The Effects of COVID-19 on U.S. Small Businesses: Evidence from Owners, Managers, and Employees

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Abstract. We analyze a large-scale survey of small business owners, managers, and employees in the United States to understand the effects of the COVID-19 pandemic on those businesses. We explore two waves of the survey that were fielded on Facebook in April 2020 and December 2020. We document five facts about the impact of the pandemic on small businesses. (1) Larger firms, older firms, and male-owned firms were more likely to remain open during the early stages of the pandemic with many of these heterogeneities persisting through the end of 2020. (2) At businesses that remained open, concerns about demand shocks outweighed concerns about supply shocks though the relative importance of supply shocks grew over time. (3) In response to the pandemic, almost a quarter of the firms reduced their prices with price reductions concentrated among businesses facing financial constraints and demand shocks; almost no firms raised prices. (4) Only a quarter of small businesses had access to formal sources of financing at the start of the pandemic, and access to formal financing affected how firms responded to the pandemic. (5) Increased household responsibilities affected the ability of managers and employees to focus on their work, whereas increased business responsibilities impacted their ability to take care of their household members. This effect persisted through December 2020 and was particularly strong for women and parents of school-aged children. We discuss how these facts inform our understanding of the economic effects of the COVID-19 pandemic and how they can help design policy responses to similar shocks.

1. Introduction

The COVID-19 pandemic and associated public health interventions have led to large changes in business and work environments. Government orders forced many in-person establishments to close suddenly, infection risks led to accelerated adoption of modern sales and communication technologies, and school closures placed increased childcare duties on many working parents. These forces put particular pressures on the owners, managers, and employees of small businesses for which central responsibilities are often shared between only a few individuals. However, whereas these small businesses are a key source of employment in the United States and an explicit focus of many policy efforts, they are often underrepresented in traditional data sources (see Buffington et al.

2020). In addition, to the extent that official data are available at all, it is often only released after a considerable time lag, reducing its usefulness in guiding policy responses in real time. This presents important challenges for researchers and policymakers hoping to understand and respond to the aggregate and distributional effects of large economic shocks, such as COVID-19, on the performance of small businesses.

In this paper, we report findings from a large and comprehensive survey of owners, managers, and employees of U.S. small businesses during the COVID-19 pandemic and extract insights into the effects of COVID-19 on those businesses. A first wave of the survey was conducted in late April 2020, followed by a second, smaller survey wave in early December 2020. Having information on firms from both points in time puts us in a unique

position to compare the immediate and medium-run effects of the pandemic. The survey waves were fielded through the Facebook platform, targeting Facebook business page administrators, frequent sellers on its e-commerce platform Marketplace, and the general user population. This sampling frame allowed us to reach owners, managers, and employees of small businesses as well as self-employed individuals, providing us with a unique ability to compare and contrast the effects of the pandemic across numerous small business stakeholders.

The April survey, which is the main focus of this paper, contained 136 questions and obtained complete responses from 28,188 businesses and 9,720 employees, making it one of the largest undertakings to describe the early effects of the COVID-19 crisis on small businesses. The smaller December wave obtained complete responses from 5,718 businesses. Whereas no survey sample is fully representative because of selection in both the sample that can be reached as well as who responds, we nevertheless find that our respondents broadly match the characteristics of small businesses in the United States as described by the Census Bureau (see Online Appendix Tables A.1 and A.2).

The survey first asked respondents if they are an employee or whether they own, manage, or operate a business; owners/managers were then asked whether their business was currently operational. These initial questions were used to direct respondents to different sections of the survey, each focusing on a different aspect of COVID-19's effects on businesses. Respondents also answered a core set of demographic and business questions. Full details on the survey methodology are provided in Section 2.

From our rich data, we distill five facts on the effects of COVID-19 on U.S. small businesses and discuss how these facts inform our understanding of the economic effects of the pandemic as well as the operation of small businesses more broadly. These facts are

1. Larger firms, older firms, male-owned firms, firms that relied less on in-person interactions, and firms that advertised on Facebook were more likely to remain open during the early stages of the pandemic. Older firms were also more likely to be open as of December 2020, suggesting a large and persistent impact of the crisis on young small businesses.

2. Firms that remained open in April 2020 expected a variety of challenges over the subsequent six months. Concerns related to demand shocks outweighed concerns related to supply shocks, in particular for smaller firms and firms in regions with greater lockdown restrictions. Over time, the relative importance of concerns about supply shocks increased.

3. In response to the pandemic, almost a quarter of firms reduced prices, whereas only about 4% of firms increased prices. Firms facing demand shocks and financial constraints were more likely to reduce prices, whereas firms facing supply shocks were disproportionately likely to increase prices.

4. Only around a quarter of small businesses had access to formal loans from financial institutions when entering the pandemic with many businesses relying largely on informal sources of financing. Older and larger firms were more likely to have access to formal sources of financing, and firms managed by men had more access to informal sources of credit.

5. Household responsibilities, such as childcare, led to large incremental burdens for small business owners and employees. Similarly, increased business responsibilities substantially impacted individuals' abilities to focus on their household obligations during the pandemic. These negative effects largely persisted through the end of 2020, particularly for women-led businesses. A sizable share of employees reported household responsibilities led to unemployment with these responsibilities being the greatest burden for female employees at midsized firms. Female employees were also disproportionately more likely to drop out of the labor force during the pandemic.

1.1. Contributions to the Literature

Our findings expand upon a growing body of research studying the economic implications of the COVID-19 pandemic, including several contemporaneous efforts to use surveys to better understand the performance of U.S. small businesses during this period.[1] For example, Bartik et al. (2020), Fairlie (2020), and Humphries et al. (2020a) document business closures and mass layoffs early in the pandemic (see also Bartlett 2022, Campello et al. 2020). In addition to exploring the pandemic's effect on general business performance, our paper focuses on understanding the specific shocks hitting small businesses, the effects on their price-setting behavior, and the importance of changes in the interaction of household and work responsibilities. Our survey is also unique in providing the perspectives of both small business owners/managers and their employees. Our large sample size allows us to document important heterogeneities across affected firms with a particular focus on exploring differences across firm size, age, industry, ability to operate remotely, the types of shocks they face, and local COVID case intensity and lockdown policies. We also study differential impact across genders of both owners and employees. Finally, the availability of data from the December 2020 wave of the survey puts us in a unique position to explore the medium-run persistence of some of the observed patterns. For each of our five facts, we discuss how our findings relate to and expand upon the contemporaneous literature.

2. Survey Details

The survey was conducted alongside Facebook's ongoing data-collection efforts with the World Bank and the

Organisation for Economic Co-operation and Development on the future of business and in partnership with the Small Business Roundtable. In this section, we describe the structure of the survey and the sampling methodology.

2.1. Sampling and Screening: Wave 1

The first survey wave was fielded on the Facebook platform between April 20 and 28, 2020, to a stratified probability-based random sample of U.S. Facebook users.[2] Every monthly active U.S. Facebook account was eligible for the survey[3] though we oversampled accounts of Facebook business page administrators and active sellers on Facebook Marketplace.[4] This sampling frame led to a high chance of identifying individuals who own or manage small businesses, many of which have a Facebook presence. Respondents from the general Facebook population were more likely to be employees at both small and large enterprises.

Sampled users received an invitation to participate in an online survey at the top of their news feed. This invitation was shown for three successive logins. After accepting the invitation, users were shown an introductory text and screening questions to understand their possible roles within the business (see Online Figure A.1 for more details). The introductory text described that participation in the survey was voluntary and uncompensated, responses would be kept confidential, and aggregated results from the survey might be shared publicly.

The survey invitation was sent to about 1.9 million Facebook users, and 66,297 eligible individuals completed at least part of the survey. Our baseline sample consists of the 37,908 respondents (28,188 from business owners/managers and 9,720 from employees) who completed the entire survey though we have verified that all facts are consistent within the broader sample of respondents that completed the survey partially. There was no screening on firm size though the sampling frame ensured that most respondents were associated with small businesses. About 68% of owner/manager respondents were associated with businesses with fewer than 10 employees, and 93% were associated with businesses with fewer than 500 employees. On the other hand, about 25% of the employee sample worked at businesses with more than 500 employees. We verify that our findings are robust to excluding responses pertaining to businesses with more than 500 employees, the threshold to be eligible for a Small Business Administration loan.

2.2. Survey Instrument: Wave 1

The survey questionnaire was designed with a complex flow to reduce the burden on respondents while addressing a wide range of important social and economic issues (see Online Figure A.2). A respondent could skip any question in the survey with no prompts to answer, and the questionnaire flow would take them to the next logical question. The survey started with screening questions, followed by topic modules and a core set of questions addressed to all respondents. Modules were assigned to respondents in a semirandom fashion based on their business role and whether their business was operational. First, respondents were asked preliminary questions to classify their employment status, role in the firm, and operational status of the firm. Based on this, respondents were classified into business owners and managers (including operators of personal businesses) and employees (including both employed or recently unemployed individuals).[5] Individuals not fitting any of these categories were not asked further questions. Next, business owners and managers of firms that were *operational* were randomly assigned to one of five thematic modules. Employees (employed or unemployed) were surveyed about the businesses they worked for and the impact on the interaction of their work and household responsibilities. Finally, all respondents answered questions about their demographics and firm characteristics.

2.3. Sampling, Screening, and Survey Instrument: Wave 2

Between November 20 and December 20, 2020, Facebook fielded a second wave of the survey using a similar sampling procedure as the first wave. Many of the questions included in this second wave were similar to those of the first wave, whereas other questions were dropped and new questions were introduced. The survey sampling aimed to collect a smaller number of responses than the first wave, and we observed complete responses from about 5,718 small business owners and managers. Whereas this second wave of the survey is not the primary focus of our analysis, we use it to compare survey responses from April 2020 to those from December 2020, allowing us to explore the persistence of the patterns under investigation.

3. Facts About the Effects of COVID-19 on Small Businesses

In this section, we present five new facts about the effects of the COVID-19 pandemic on U.S. small businesses and their employees. First, we document how business operations have been impacted by studying the determinants of a business's decision to cease operations during the pandemic. For businesses that continued to operate during the pandemic, we discuss the types of shocks these businesses faced, their financial conditions and access to external and internal sources of finance, and their product pricing decisions.

Table 1. Variable Definitions

Variable	Definition
	Panel A: Firm variables
Age	Number of years since business started.
Industry	Self-reported industry of the owner or manager.
Gender of owner	Gender of owner or manager that responded to the survey.
Sales	Value of total revenues (sales) of the business in 2019.
In-person interactions	Share of business's interactions between clients/customers and employees/workers that need to be conducted in the same physical location.
Advertising	Dummy that takes a value of one if the business advertised on Facebook at any point prior to April 2020. Respondents are classified into ones that have no matched Facebook page ("no matched firm"), businesses that have a matched firm page on Facebook but have not advertised previously ("matched firm, no advertising"), or businesses that have a matched firm page on Facebook and have advertised before April 2020 ("matched firm, advertising").
Access to financing	Source of capital or funds to which the business has access. Formal financing is a dummy that takes a value of one if the business has a line of credit or loan from a financial institution. Informal finance is a dummy that takes a value of one if the business has access to community donations, personal savings, funds from family and friends, loans from retirement funds, or unemployment benefits. Firms that have access to both formal and informal sources of finances or neither of the two are classified as "both" and "none," respectively.
Type of shock	Based on the business's expectation of their biggest challenge in the next few months. Demand shock is a dummy that takes a value of one if the business reports struggling with "lack of demand," "repaying loans," or "cash flow." Supply shock is a dummy that takes a value of one if the business reports struggling with "inventory," "finding supplies," "logistics," "lack of staff," or "government health authority orders." We classify the business shock as other/none if they report the shock as "other" or "none of the above."
COVID cash flows	Based on the cash flow of the business in the past 30 days. "Outflow <= Inflow" is a dummy that takes a value of one if the business reported the cash outflow was less than inflow or that the outflow was about the same as inflow. "Outflow > Inflow" is a dummy that takes a value of one if the business reported its cash outflow was greater than inflow.
Cash flow concerns	Cash flow concerns are "low" if the business reports they are somewhat concerned or not concerned about the business' cash flow situation over the next three months and "high" if the respondent says they are very concerned about the cash flow situation.
Payment struggles	A business is classified as facing "some" payment struggles if it reports struggling with employee/worker salaries and wages, bills or accounts payable, debt or loans, rent or lease, taxes, employee/worker benefits, or hazard pay. If they do not face any payment struggles, the dummy variable "none" takes a value of one.
HH responsibilities	Household responsibilities are based on activities that the respondent had to spend more time on since the beginning of the pandemic. "Childcare" takes a value of one if the respondent had to provide daycare for children in the household or education for school-aged children. "Adult care" takes a value of one if the respondent had to care for a dependent adult or household members who were self-isolating. "Other" takes a value of one if the respondent spent more time on housework.
HH expenses	Based on the respondent's reply to how easy or difficult has it been to pay the household's usual expenses. Respondents that reply "very easy" or "easy" are classified as easy, "neither easy nor difficult" are classified as neutral, and "difficult" or "very difficult" are classified as difficult.
Time on HH activities	Number of hours spent per day on domestic or household care activities. "Low" = less than three hours. "Medium" = between three and six hours. "High" = greater than six hours.
COVID case intensity	Cumulative confirmed cases per capita obtained from Johns Hopkins University (source). Case intensity is divided into terciles (low, medium, and high) of business respondents.
Decline mobility	Terciles of changes in median distance (in meters) traveled from the geohash-7 of the home obtained from Safegraph (source). We first calculate the median for each device and then find the median across all devices. The decline in mobility for the April survey is measured between mid-February and the start of May, and for the December survey, it is measured between mid-February and the start of December.

Table 1. (Continued)

Panel B: Employee variables	
Age	Age of employee.
Industry	Self-reported industry of employee.
Firm size	Number of employees at the employer of the respondent.
Sales	Value of total revenues (sales) of the business in 2019.
Gender	Gender of the employee that responded to the survey.
Education	Highest level of education of the employee responding to the survey.
Remote work	Ability of the employee to work remotely.
HH responsibilities	Household responsibilities are based on activities that the respondent had to spend more time on since the beginning of the pandemic. "Childcare" takes a value of one if the respondent had to provide daycare for children in the household or education for school-aged children. "Adult care" takes a value of one if the respondent had to care for a dependent adult or household members who were self-isolating.
Time on HH activities	Number of hours spent per day on domestic or household care activities. "Low" = less than three hours. "Medium" = between three and six hours. "High" = greater than six hours.
Government assistance	Dummy that takes a value of one if the employee applied for any government assistance during the pandemic.

We also study the interaction between business and household responsibilities of both small business owners and employees, a particularly important dimension of the effects of the COVID-19 pandemic.

3.1. Business Closures

We first analyze the determinants of a business's decision to shut down or remain operational during the pandemic and how these changed between the April 2020 and December 2020 waves of the survey. Columns (1)–(3) of Table 2 focus on whether a business remained open at the end of April 2020, providing us with information on the immediate short-term effects of the COVID-19 crisis on small business openings. Different rows highlight heterogeneity across different firm characteristics. Columns (4)–(6) explore whether a business was open in December 2020, a time when many pandemic-related restrictions across the United States had been lifted (USA Today 2020). This analysis allows us to assess the medium-run effects of the crisis on firm operations. Columns (1) and (4) present sample means for the full sample as well as across different firm characteristics. Columns (2) and (5) provide corresponding multivariate regression results when all firm characteristics are included, whereas columns (3) and (6) present the associated heteroskedasticity robust standard errors. We continue using heteroskedasticity robust standard errors in all regressions.

We start by looking at the April 2020 wave before comparing the results to the December 2020 wave. Only about 65% of small businesses in our sample remained open at the end of April 2020, a number that is comparable to the 43% of businesses that reported being closed in late March 2020 in the survey studied by Bartik et al. (2020). Older businesses, larger businesses, and businesses owned by men were more likely to remain open during the early months of the pandemic. We show later in this paper that younger

firms faced greater demand shocks and women faced increased household responsibilities during the COVID-19 pandemic, which could explain the differences in closure rates of businesses.

Furthermore, businesses that required more in-person interactions to operate and those operating in regions with a higher COVID case intensity were less likely to be open in April 2020, potentially because of government restrictions. However, we found no differential effect by the average decline in peoples' mobility, which provides a proxy for the overall extent of and compliance with social distancing restrictions. Businesses in the hospitality and service sectors had the largest probability of closing by April 2020, whereas firms in the information and communications technology (ICT) sector were most likely to remain open. Still, 20% of ICT businesses had closed by April 2020. We also see that firms that advertised via Facebook before the pandemic were more likely to continue operating in the pandemic. This finding is consistent with the interpretation that firms with more experience of online advertising had a comparative advantage in operating during periods of sustained closures of physical businesses.[6]

The multivariate regression reported in column (2) suggests that most of these relationships persist when controlling for the other observable firm characteristics. The exception is that, when controlling for both firm age and firm sales, which are highly correlated, differences in age largely disappear, and it is differences in firm size that are associated with large differences in a business's propensity to remain open in April 2020.

By December 2020, almost nine months after the start of the pandemic, many of the businesses that were closed in April 2020 had reopened. However, nearly 18% of small businesses in our sample, corresponding to about half of the businesses shut in April 2020, remained closed. These results are quite

Table 2. Share of Businesses Open

	April 2020			December 2020		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
All	0.648			0.825		
By age						
<2 years	0.575	—	—	0.737	—	—
2–5 years	0.623	0.002	(0.010)	0.826	0.089***	(0.019)
5+ years	0.681	0.017**	(0.008)	0.883	0.153***	(0.015)
By industry						
Agriculture or mining	0.762	0.184***	(0.018)	0.827	0.005	(0.030)
Construction	0.733	0.079***	(0.013)	0.904	0.074***	(0.020)
Hotel/café/restaurant	0.560	−0.016	(0.013)	0.814	0.027	(0.023)
Information/communications	0.795	0.117***	(0.012)	0.857	0.035*	(0.021)
Manufacturing	0.796	0.115***	(0.016)	0.883	0.044*	(0.025)
Retail and wholesale trade	0.717	0.120***	(0.009)	0.874	0.066***	(0.016)
Services	0.587	−0.001	(0.008)	0.844	0.040***	(0.015)
Transportation and logistics	0.694	0.067***	(0.018)	0.854	0.004	(0.036)
Other	0.614	—	—	0.796	—	—
Gender of owner						
Female	0.620	—	—	0.825	—	—
Male	0.685	0.024***	(0.006)	0.856	0.014	(0.010)
By sales						
<$50K	0.544	—	—			
$50K–$1M	0.669	0.149***	(0.007)			
>$1M	0.812	0.291***	(0.008)			
By in-person interaction						
More than half	0.538					
Half or less	0.757	0.228***	(0.006)			
Advertising						
No matched firm	0.620	—	—			
Matched firm, no advertising	0.580	−0.003	(0.012)			
Matched firm, advertising	0.664	0.070***	(0.009)			
COVID case intensity						
Low	0.666	—	—	0.844	—	—
Medium	0.665	−0.014**	(0.007)	0.846	0.016	(0.013)
High	0.615	−0.059***	(0.007)	0.824	−0.005	(0.013)
Decline in mobility						
Low	0.644	—	—	0.832	—	—
Medium	0.650	−0.001	(0.007)	0.835	0.006	(0.013)
High	0.653	−0.002	(0.007)	0.846	0.015	(0.013)

Notes. The dependent variable is a dummy that takes a value of one if the business is operational or engaging in any revenue-generating activities at the time of the survey (April 2020 or December 2020). The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.

  ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

surprising given earlier surveys on reopening expectations among closed businesses: in the April 2020 wave of our survey, 67.9% of closed businesses reported that they planned to reopen in the future, whereas 27.3% were unsure, and only 4.9% reported that they did not plan to reopen. Similarly, Balla-Elliott et al. (2022) show that, in May 2020, most closed businesses reported plans to reopen within days of restrictions being lifted, and only 18% of closed businesses expected they would delay their opening at least one month after restrictions ended. In contrast to these expectations, we see a sizable share of closed businesses as of December despite there being few remaining restrictions on operations in most of the United States.

By December 2020, we find no remaining correlation between either cumulative cases or mobility declines and business openings. Similarly, the differences in the probability of being open between firms in different industries had declined substantially, in large part because of a substantial reopening of businesses in the hospitality and service sectors. However, younger businesses remained substantially more likely to be shut, both unconditionally as well as conditional on other firm characteristics, suggesting a persistent impact of the pandemic on the youngest small businesses. Note that we do not observe all covariates from the April 2020 wave in the December 2020 wave. Among others, we do not have information on the business size. Because business age and size are

highly correlated, the higher share of closed businesses among younger firms could reflect the larger impact of the pandemic on smaller businesses.

3.2. Supply or Demand Shocks

An important input to designing policy responses to an economic crisis is a good understanding of whether the economy is largely facing a supply shock or a demand shock. A supply shock reduces the economy's ability to produce goods and services at a given price. On the other hand, a demand shock corresponds to a reduction in consumers' willingness to purchase these goods and services at a given price. In particular, conventional fiscal policy tools, such as stimulus checks, can be effective to counteract the effects of negative demand shocks, whereas these policies are less effective in the presence of supply shocks and may even lead to inflationary pressures. Similarly, whereas supply and demand shocks have the same effect on quantities, they have opposing effects on prices and, therefore, invite different monetary policy responses.

During the COVID-19 pandemic, businesses were plausibly affected by both supply shocks resulting from supply chain disruptions and demand shocks resulting from households' unwillingness or inability to purchase certain goods and services. An emerging literature is starting to discuss the relative importance and possible interaction between these types of shocks (see, for example, Baqaee and Farhi 2021, 2022; Guerrieri et al. 2020). Our survey can advance this literature by shedding light on whether small businesses perceived the challenges of COVID-19 to be primarily a supply or a demand shock, how these perceptions changed over time, and how they differed across industries and other firm characteristics.

In particular, in both waves of the survey, operational businesses were asked, "What do you expect this business's biggest challenge to be in the next few months?". We take the responses to this question and classify them to either correspond to a demand or a supply shock and then study the distribution of these shocks across firm characteristics.[7]

Table 3, Panel A, shows that, in April 2020, 54.5% of businesses were primarily facing a demand shock, and 30.0% of businesses were facing a supply shock. The remainder either reported not facing any challenges or an "other" challenge that we could naturally not classify. This is consistent with the findings of Balleer et al. (2020), who study the price-setting behavior of a sample of (relatively large) German firms to infer that demand shocks dominated in the German context. Larger businesses were disproportionately likely to be concerned about supply shocks, whereas at smaller businesses, concerns about demand shocks dominated. Firms with access to formal (or both formal and informal) financing were more likely to report facing demand shocks. All else equal, businesses in areas with more COVID-19 cases and larger mobility declines were more likely to be concerned about demand shocks, consistent with households in those regions being less willing to consume goods or services that required in-person interaction. Supply shocks were disproportionately felt by firms in the retail/wholesale sector, whereas demand shocks dominated for firms in the ICT sector.

In December 2020, the share of businesses that were primarily worried about demand shocks had declined to 45.7%, whereas the share of firms facing a supply shock had increased somewhat to 33.0% (Table 3, Panel B). In the multivariate regressions for December, businesses operated by men were less likely to report facing demand shocks and more likely to report facing a supply shock after conditioning for industry and location. Younger firms continued reporting higher levels of demand shocks. These differences could explain the prolonged closure of younger businesses in the pandemic as documented in the previous section. The relative importance of supply and demand shocks across different industries were broadly the same as in April 2020 though the relative importance of supply shocks had increased disproportionately in the construction sector.

The types of shocks that businesses face are closely tied to the optimal policy responses desired by these firms. In Online Table A.3, we explore responses to a question in the April 2020 wave that asked businesses which policies would be most useful in supporting them through the pandemic. Businesses faced with a demand shock were more likely to ask for support through wage/utility subsidies, loan guarantees or deferrals, and tax/rent deferrals. Businesses facing supply shocks, on the other hand, were more likely to request support for taking care of their household.

3.3. Price-Setting Response

A key mechanism used by firms to respond to economic shocks is to adjust their product pricing. Price changes can reflect shifts in demand and supply and can provide us with additional information on their relative importance (a supply shock would generally lead to an increase in prices, whereas a reduction in demand would motive price reductions). In addition, these pricing responses are a direct determinant of aggregate changes in the price level and are, therefore, important to understand, in particular for monetary policymakers.

In the April 2020 wave of the survey, firms were asked whether they had reduced or increased their prices in response to the pandemic. Table 4 shows that only 3.9% of firms had increased prices on their products or services, whereas 24.2% had reduced prices, consistent with the relative dominance of demand

Table 3. Type of Shock Faced by Business

	Type of shock = demand			Type of shock = supply		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
			Panel A: April 2020			
All	0.545			0.300		
By age						
<2 years	0.571	—	—	0.271	—	—
2–5 years	0.603	0.027	(0.028)	0.261	−0.003	(0.025)
5+ years	0.526	−0.034	(0.025)	0.317	0.018	(0.022)
By industry						
Agriculture or mining	0.462	0.003	(0.058)	0.341	0.016	(0.052)
Construction	0.529	0.077*	(0.041)	0.327	−0.022	(0.037)
Hotel/café/restaurant	0.578	0.090**	(0.042)	0.346	0.025	(0.039)
Information/communications	0.613	0.076**	(0.035)	0.203	−0.065**	(0.029)
Manufacturing	0.511	0.129**	(0.055)	0.365	−0.075	(0.048)
Retail and wholesale trade	0.519	−0.018	(0.028)	0.379	0.142***	(0.026)
Services	0.598	0.090***	(0.024)	0.250	−0.006	(0.021)
Transportation and logistics	0.478	0.040	(0.054)	0.355	0.004	(0.050)
Other	0.501	—	—	0.291	—	—
Gender of owner						
Female	0.554	—	—	0.287	—	—
Male	0.539	−0.022	(0.018)	0.313	0.030*	(0.016)
By sales						
<$50K	0.577	—	—	0.251	—	—
$50K–$1M	0.599	−0.007	(0.021)	0.277	0.038**	(0.019)
>$1M	0.460	−0.124***	(0.028)	0.385	0.130***	(0.026)
By in-person interaction						
More than half	0.529	—	—	0.344	—	—
Half or less	0.559	0.023	(0.019)	0.269	−0.030*	(0.017)
Access to financing						
None	0.547	—	—	0.276	—	—
Formal	0.577	0.064*	(0.033)	0.309	−0.002	(0.030)
Informal	0.568	−0.013	(0.021)	0.278	0.025	(0.018)
Both	0.634	0.101***	(0.026)	0.267	−0.030	(0.024)
COVID case intensity						
Low	0.509	—	—	0.334	—	—
Medium	0.555	0.035*	(0.021)	0.288	−0.021	(0.019)
High	0.571	0.041*	(0.021)	0.277	−0.047**	(0.019)
Decline in mobility						
Low	0.548	—	—	0.297	—	—
Medium	0.521	−0.031	(0.021)	0.317	0.031	(0.019)
High	0.565	0.042**	(0.021)	0.286	0.004	(0.019)
			Panel B: December 2020			
All	0.457			0.330		
By age						
<2 years	0.559	—	—	0.236	—	—
2–5 years	0.516	−0.028	(0.023)	0.291	0.056***	(0.020)
>5 years	0.418	−0.133***	(0.018)	0.382	0.147***	(0.016)
By industry						
Agriculture or mining	0.326	−0.122***	(0.039)	0.424	0.104***	(0.040)
Construction	0.334	−0.104***	(0.031)	0.493	0.164***	(0.032)
Hotel/café/restaurant	0.449	−0.031	(0.030)	0.389	0.104***	(0.029)
Information/communications	0.585	0.119***	(0.029)	0.229	−0.089***	(0.025)
Manufacturing	0.443	−0.005	(0.039)	0.412	0.093**	(0.038)
Retail and wholesale trade	0.488	−0.002	(0.023)	0.378	0.091***	(0.022)
Services	0.486	0.009	(0.021)	0.307	0.015	(0.019)
Transportation and logistics	0.360	−0.067	(0.048)	0.424	0.095*	(0.049)
Other	0.454	—	—	0.297	—	—
By gender of owner						
Female	0.493	—	—	0.299	—	—
Male	0.433	−0.045***	(0.014)	0.378	0.061***	(0.014)

Table 3. (Continued)

Panel B: December 2020						
By COVID case intensity						
Low	0.461	—	—	0.342	—	—
Medium	0.468	0.006	(0.018)	0.336	−0.008	(0.018)
High	0.461	0.005	(0.018)	0.323	−0.025	(0.018)
By decline in mobility						
Low	0.457	—	—	0.336	—	—
Medium	0.444	−0.011	(0.017)	0.344	0.001	(0.017)
High	0.488	0.042**	(0.018)	0.321	−0.033**	(0.018)

Notes. The dependent variable is based on the business's expectation of its biggest challenge in the next few months. We classified the business as primarily facing a demand shock if it responded that the biggest struggle would be "lack of demand," "cash flow," or "repaying loans." We classified the businesses as primarily facing a supply shock if it responded to be primarily struggling because of "inventory," "logistics (e.g., shipping, delivering services or goods)," "finding supplies," "lack of staff," or "government/health authority orders." Panel A uses the April 2020 wave of the survey and Panel B the December 2020 wave. Not all covariates are available in the December wave. The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.

  ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

shocks documented in the prior section. Businesses that reported primarily facing demand shocks were more likely to reduce prices, whereas businesses reporting facing supply shocks were more likely to increase prices. On average, hotels and restaurants were more likely to increase prices, whereas businesses in the transportation and logistics sector were more likely to reduce prices; these relationships are true both unconditionally and conditional on other observable firm characteristics. Older firms were the least likely to reduce their prices. This is consistent with older firms reporting lower levels of demand shocks.

Table 4 also shows how firms' decisions to adjust prices varied with their cash flow situations. In April 2020, cash outflows were higher than cash inflows for 41.8% of businesses. Outflows equaled inflows for 19.8% of businesses, and inflows exceeded outflows for 23.2% of businesses. The remaining businesses reported that they did not know if their inflows exceeded their outflows. Of the surveyed firms, 78.2% reported being at least somewhat concerned about their cash flow situation over the next three months. Table 4 highlights that businesses facing cash flow concerns (either reporting a high concern for future cash flows or reporting current outflows greater than inflows) were more likely to *reduce* their product prices. Furthermore, businesses struggling with making their payments also reduced their prices.[8]

These results on the relationship between financial constraints and price changes directly speak to an ongoing debate in the academic literature. In particular, our findings are in line with evidence in Kim (2020), who shows that, even outside a pandemic, businesses facing a credit crunch often temporarily decrease their prices. In contrast, Gilchrist et al. (2017) conclude that financial constraints lead to an increase in product prices. This difference in results is potentially driven by differences in the sample of firms: Gilchrist et al. (2017) focus on firms in the S&P500, whereas our sample focuses on small businesses.

3.4. Access to External Finance and Applications for Aid

We next explore the distribution of financing sources across small businesses and analyze how access to formal and informal sources of financing affected firm behavior during the pandemic. Such information on the financing of small private businesses in the United States has been largely unavailable.[9] The findings from our survey can, thus, contribute to a better understanding of small business finances even beyond the immediate setting of the pandemic.

We start by exploring the funding sources of small businesses before the pandemic. In particular, we asked businesses whether they had access to a loan or line of credit from a bank or other financial institution. Column (1) of Table 5 shows that only 26.5% of businesses had access to such formal sources of credit.[10] Older firms; larger firms; and firms in the capital-intensive manufacturing, construction, and agricultural sectors were more likely to have access to formal financing before the pandemic, both unconditionally and conditional on other firm characteristics.[11]

In columns (4)–(6) of Table 5, we explore access to informal sources of funding for small businesses, which include personal savings, funds from family and friends, retirement funds, unemployment benefits, and community donations. About 63.1% of businesses had access to at least some source of informal financing. Conditional on other firm characteristics, businesses in construction, manufacturing, and transportation industries were least likely to have access to informal financing. The largest firms (by sales) were also less likely to rely on informal sources of funding.

Table 4. Pricing Response to the Pandemic

	Price increases			Price decreases		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
All	0.039			0.242		
By age						
<2 years	0.044	—	—	0.284		
2–5 years	0.035	0.002	(0.011)	0.277	−0.027	(0.026)
5+ years	0.036	−0.005	(0.010)	0.219	−0.050**	(0.022)
By industry						
Agriculture or mining	0.068	0.026	(0.029)	0.205	0.032	(0.050)
Construction	0.061	0.024	(0.018)	0.221	0.034	(0.034)
Hotel/café/restaurant	0.067	0.038*	(0.020)	0.271	0.038	(0.038)
Information/communications	0.040	0.007	(0.013)	0.257	0.057*	(0.031)
Manufacturing	0.026	−0.001	(0.020)	0.202	−0.018	(0.042)
Retail and wholesale trade	0.042	0.004	(0.010)	0.259	0.042*	(0.023)
Services	0.031	0.001	(0.008)	0.258	0.049**	(0.021)
Transportation and logistics	0.046	0.018	(0.023)	0.324	0.141***	(0.049)
Other	0.027	—	—	0.194	—	—
By sales						
<$50K	0.047	—	—	0.265	—	—
$50K–$1M	0.024	−0.033***	(0.008)	0.254	−0.016	(0.019)
>$1M	0.055	−0.009	(0.012)	0.198	−0.029	(0.024)
By in-person interaction						
More than half	0.046	—	—	0.230	—	—
Half or less	0.033	−0.012	(0.007)	0.250	0.035**	(0.016)
Gender of owner						
Female	0.030	—	—	0.243	—	—
Male	0.047	0.016**	(0.007)	0.242	0.008	(0.015)
Type of shock						
Supply	0.061	—	—	0.218	—	—
Demand	0.027	−0.033***	(0.009)	0.281	0.006	(0.018)
Unclear	0.039	−0.016	(0.013)	0.138	−0.056***	(0.021)
COVID cash flows						
Outflow < = inflow	0.046	—	—	0.199	—	—
Outflow > inflow	0.029	−0.018**	(0.007)	0.296	0.034**	(0.016)
Cash flow concerns						
Low	0.043	—	—	0.183	—	—
High	0.032	−0.005	(0.008)	0.336	0.086***	(0.018)
Access to financing						
None	0.032	—	—	0.251	—	—
Formal	0.027	0.001	(0.012)	0.204	−0.034	(0.027)
Informal	0.042	0.006	(0.008)	0.246	−0.022	(0.018)
Both	0.054	0.018*	(0.011)	0.256	−0.002	(0.024)
Payment struggles						
None	0.038	—	—	0.153	—	—
Some	0.038	0.013	(0.008)	0.302	0.087***	(0.018)

Notes. The dependent variable in columns (1)–(3) ((4)–(6)) takes a value of one if the business increased (decreased) the average prices on its goods and services in the last 30 days. Results are from the April 2020 wave of the survey. The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.
  ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

These findings confirm conventional wisdom suggesting that smaller and younger firms largely rely on funds from owners and financing sources vary with firm size and age with larger and older firms shifting to formal debt (Berger and Udell 1998). Our survey allows researchers to quantify such relationships and uncover novel insights on how access to internal and external financing varies across other firm characteristics.

We also explore how businesses tackled their financing needs during the pandemic by asking them whether they applied for any government-provided loans or grants or for a new bank loan. By the end of April 2020, about 42.1% of firms had applied for a government grant, whereas 18.6% of firms had applied for a bank loan. We find broadly similar heterogeneities across firm characteristics in the firms' propensities to apply for government loans/grants and bank loans. Hotels, restaurants, and cafes were, by far, the most common applicants. Older firms, larger firms, firms that relied more on in-person

Table 5. Sources of Credit

	Credit from FI			Access to informal financing			COVID gov loan app			COVID bank loan app		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
All	0.265	—	—	0.631	—	—	0.421	—	—	0.186	—	—
By age												
<2 years	0.140	—	—	0.625	—	—	0.286	—	—	0.123	—	—
2–5 years	0.198	-0.013	(0.021)	0.630	0.007	(0.028)	0.408	0.025	(0.026)	0.178	-0.003	(0.023)
5+ years	0.325	0.034*	(0.018)	0.635	0.035	(0.024)	0.468	0.014	(0.022)	0.212	-0.022	(0.019)
By industry												
Agriculture or mining	0.319	0.122**	(0.050)	0.716	0.032	(0.055)	0.238	-0.163***	(0.054)	0.149	-0.038	(0.046)
Construction	0.371	0.075**	(0.037)	0.576	-0.079*	(0.041)	0.490	0.006	(0.040)	0.254	0.022	(0.040)
Hotel/café/restaurant	0.343	0.050	(0.038)	0.597	-0.059	(0.042)	0.640	0.131***	(0.040)	0.331	0.087*	(0.046)
Information/communications	0.265	0.050*	(0.030)	0.694	0.030	(0.034)	0.384	-0.025	(0.034)	0.181	-0.003	(0.030)
Manufacturing	0.435	0.131***	(0.048)	0.486	-0.163***	(0.056)	0.412	-0.060	(0.057)	0.233	0.003	(0.058)
Retail and wholesale trade	0.219	0.020	(0.022)	0.628	-0.035	(0.027)	0.341	-0.042*	(0.025)	0.152	-0.011	(0.022)
Services	0.251	0.024	(0.020)	0.649	-0.010	(0.024)	0.451	0.026	(0.023)	0.176	-0.006	(0.021)
Transportation and logistics	0.364	0.064	(0.050)	0.500	-0.151***	(0.054)	0.457	-0.001	(0.052)	0.270	0.016	(0.051)
Other	0.244	—	—	0.654	—	—	0.409	—	—	0.179	—	—
Gender of owner												
Female	0.229	—	—	0.622	—	—	0.404	—	—	0.157	—	—
Male	0.308	0.018	(0.015)	0.640	0.035**	(0.017)	0.445	-0.020	(0.017)	0.224	0.013	(0.016)
By in-person interaction												
More than half	0.328	—	—	0.639	—	—	0.504	—	—	0.238	—	—
Half or less	0.227	-0.051***	(0.016)	0.628	-0.020	(0.018)	0.371	-0.068***	(0.018)	0.155	-0.034**	(0.017)
By sales												
<$50K	0.105	—	—	0.659	—	—	0.223	—	—	0.080	—	—
$50K–$1M	0.310	0.181***	(0.017)	0.650	-0.025	(0.020)	0.562	0.277***	(0.020)	0.270	0.137***	(0.018)
>$1M	0.499	0.355***	(0.024)	0.567	-0.102***	(0.027)	0.529	0.235***	(0.026)	0.312	0.146***	(0.025)
Type of shock												
Supply							0.394	—	—	0.170	—	—
Demand							0.481	0.095***	(0.019)	0.230	0.060***	(0.018)
Unclear							0.237	-0.132***	(0.025)	0.067	-0.079***	(0.020)
Access to financing												
None							0.314	—	—	0.103	—	—
Formal							0.589	0.161***	(0.033)	0.382	0.205***	(0.038)
Informal							0.440	0.052***	(0.019)	0.197	0.013	(0.016)
Both							0.638	0.180***	(0.024)	0.459	0.285***	(0.029)

Notes. The dependent variable takes a value of one if the business has access to a loan or line of credit from a financial institution (columns (1)–(3)), informal financing (columns (4)–(6)), applied for a government grant during COVID-19 (columns (7)–(9)), or applied for a new bank loan during COVID-19 (columns (10)–(12)). Results are from the April 2020 wave of the survey. The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

interactions, and firms facing demand shocks were also more likely to make these applications. The observed differences are large: 52.9% of firms with sales above $1M applied for government funding, whereas only 22.3% of firms with sales below $50K did.

Our results in Table 5 also suggest that demand for new external financing, either through bank loans or government loans/grants, was concentrated among firms that already had preexisting bank loans. This is consistent with evidence that larger businesses had more information and were more likely to apply for government programs and banks were prioritizing customers with preexisting relationships even for government programs such as the Paycheck Protection Program (see Granja et al. 2020, Humphries et al. 2020b, Joaquim and Netto 2020, Howell et al. 2021).[12]

3.5. Business and Household Interactions

One central distinguishing feature between small businesses and larger corporations is that the operation of small businesses is often concentrated among relatively few individuals, often from within the same family unit. As a result, shocks to the households' domestic situations—such as the loss of a childcare provider—can have potentially large effects on the operation of small and medium-sized enterprises (SMEs). Similarly, the business's economic situation can have large effects on the owners' and managers' ability to focus on their household responsibilities. These interactions between business and work responsibilities were particularly important during the COVID-19 crisis, which featured dramatically increased household burdens for many individuals because of a combination of school closures, requirements to quarantine, and the unavailability of hired domestic help. Our survey is unique in its ability to quantify this important dimension of the operation of small businesses, which has, so far, not received much attention in the literature either before or during the pandemic.

3.5.1. Owner and Manager Responses. We first explore how the pandemic affected the interaction of business and household responsibilities for owners and managers of small businesses in both April 2020 (Table 6, Panel A) and December 2020 (Table 6, Panel B).

In both panels of Table 6, the dependent variable in columns (1)–(3) takes a value of one if the owner/manager reported that household responsibilities were affecting their businesses "a lot" or "a great deal." In April 2020, 31.9% of respondents stated that their household responsibilities substantially affected their ability to focus on work during the crisis. These numbers declined only slightly to 28.7% by December 2020, highlighting the persistent nature of the effect of

increasing household responsibilities on small businesses during the COVID-19 pandemic.

In April 2020, managers responsible for caring for children or dependent adults, managers who spent more time on household work, and managers who were struggling with household expenses were the most likely to report an adverse effect of household responsibilities on the business. In the unconditional comparisons, female managers were more likely to report an impact of household responsibilities on their ability to focus on their business. These relationships disappear when conditioning on the extent of household-related duties, consistent with women being disproportionately affected by such duties. By December 2020, the unconditional gap between men and women in the extent to which household responsibilities affected their abilities to focus on their businesses had increased from 6.3 percentage points to 10.2 percentage points.

In columns (4)–(6) of Table 6, the dependent variable takes a value of one if the manager reported that business responsibilities were affecting households "a lot" or "a great deal." On average, 29.6% of the respondents in April 2020 and 24.7% of respondents in December 2020 reported a substantial adverse impact of their business responsibilities on their household. Larger businesses in April and older businesses in December were more likely to report their work was affecting their household. Moreover, childcare duties and difficulties in paying household expenses had an adverse impact on the manager's household. These effects persisted through December 2020. However, whereas in April 2020, men and women reported that their job affected their household responsibilities by roughly equal amounts, by December 2020, men were less likely than women to continue reporting a large negative impact of their business on their household responsibilities. This reinforces our earlier finding that the gender gap in the effect of the pandemic on the interaction of work and household responsibilities increased as the pandemic progressed.

3.5.2. Employee Responses. Whereas the previous section focused on the perspectives of business owners and managers, we now analyze the relationships between business and household responsibilities for employees. The results presented in Table 7 are based on all employee respondents in our survey, including the approximately 25% of employees working for firms with more than 500 employees. We find that excluding employees working for firms with more than 500 employees does not alter our conclusions, suggesting similar effects for employees of large and small firms.

Employed individuals were asked questions similar to those asked of business owners and managers. Panel A of Table 7 shows that 24% of employees

Table 6. Business-Household Interactions (Owners and Managers)

	Impact of HH on business			Impact of business on HH		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
Panel A: April 2020						
All	0.319			0.296		
By age						
<2 years	0.385	—	—	0.302	—	—
2–5 years	0.380	0.010	(0.024)	0.325	0.009	(0.025)
5+ years	0.284	−0.014	(0.022)	0.287	−0.014	(0.022)
By industry						
Agriculture or mining	0.242	−0.040	(0.040)	0.185	−0.086**	(0.040)
Construction	0.256	−0.017	(0.032)	0.287	0.016	(0.036)
Hotel/café/restaurant	0.375	0.044	(0.034)	0.478	0.127***	(0.038)
Information/communications	0.321	0.037	(0.030)	0.251	−0.007	(0.030)
Manufacturing	0.282	0.019	(0.040)	0.264	−0.004	(0.043)
Retail and wholesale trade	0.325	0.000	(0.022)	0.298	0.007	(0.024)
Services	0.344	0.018	(0.020)	0.299	0.004	(0.021)
Transportation and logistics	0.355	−0.012	(0.043)	0.364	0.020	(0.050)
Other	0.290	—	—	0.267	—	—
Gender of owner						
Female	0.347	—	—	0.305	—	—
Male	0.284	−0.002	(0.015)	0.286	−0.011	(0.016)
By sales						
<$50K	0.363	—	—	0.272	—	—
$50K–$1M	0.335	−0.006	(0.018)	0.324	0.060***	(0.019)
>$1M	0.257	−0.025	(0.022)	0.314	0.098***	(0.023)
By in-person interaction						
More than half	0.317	—	—	0.335	—	—
Half or less	0.320	0.017	(0.015)	0.268	−0.023	(0.016)
HH responsibilities						
None	0.137			0.226		
Child care	0.515	0.229***	(0.017)	0.381	0.096***	(0.017)
Adult/HH member care	0.476	0.099***	(0.018)	0.388	0.068***	(0.018)
Other	0.401	0.017	(0.015)	0.321	−0.009	(0.016)
HH expenses						
Easy	0.177	—	—	0.163	—	—
Neutral	0.267	0.058***	(0.017)	0.245	0.078***	(0.017)
Difficult	0.473	0.204***	(0.019)	0.441	0.242***	(0.020)
Time on HH activities						
Low	0.176	—	—	0.227	—	—
Medium	0.424	0.151***	(0.017)	0.346	0.048***	(0.017)
High	0.667	0.326***	(0.026)	0.457	0.125***	(0.027)
COVID case intensity						
Low	0.287	—	—	0.273	—	—
Medium	0.325	0.022	(0.017)	0.297	0.016	(0.018)
High	0.348	0.027	(0.018)	0.318	0.019	(0.019)
Decline in mobility						
Low	0.312	—	—	0.304	—	—
Medium	0.310	−0.016	(0.017)	0.288	−0.010	(0.018)
High	0.334	−0.002	(0.017)	0.293	−0.011	(0.018)
Panel B: December 2020						
All	0.287			0.247		
By age						
<2 years	0.335	—	—	0.210	—	—
2–5 years	0.421	0.103*	(0.057)	0.344	0.147**	(0.059)
>5 years	0.276	0.009	(0.042)	0.281	0.142***	(0.042)
By industry						
Agriculture or mining	0.250	−0.164*	(0.093)	0.200	−0.055	(0.107)
Construction	0.259	−0.081	(0.084)	0.259	0.012	(0.096)
Hotel/café/restaurant	0.250	−0.109	(0.070)	0.364	0.069	(0.080)
Information/communications	0.276	−0.072	(0.060)	0.288	0.019	(0.068)

Table 6. (Continued)

			Panel B: December 2020			
Manufacturing	0.273	0.003	(0.108)	0.227	0.039	(0.095)
Retail and wholesale trade	0.364	0.022	(0.058)	0.247	−0.063	(0.056)
Services	0.299	−0.096**	(0.048)	0.271	−0.020	(0.053)
Transportation and logistics	0.200	−0.181*	(0.093)	0.100	−0.159	(0.098)
Other	0.286	—	—	0.230	—	—
By gender of owner						
Female	0.359	—	—	0.316	—	—
Male	0.257	−0.016	(0.037)	0.201	−0.098**	(0.038)
By HH responsibilities						
None		—	—		—	—
Child care	0.506	0.191***	(0.042)	0.323	0.067*	(0.040)
Adult/HH member care	0.508	0.162***	(0.046)	0.316	0.018	(0.043)
Other	0.405	0.025	(0.038)	0.262	−0.070*	(0.038)
By HH expenses						
Easy	0.191	—	—	0.184	—	—
Neutral	0.241	0.012	(0.045)	0.200	−0.007	(0.046)
Difficult	0.440	0.128***	(0.047)	0.373	0.180***	(0.048)
By time on HH activities						
Low	0.156	—	—	0.234	—	—
Medium	0.481	0.184***	(0.045)	0.308	0.011	(0.042)
High	0.688	0.361***	(0.070)	0.359	0.085	(0.073)
By COVID case intensity						
Low	0.307	—	—	0.310	—	—
Medium	0.316	0.008	(0.042)	0.238	−0.059	(0.046)
High	0.340	−0.000	(0.043)	0.271	−0.035	(0.046)
By decline in mobility						
Low	0.366	—	—	0.317	—	—
Medium	0.315	−0.030	(0.045)	0.257	−0.047	(0.048)
High	0.290	−0.034	(0.044)	0.249	−0.075	(0.048)

Notes. The dependent variable in columns (1)–(3) ((4)–(6)) takes a value of one if the business reported that the household (business) responsibilities affected the ability to focus on their business (household) during the COVID-19 pandemic "a lot" or "a great deal." Panel A uses the April 2020 wave of the survey and Panel B the December 2020 wave. Not all covariates are available in the December wave. The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

reported that their household responsibilities had affected their ability to focus on work "a lot" or "a great deal." This is particularly true for female employees, employees aged 25–45 years, employees that spend more time on household activities, and employees in regions with high a COVID prevalence. Similarly, younger employees, female employees, and employees working at larger firms reported that their work responsibilities had affected their ability to take care of their household "a lot" or "a great deal."

In Panel B of Table 7, we look at unemployed workers. About 6% of employees reported that their primary reason for unemployment was that they needed to take care of children or dependent adults. Once again, women and respondents who had to spend a lot of time on household activities were the most affected. Less than a quarter of our unemployed respondents were actively looking for a job (columns (4)–(6)), consistent with Coibion et al. (2020c), who show that many who lost jobs during the pandemic

were not actively looking for a new one. Older respondents and women were less likely to be looking for a new job. These results are consistent with a significant drop in labor force participation in the pandemic, particularly for women.

3.5.3. Takeaways. Overall, these responses highlight that shocks to household responsibilities, such as those induced by COVID-19, have profound effects on individuals' abilities to focus on their work responsibilities. Because, at small businesses, many of these responsibilities are split between only a small number of individuals, shocks to the household responsibilities of their owners and managers can constitute a critical threat to those small businesses. This suggests that policies aimed at increasing households' access to support with household tasks—such as the universal access to reliable childcare—have the potential to protect SMEs from the destabilizing effects of household-level shocks to their owners, managers, and employees even in a post-COVID world.

Table 7. Business-Household Interactions (Employee Responses)

	Panel A: Employed respondents					
	Impact of HH on business			Impact of business on HH		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
All	0.240			0.184		
By age						
<25 years	0.228	—	—	0.232	—	—
25–45 years	0.287	0.008	(0.017)	0.213	−0.066***	(0.018)
45+ years	0.186	−0.062***	(0.018)	0.139	−0.118***	(0.018)
By industry						
Agriculture or mining	0.173	−0.050	(0.037)	0.135	−0.062*	(0.034)
Construction	0.201	−0.038	(0.025)	0.115	−0.058***	(0.022)
Hotel/café/restaurant	0.279	0.026	(0.028)	0.246	0.018	(0.029)
Information/communications	0.204	−0.010	(0.018)	0.139	−0.024	(0.017)
Manufacturing	0.202	−0.017	(0.019)	0.161	−0.031*	(0.019)
Retail and wholesale trade	0.273	0.044**	(0.021)	0.235	0.034	(0.022)
Services	0.248	0.008	(0.016)	0.176	−0.023	(0.015)
Transportation and logistics	0.212	−0.012	(0.023)	0.175	−0.029	(0.022)
Other	0.253	—	—	0.196	—	—
By firm size						
<50	0.251	—	—	0.184	—	—
50–250	0.234	0.002	(0.014)	0.182	0.024*	(0.014)
>250	0.228	−0.002	(0.013)	0.183	0.036***	(0.012)
Remote work						
No	0.227	—	—	0.205	—	—
At least some time	0.250	0.020*	(0.012)	0.166	−0.051***	(0.012)
Gender						
Female	0.263	—	—	0.206	—	—
Male	0.189	−0.047***	(0.011)	0.140	−0.052***	(0.011)
HH responsibilities						
None	0.150	—	—	0.130	—	—
Child care	0.212	0.148***	(0.012)	0.167	0.084***	(0.011)
Adult/HH member care	0.132	0.177***	(0.021)	0.120	0.113***	(0.02)
Education						
High school or less	0.218	—	—	0.168	—	—
Noncollege degree	0.361	−0.021	(0.037)	0.227	−0.019	(0.036)
College degree	0.255	−0.058	(0.038)	0.199	−0.029	(0.037)
Time on HH activities						
Low	0.332	—	—	0.238	—	—
Medium	0.569	0.142***	(0.013)	0.377	0.091***	(0.012)
High	0.230	0.334***	(0.021)	0.176	0.196***	(0.021)
COVID case intensity						
Low	0.235	—	—	0.183	—	—
Medium	0.252	0.009	(0.013)	0.175	0.006	(0.013)
High	0.115	0.028**	(0.013)	0.115	−0.003	(0.013)
Decline in mobility						
Low	0.104	—	—	0.104	—	—
Medium	0.102	−0.009	(0.013)	0.102	−0.004	(0.012)
High	0	−0.009	(0.013)	0	−0.031**	(0.012)
Government assistance						
Not applied	0.387	—	—	0.296	—	—
Applied	0.231	0.101***	(0.023)	0.193	0.067***	(0.024)
	Panel B: Unemployed respondents					
	Unemployed due to HH care			Looking for new job		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
All	0.060			0.243		
By age						
<25 years	0.026	—	—	0.320	—	—
25–45 years	0.078	0.046***	(0.015)	0.238	−0.055	(0.034)
45+ years	0.058	0.016	(0.016)	0.212	−0.073*	(0.039)

Table 7. (Continued)

	Panel B: Unemployed respondents					
	Unemployed due to HH care			Looking for new job		
	Mean	Regression coefficient	Standard error	Mean	Regression coefficient	Standard error
By industry						
Agriculture or mining	0.105	−0.066***	(0.02)	0.476	0.175	(0.132)
Construction	0.070	−0.013	(0.034)	0.296	0.020	(0.067)
Hotel/café/restaurant	0.030	−0.044**	(0.018)	0.289	0.058	(0.039)
Information/communications	0.059	−0.013	(0.03)	0.365	0.079	(0.061)
Manufacturing	0.065	−0.002	(0.03)	0.248	−0.032	(0.053)
Retail and wholesale trade	0.066	0.000	(0.026)	0.207	−0.008	(0.043)
Services	0.078	−0.005	(0.022)	0.215	−0.036	(0.036)
Transportation and logistics	0.039	−0.034	(0.031)	0.262	−0.001	(0.061)
Other	0.063	—	—	0.198	—	—
By firm size						
<50	0.067	—	—	0.224	—	—
50–250	0.025	−0.039***	(0.013)	0.241	0.050	(0.034)
>250	0.058	0.000	(0.018)	0.274	0.050	(0.032)
Gender						
Female	0.065	—	—	0.198	—	—
Male	0.048	−0.026*	(0.014)	0.324	0.125***	(0.03)
Education						
High school or less	0.044	—	—	0.247	—	—
Noncollege degree	0.122	−0.000	(0.037)	0.316	−0.108	(0.066)
College degree	0.066	−0.028	(0.038)	0.233	−0.096	(0.069)
Time on HH activities						
Low	0.037	—	—	0.219	—	—
Medium	0.053	0.012	(0.013)	0.241	0.025	(0.027)
High	0.125	0.088***	(0.022)	0.302	0.086**	(0.034)
COVID case intensity						
Low	0.071	—	—	0.231	—	—
Medium	0.043	−0.016	(0.016)	0.233	0.004	(0.03)
High	0.068	−0.010	(0.017)	0.266	0.008	(0.03)
Decline in mobility						
Low	0.115	—	—	0.115	—	—
Medium	0.104	0.004	(0.017)	0.104	−0.075	(0.03)
High	0.102	−0.006	(0.015)	0.102	−0.087	(0.03)
Government assistance						
Not applied	0.077	—	—	0.227	—	—
Applied	0.035	−0.025*	(0.013)	0.270	0.020	(0.026)

Notes. Panel A: The dependent variable in columns (1)–(3) ((4)–(6)) takes a value of one if the employee reported that the household (business) responsibilities affected the ability to focus on this business (household) during the coronavirus (COVID-19) pandemic "a lot" or "a great deal." Results are from the April 2020 wave of the survey. The table presents both univariate means as well as coefficients and standard errors from multivariate regressions. All variables are defined in Table 1. Panel B: The dependent variable takes a value of one in columns (1)–(3) if the employee reported that the main reason for the unemployment was to take care of children or other household members. In columns (4)–(6), the dependent variable takes a value of one if a worker reports actively searching for a job while unemployed. Results are from the April 2020 wave of the survey. The table presents both univariate means and coefficients and standard errors from multivariate regressions. All variables are defined in Table 1.

  ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$.

4. Conclusion

This paper presents a large-scale survey of the impact of the COVID-19 pandemic on small business owners, managers, and employees. We study the short- and medium-term impact of the pandemic on U.S. businesses through two waves of the survey conducted through Facebook in April and December 2020. We present five new facts on the impact of COVID-19 on small business owners and their employees. These facts inform our understanding of the economic effects of the COVID-19 pandemic and help guide policy responses to similar shocks. The patterns documented in our paper also expand our understanding of the financing and operations of small businesses more broadly and highlight the power of using large-scale surveys to overcome the challenges from the lack of representative administrative data on small businesses.

Endnotes

[1] Other research papers in the large emerging literature studying the economic effects of COVID-19 include Cox et al. (2020), Giglio et al. (2020), Howell et al. (2021), Chetty et al. (2020), and Coibion et al. (2020a, b).

[2] Facebook was created in 2004 and, by June 2020, had 2.7 billion active users around the world and 256 million active users in the United States and Canada. An independent survey of Facebook users from 2019 found that more than 69% of the U.S. adult population used Facebook (Perrin and Anderson 2019). That same survey shows that Facebook usage rates among U.S.-based online adults were relatively constant across income groups, education levels, and race, and among urban, rural, and suburban residents, usage rates were slightly declining in age (from 79% of individuals aged 18 to 29 to 46% of individuals aged 65 and older). See Allen et al. (2020), Bailey et al. (2018a, b; 2019; 2020a, b, c; 2021), Bali et al. (2021), Kuchler et al. (2022a, b), Wilson (2020), and Rehbein and Rother (2020) for other economics and finance research using data from Facebook.

[3] Facebook generally does not allow accounts to receive multiple surveys in a short span of time. Because some of these surveys followed different sampling regimes (e.g., simple random or potentially targeted sampling), the total pool for our survey was not drawn completely at random from the overall Facebook population. In practice, reweighting for sampling (and nonresponse) moves the point estimates minimally, and the observable characteristics of our respondents align well with those from nationwide, off-line estimates (see Online Tables A.2 and A.3).

[4] Facebook pages are profiles on Facebook specifically for businesses, brands, communities, or public figures. Each page must have an account tied to it as an administrator, and we oversampled those that were from business pages. A business page is required for a small business to advertise on Facebook, and maintaining a business page is free of charge. Facebook Marketplace is an e-commerce platform on which users can buy and sell different products.

[5] "Personal" businesses were defined as respondents who reported that they were "self-employed providing goods or services" or that they "produce goods sold for personal income" but did not otherwise self-identify as an owner or manager of a business. Whereas there is no standard term for this category of businesses, they overlap a great deal with what are commonly called sole-proprietor or microbusinesses.

[6] However, the observed patterns might also be explained by other unobservable characteristics. For example, a larger online presence could be associated with a more flexible and modern business model.

[7] We classified the business as primarily facing a demand shock if it responded that the biggest struggle would be "lack of demand," "cash flow," or "repaying loans." We classified the businesses as primarily facing a supply shock if they responded to be primarily struggling because of "inventory," "logistics (e.g., shipping, delivering services or goods)," "finding supplies," "lack of staff," or "government/ health authority orders." These classifications are necessarily imperfect and involve a degree of judgment. In particular, "government/

health authority orders" could also be considered as a demand shock, and there are interpretations of "repaying loans" that might correspond more closely to a supply shock. We verify that none of our conclusions are sensitive to how we classify these two responses. In addition, we cross-validate their benchmark classification against their correlation with price-setting responses; see Section 3.3. For example, we verify that firms reporting "government/ health authority orders" as the primary challenge were disproportionately likely to raise prices (rather than reduce prices).

[8] Our direct measure of demand shocks is highly correlated with the presence of cash flow concerns and firms struggling to make payments, explaining why our direct measure of demand shock does not survive the multivariate regression. However, the results are consistent with various proxies for a drop in demand leading to price reductions. Also, demand shocks significantly decrease the probability of increasing prices.

[9] The best existing sources are the Survey of Small Business Finance (SSBF) and the Fed Small Business Credit Survey. However, the SSBF has not been conducted since 2003, and the financing sources of small businesses have significantly changed since that time with a decline in bank lending and a rise in nonbank sources of financing, such as finance companies and FinTech lenders (Gopal and Schnabl 2021). The Fed Small Business Credit Survey has been conducted annually since 2016. However, the SBCS only shows how outcome variables vary with a limited number of demographics. On the other hand, our results include many additional firmographic splits and allow us to conduct multivariate regressions. Beyond that, our survey elicits responses from a much larger sample and provides detailed information on access to financing and responses of nonemployer firms.

[10] The 2018 Small Business Credit Survey (SBCS) shows that 28% of nonemployer firms and 55% of employer firms had a loan or line of credit outstanding. These numbers are larger than the 26.5% of businesses that have a loan outstanding in our sample. We think these differences may be driven by the fact that the set of firms in our sample are significantly smaller (with 68% of businesses in our sample having fewer than 10 employees). The industry composition across the samples is also different with a much larger share of retail firms (who are less likely to have access to formal financing) in our sample than in the SBCS sample. Nevertheless, the SBCS also shows that only 14% of small employer businesses use external sources as primary financing—a number that better aligns with our results.

[11] These findings align with the 2018 SBCS, which confirms that the share of firms relying on external financing increases in firm size and is particularly high for capital-intensive industries. However, the released data does not allow to draw conclusions in a multivariate setting.

[12] One important, alternate form of financial support provided to small businesses in the pandemic was through debt forbearance. Whereas our survey did not explicitly ask owners about forbearance, Cherry et al. (2022) find that small business owners took mortgage forbearance at a higher rate compared with nonbusiness homeowners.

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