent level, ** significant at the 5 percent level, and * significant at the 5 percent level. Column one shows the outcome regressed on days since 2020-03-28 while column two shows the outcome regressed on week dummies. The third and fourth column repeat these results, 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.

Figure 9: Awareness of government programs over time (any program)



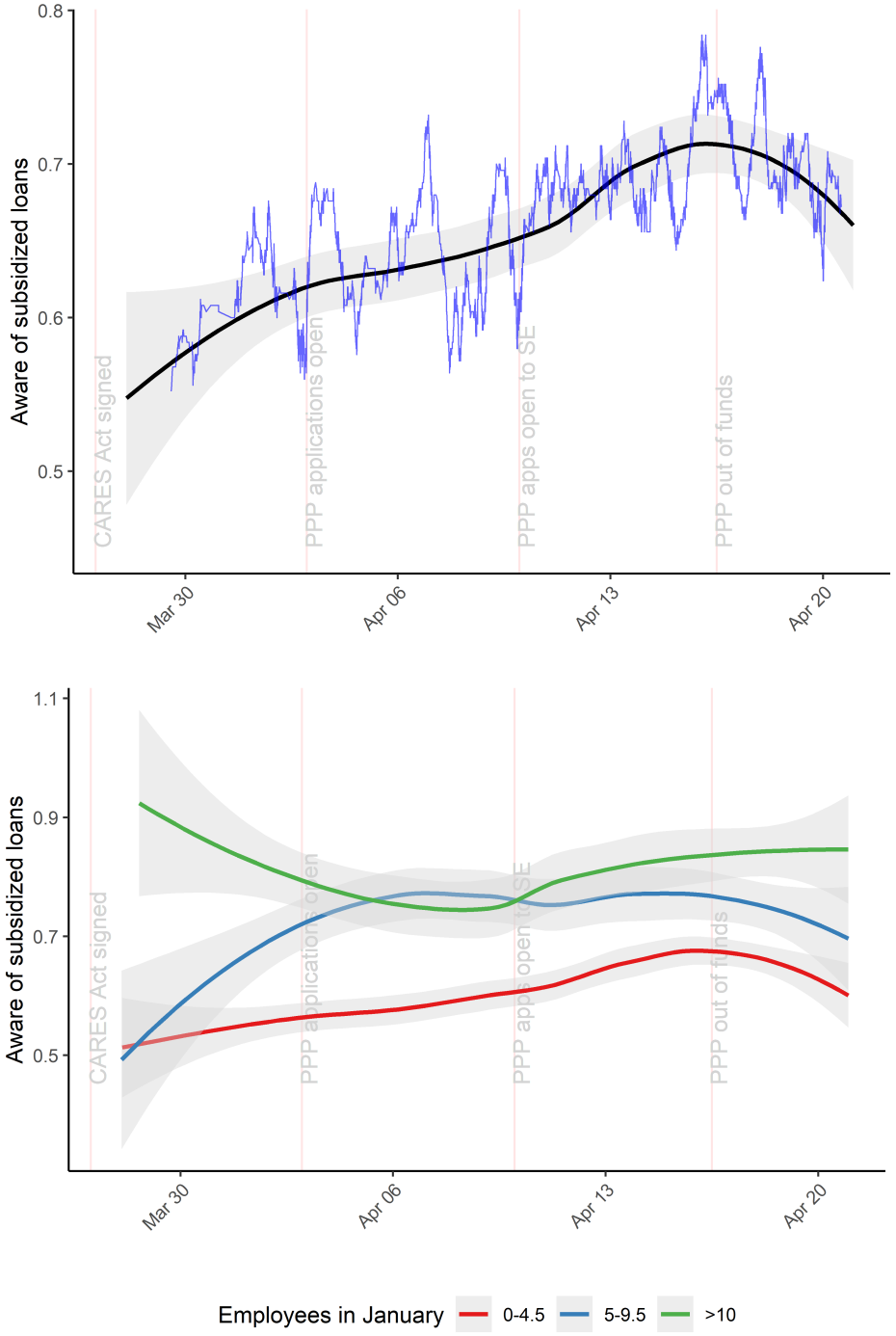
Note: In the top panel, the black line is fit using locally weighted smoothing regression, with the grey region showing the 95% confidence interval. The blue line shows a centered moving average over 250 responses. The bottom panel shows loess regression lines over time by business size bin.

Figure 10: 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 11: 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.

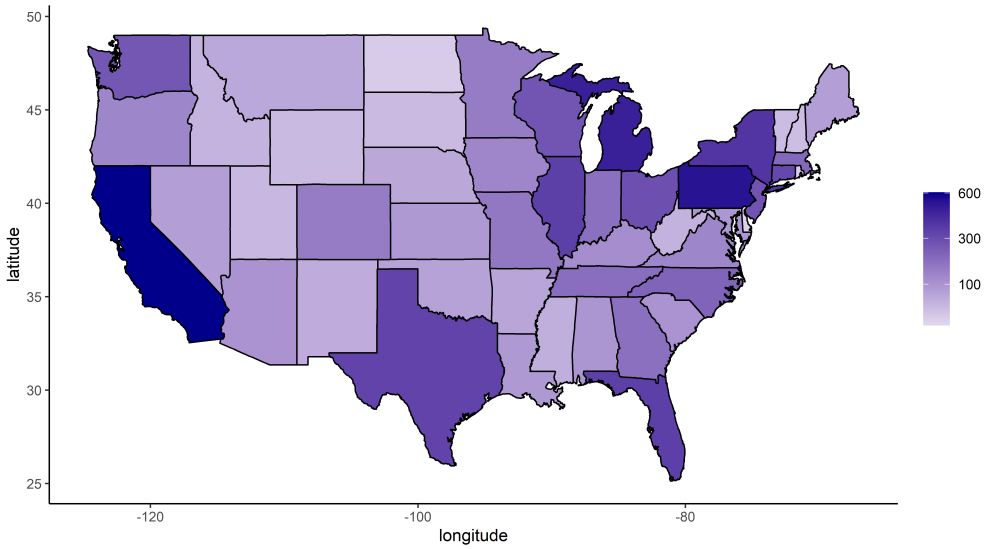
A Appendix

Table 5: Valid survey responses by day

Date	N
2020-03-28	91
2020-03-29	103
2020-03-30	102
2020-03-31	113
2020-04-01	324
2020-04-02	390
2020-04-03	285
2020-04-04	296
2020-04-05	188
2020-04-06	270
2020-04-07	282
2020-04-08	543
2020-04-09	588
2020-04-10	443
2020-04-11	426
2020-04-12	266
2020-04-13	375
2020-04-14	397
2020-04-15	446
2020-04-16	475
2020-04-17	425
2020-04-18	461
2020-04-19	413
2020-04-20	346

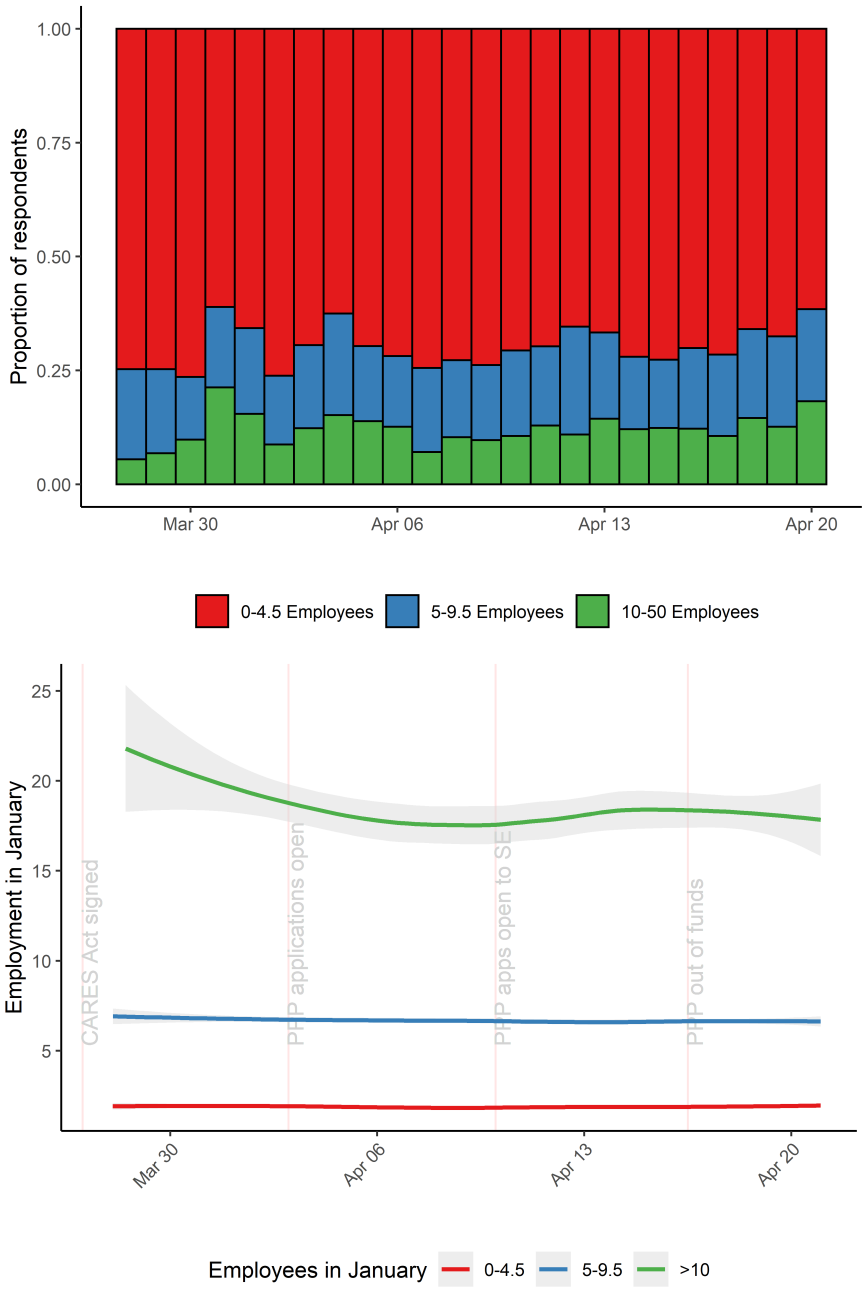
Note: Figure shows number of valid survey responses by day.

Figure 12: Distribution of surveys across the United States



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

Figure 13: 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.