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Government Support and Firm Performance During COVID-19

Miriam Bruhn, Asli Demirguc-Kunt, and Dorothe Singer

Abstract

This paper assesses the medium-run effects of government support to firms during the COVID-19 crisis and whether the effectiveness of this support varied with its timing. Using data from three rounds of the World Bank's Enterprise Surveys COVID-19 Follow-up Surveys carried out between May 2020 and August 2022, it relates government support in Round 1 and 2 with firm performance in Round 3. Our results add to the existing literature on government support during the COVID-19 shock and previous crises, which has provided little evidence on how the effect of this support varies with its timing. Controlling for a host of background characteristics, firms that received support in Round 1 performed better in terms of Round 3 sales, but only if they did not have continued support. Firms that also received support in Round 2 had similar Round 3 sales to those who received no support. Firms that received government support only in Round 2 experienced no boost in Round 3 performance. The findings suggest that government support should be provided promptly, but it should also be phased out quickly.

KEYWORDS
Government support, COVID-19, productivity, firms

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1. Introduction

Governments around the world provided unprecedented support to firms when the COVID-19 pandemic started. For example, the World Bank's SME-Support Measure Dashboard tracked 1,500 government measures to support small and medium-size enterprises (SMEs) in 132 countries.[1] According to policymakers, these initial support measures aimed to prevent mass insolvency of viable firms and related knock-on effects for the financial sector, to preserve jobs and firm-specific intangible capital, and to reduce the friction costs of firms temporarily exiting the market (World Bank 2021).

Evidence from several countries suggests that government support measures were successful in helping firms weather the crisis and preserving jobs in the short run (Chen et al. 2022; Guerrero-Amezaga et al. 2022; and Turkson et al. 2021), although at a high cost (Autor et al. 2022). However, longer-run effects of COVID-19 support to firms are uncertain (Staples and Krumel 2023), in part since these measures may simply have delayed insolvency for some firms (Dörr, Licht, and Murmann 2022).

We contribute to the literature by assessing the medium-run effects of government support to firms during the COVID-19 crisis. We use panel data from three rounds of the World Bank's Enterprise Surveys (ES) COVID-19 Follow-up Surveys, allowing us to look at firm performance in mid-2021, over a year after support measures were first enacted.

Another contribution of our paper is that we test whether the effectiveness of government support varied with its timing. The data allow us to examine support received at the onset of the crisis (during the first half of 2020, as reported in Round 1 of the ES COVID-19 Follow-up Surveys), as well as support received later (during the second half of 2020 or early 2021, as reported in Round 2 of the surveys). While initial support may be effective, if it continues over an extended period, it can also distort markets and firms' incentives (Pop and Amador 2020; World Bank 2021).[2] Thus, the effects of initial support may differ from the effects of subsequent support. The existing literature on the COVID-19 shock and previous crises, which we review in more detail below, has, for the most part, not measured the differential effects of providing support quickly vs. subsequently.

We analyze data for up to 32 mostly emerging markets and developing countries. First, we document that 31 percent of firms received government support by Round 1 of the survey, and 22 percent received support between Round 1 and 2. Taken together, 41 percent of firms received support in either or both Round 1 and 2. The support measure reaching by far the largest share of firms was wage subsidies, with 3 out of 4 firms that received any type of support receiving such subsides. The second most wide-reaching measure was cash transfers (less than 4 out of 10 firms), followed by fiscal relief, payment deferrals, and new credit (2 to 3 out of 10 firms each).

1 https://dataviz.worldbank.org/authoring/SME-COVID19/Overview.

2 Continued government support can distort markets and firm's incentives by propping up non-viable firms and keeping them operational only due to support and crowding out other firms. This can lead to market structures with lower competitive pressure resulting in lower productivity growth.

We examine which characteristics predict receiving government support. Similarly to Bruhn, Demirguc-Kunt, and Singer (2023), we find that firms that were more productive at baseline were less likely to receive government support by Round 1. In addition, larger firms and those with a website were more likely to receive support.

Then, we ask how receiving government support by Round 1 and Round 2 of the ES COVID-19 Follow-up Surveys affected firm performance in Round 3 of the survey. Here, we examine the relationship between Round 3 performance and support in Round 1 and 2 to minimize reverse causality. To reduce omitted variable bias, we control for a host of firm characteristics that may have affected both the probability of receiving support and firm performance.

We find that firms that received government support by Round 1 performed better in terms of Round 3 sales compared to firms that did not receive any support, but only if they did not have continued support in the following period. Interestingly, firms that continued to receive government support in the second round performed no better than those who did not receive any support. Also, firms that received government support only in the second round experienced no performance boost compared to those who received no support. These results hold up through various robustness checks, including controlling for firm performance in Round 1. Our findings suggest that, for effective policy, government support should be provided to firms quickly without delay, but it should also be phased out quickly.

The paper is organized as follows. Section 2 reviews the existing literature on the effect of government support during the COVID-19 shock and previous crises. Section 3 presents our data and summary statistics and examines what predicts government support. Section 4 describes the empirical strategy. Section 5 discusses the main results. Section 6 includes several robustness checks, and Section 7 concludes.

2. Literature on government support during crises

There is a growing literature on government support to firms during crises. Table 1 summarizes the context and findings from papers published in peer-reviewed journals.[3] We group papers by support extended during specific crises: COVID-19, the Great Recession, and other crises.

Most previous papers examine support provided during the Great Recession in the aftermath of the Global Financial Crisis of 2007/2008. These papers study the impact of short-time work or wage subsidy programs in OECD countries. These programs often existed before the crisis but typically

3 The papers were identified using the snowball method. For papers related to the Great Recession, Boeri and Cahuc (2023) provided a starting point while for papers on other crises so did World Bank (2020). As suggested by a referee, we also queried Scopus AI for relevant papers which, after manual review, resulted in the identification of three additional papers.

received relaxed eligibility criteria and additional funding in response to the crisis. Several papers use cross-country data, relating take-up of short-time work with employment outcomes (Boeri and Bruecker 2011; Brey and Hertweck, 2020; and Hijzen and Martin 2013). Other papers provide evidence on the impact of programs in specific countries: Germany (Boeri and Bruecker 2011), Italy (Giupponi and Landais 2023), and Switzerland (Kopp and Siegenthaler 2021). Bruhn (2020) is the only paper that focuses on an emerging market and developing country (Mexico). The papers on government support after the Great Recession generally find that these programs were successful in preserving employment, although one paper shows that the positive effect on employment emerged only in the medium run (Bruhn 2020).

Compared to papers on government support during the Great Recession, papers on firm support during the COVID-19 crisis focus on a wider range of programs, including short-time work, wage subsidies, loans, social security or tax exemptions, and rent or utility reductions. Many of these programs were newly implemented and available to a broad range of firms. The studies cover countries from around the globe: Belgium (Konings et al. 2023), China (Chen et al. 2022), Egypt (El-Haddad and Zaki 2023), Italy (Turkson et al. 2021), Italy and Spain (Canzian et al. 2025), Japan (Honda et al. 2023) Latin America (Guerrero-Amezaga et al. 2022), and the U.S. (Autor et al. 2022). These papers conclude that government support measures improved firm performance and preserved jobs in the short run, but they do not measure medium-run effects.

Two papers study firm support during other crises: Cravo et al. (2024) study wage subsides during the 2014–2017 recession in Brazil and de Mel, McKenzie, and Woodruff (2012) cash grants after a 2014 tsunami in Sri Lanka. Both papers find positive effects of government support on firm performance or employment. Cravo et al. (2024) shows that the effect on employment increases over time.

We contribute to the literature on government support to firms during crises in three ways. First, we add to the limited evidence on government support in emerging markets and developing countries. Specially, we study countries which have not been covered by existing papers.

Second, we examine the medium-run effects of government support during the COVID-19 crisis. Evidence from the Great Recession and other crises suggests that the effect of government support varies over time, but previous papers on the COVID-19 crisis study only short-run effects.

Third, we explore how the impact of government support varies with the timing and duration of its implementation. Previous papers have not examined whether the effects of government support change based on when and how long it is applied. To the best of our knowledge, the only exception is Hijzen and Martin (2013) who show that the continued use of short-term work programs in the OECD during the Great Recession led to a negative effect on employment as economies recovered.

TABLE 1. Summary of studies on the effect of government support during crises

Study	Policy or Program Studied	Main Results
Panel A: COVID-19 crisis		
Autor et al. (2022)	Forgivable loans to small firms in the U.S.	Using different estimation techniques, including difference-in-difference estimation with payroll data, the program boosted employment, compared to firms that were not eligible.
Canzian et al. (2025)	State aid in Italy and Spain	Using a difference-indifferences approach combined with propensity score weighting with firm-level data, micro and small firms (but not larger firms) receiving state aid performed better compared to those that did not.
Chen et al. (2022)	Wage subsidies, social security or tax exemptions, rent or utility reductions, and credit or loan support in China	Using a matched control group, subsidies, exemptions, and reductions improve firm performance in the medium run, while credit policies have no effect.
El-Haddad and Zaki (2023)	Government support in Egypt	Using firm-level survey data, firms that received support reported better outcomes, especially SMEs.
Guerrero-Amezaga et al. (2022)	Small business loan and employment programs in eight Latin American countries	Using firm-level survey data, firms that received support reported better outcomes, but support mostly went to larger firms.
Honda et al. (2023)	Different types of government support in Japan	Using firm-level survey data matched with financial data, government support produced mixed results in that it may have prevented business failures but also helped to prop up firms that are not viable in the long run. None of the different types of support programs had a positive effect on employment relative to non-recipients of support.
Konings et al. (2023)	Government support in a region in Belgium	Using administrative data for the universe of firms and a difference-in-difference approach, firm-level support measures helped firms to avoid exit and to temporarily increase productivity.
Turkson et al. (2021)	Different types of government support at the beginning of the crisis in Italy (using ES COVID-19 Follow-up Surveys)	Using a first difference estimation, receiving government support is associated with an increase in sales for firms.
Panel B: Great Recession		
Boeri and Bruecker (2011)	Short-time work programs in Germany and other OECD countries	An instrumental variables estimation shows that the programs prevented job losses in the face of large declines in output.
Brey and Hertweck (2020)	Short-time work programs in OECD countries	Higher program take-up was associated with a lower unemployment rate.
Bruhn (2020)	Wage subsidy program in Mexico	Using a matched control group of ineligible industries, the program did not increase employment in the short-run but did so in the medium-run.
Giupponi and Landais (2023)	Short-time work program in Italy	The program increased employment, compared to firms that were not eligible.
Hijzen and Martin (2013)	Short-time work programs in OECD countries	An instrumental variables estimation shows that higher program take-up lowered the elasticity of employment changes to output growth during the crisis. However, continued use of the programs during the recovery led to a negative effect on employment.
Kopp and Siegenthaler (2021)	Short-time work program in Switzerland	Using two control groups (rejected firms and a matched group), the program decreased dismissals and increased firm survival.

(Continued)

TABLE 1. (Continued)

Study	Policy or Program Studied	Main Results
Panel C: Other crises		
Cravo et al. (2024)	Wage subsidy program in Brazil	Using a matched control group, the program preserved employment, with the effect increasing over time.
de Mel, McKenzie, and Woodruff (2012)	Cash grants for microenterprises in Sri Lanka after a tsunami	Firms receiving randomly allocated grants recover profit before other damaged firms.

3. Data and summary statistics

We use data from ES COVID-19 Follow-up Surveys to capture government support received by firms during the COVID-19 pandemic and to measure firm performance.[4] The World Bank has collected one to three rounds of these surveys in 45 countries starting in May 2020.[5] The sampling frame for the ES COVID-19 Follow-up Surveys includes all firms that replied to the latest pre-COVID-19 ES, building a panel data set with the latest pre-COVID-19 ES as the baseline and up to three rounds of ES COVID-19 Follow-up Surveys. This makes it possible to link performance during the COVID-19 pandemic to firm characteristics collected through the ES. The ES cover formal (registered) firms with five or more employees and are designed to be nationally representative for the manufacturing and service sectors. For most countries in our sample, the most recent ES was conducted in 2019 or early 2020.[6] The data is fully comparable across countries, using a common sampling methodology—stratified random sampling—, standardized survey instrument, and a uniform methodology of implementation.

To explore how government support was repeated over time, we use data for countries with two to three survey rounds as of October 19, 2022. We conduct our analysis on a sample of up to 32 mostly emerging markets and developing countries (see Table A1 in the Appendix).[7] We use two survey rounds (32 countries) when summarizing how many firms received government support, when they did so, and what predicts government support. We use three survey rounds (24 countries) when we assess how receiving government support by Round 1 and Round 2 of the ES COVID-19 Follow-up Surveys affected firm performance in Round 3 of the survey. The three rounds of surveys were completed between May 2020 and August 2022 for this sample of up to 32 countries.[8]

4 More information on the ES COVID-19 Follow-up Surveys is available at https://www.enterprisesurveys.org/en/covid-19. The replication package for this paper is posted in the World Bank's Reproducible Research Repository at https://doi.org/10.60572/29ke-2k09.

5 Four rounds of data were collected in Jordan.

6 Some countries had earlier surveys, as follows: El Salvador (2016), Guatemala (2018), Honduras (2017), Nicaragua (2017), and Zimbabwe (2017). Our results are similar when we exclude these countries. For most countries with surveys in 2020, the surveys were completed before March 2020. For Romania, 92 percent of the interviews were completed before March 2020. Our results are again similar when we exclude the 8 percent of observations from Romania that were collected in or after March 2020.

7 At least three rounds of survey data are also available for Somalia, however no pre-COVID-19 ES is available as the baseline.

8 Armenia, North Macedonia, Kazakhstan, the Russian Federation, and Zimbabwe have later Rounds 2 and/or Rounds 3 compared to the other countries in our sample. Our results are similar when excluding these countries from the analysis.

The ES COVID-19 Follow-up Surveys include questions on government support received during the pandemic. They also ask firms about changes in performance during the crisis, as well as expectations for the next months. Table A2 provides the definitions of the variables included in our analysis.

In all tables and analysis, we use sampling weights provided in the ES COVID-19 Follow-up Surveys to correct for unequal probability of selection as well as ineligibility for all reported statistics. We rescale the sampling weights to give equal weight to all countries.

3.1 How many firms received government support and when?

Our sample includes 8,195 firms across 32 countries that reported whether they received government support in Rounds 1 and 2. Table 2 shows the share of firms that received government support by survey round. About 3 in 10 firms reported receiving support by Round 1; in Round 2 the share of firms receiving support drops to about a fifth. Cumulatively, by Round 2, 40 percent of firms reported having received support. The support measure reaching by far the largest share of firms was wage subsidies, with 30 percent of firms – or 3 out of 4 firms that received any type of support – receiving such subsides. The second most wide-reaching measure was cash transfers (15 percent), followed by fiscal relief (12 percent) and payment deferrals (11 percent). New credit was the least commonly reported support measure (8 percent).

TABLE 2. Government support by survey round

Variable	Round 1		Round 2	
	Obs	Mean	Obs	Mean
Per round				
Received government support	8,194	0.31	8,195	0.22
Cash transfer	8,121	0.09	8,189	0.06
Payment deferrals	8,171	0.06	8,191	0.05
New Credit	8,169	0.04	8,190	0.03
Fiscal relief	8,165	0.06	8,188	0.06
Wage subsidies	8,179	0.23	8,190	0.14
Cumulative				
Received government support			8,195	0.41
Cash transfer			8,169	0.15
Payment deferrals			8,165	0.11
New Credit			8,160	0.08
Fiscal relief			8,158	0.12
Wage subsidies			8,172	0.30

Notes: Includes the 8,195 firms that reported whether they received government support in Rounds 1 and 2. Some firms did not specify the type of support, which is why the number of observations varies.

Source: Enterprise Surveys COVID-19 Follow-up Surveys.

Table 3 displays the share of firms receiving government support in only one round vs. two rounds. Most firms that received any government support did so only in Round 1: 18 percent of all firms or about 45 percent of firms receiving support. This was followed by firms receiving support in both rounds (13 percent). About 10 percent of firms got support only in Round 2 (10 percent), while 59 percent did not get any support at all.

TABLE 3. Number of government support rounds received

No. of Rounds	Rounds	Obs	Mean
2	Round 1 and 2	8,195	0.13
1	Round 1 only	8,195	0.18
1	Round 2 only	8,195	0.10
0	No Rounds	8,195	0.59

Note: Includes the 8,195 firms that reported whether they received government support in Rounds 1 and 2.
Source: Enterprise Surveys COVID-19 Follow-up Surveys.

3.2 What are the firm characteristics and changes in performance during COVID-19?

Table 4 Panel A presents the summary statistics of firm background characteristics from the pre-COVID-19 ES. To measure productivity, we use labor productivity, defined as (log of) sales over total number of permanent full-time employees.[9] Labor productivity is preferred to total factor productivity due to limitations in measuring non-labor inputs in the ES (World Bank 2021a). The average firm in our sample had a log of labor productivity of 10.31. At the same time, the average firm had 33 employees (2.67 in log units) and was 22 years old (2.91 in log units). Only 17 percent of the firms had a female top manager. The sample includes few firms with at least 10 percent state or foreign ownership (less than 1 and 7 percent, respectively). Less than half the firms reported that they had a loan (40 percent) or innovated a product or process during 2017 to 2019 (41 percent), but 62 percent owned a website. Most firms reported that their main market was national (47 percent) or local (45 percent) versus international (8 percent). About 43 percent of firms are in the service sector, followed by manufacturing (42 percent) and retail (15 percent).

9 Data on sales is provided in 2009 USD in the dataset but originally collected in local currency units (LCU) and specific to each ES and year, spanning different fiscal years. To make ES data comparable across countries, the World Bank transforms all data in LCU to a common currency-year as follows: first, variables are exchanged into USD using the official exchange rate (period average) from the World Development Indicators (WDI). The data are then deflated to 2009 using the GDP deflator for the United States from the relevant reference fiscal year. Information on the closing month of the firms' fiscal year is used to adjust exchange rates and deflators for each firm. In calculating labor productivity, the outliers are eliminated by first log-transforming total annual sales and the number of permanent full-time employees, and then trimming at plus and minus three standard deviations from the mean, as described in World Bank (2021a).

TABLE 4. Firm characteristics and performance summary statistics

Variable	Obs	Mean	SD
a. Firm characteristics (2019)			
Log(labor productivity)	8,194	10.31	1.49
Log(number of employees)	8,194	2.67	1.05
Log(firm age)	8,194	2.91	0.64
Top manager female	8,194	0.17	
Innovated during 2017–19	8,194	0.41	
State ownership (10%)	8,194	0.00	
Foreign ownership (10%)	8,194	0.07	
Has line of credit or loan	8,194	0.40	
Owns a website	8,194	0.62	
Main market			
Local	8,194	0.45	
National	8,194	0.47	
International	8,194	0.08	
Sector			
Manufacturing	8,194	0.42	
Retail	8,194	0.15	
Other services	8,194	0.43	
b. Firm performance (Round 3)			
Percentage change in monthly sales relative to one year earlier	5,821	–3.43	34.65
Percentage change in number of permanent full-time workers since December 2019	5,875	–13.47	53.81
Reduced number of permanent full-time workers since December 2019	5,875	46.05	
Anticipate falling into arrears on outstanding liabilities in the next 6 months	5,543	18.92	

Note: In our sample, the percentage of firms who have state ownership (10%) is 0.28 percent.
Sources: Enterprise Surveys and Enterprise Surveys COVID-19 Follow-up Surveys.

The ES COVID-19 Follow-up Surveys ask firms about changes in performance during the crisis, as well as expectations for the next months. Table 4 Panel B presents the summary statistics of firm performance by Round 3. Firms reported that their sales remained an average of 3 percent lower compared to the same month a year earlier. Round 3 surveys were typically conducted in mid-2021 (see Table A1), meaning that firms reported their change in sales compared to mid-2020, a time when firms typically experienced steep declines in sales compared to pre-COVID-19 (Apedo-Amah et al. 2020; Bruhn, Demirguc-Kunt, and Singer 2023). Table A1 also shows drops in sales reported in Round 1 and Round 2, which are all relative to the same month one year earlier. Taken together, the numbers suggest that, in mid-2021, sales of the average firm were still about 33 percent lower than before COVID-19. Unlike sales, employment outcomes in all rounds are measured compared to December 2019. The Round 3 data in Table 4 Panel B shows that the number of permanent full-time workers remained 13 percent lower compared to pre-COVID-19, with almost half of firms (46 percent) having decreased their number of workers. About 19 percent reported that they anticipated falling into arrears on outstanding liabilities in the next six months.

3.3 What predicts government support?

In Table 5, we explore which firm characteristics predict receiving government support by estimating the following regression specification with OLS:[10]

$$Government\ Support_{ijkt} = \beta_0 + \boldsymbol{\beta_1}\ Firm\ Characteristics_{ijk0} + \boldsymbol{\beta_2}\ Firm\ Performance_{ijkt} + S_j + C_k + \varepsilon_{ijkt} \quad (1)$$

where *Government Support* to firm *i* in sector *j* and country *k* is in either Round 1 or 2 (time $t = 1$ or $t = 2$) of the ES COVID-19 Follow-up Surveys. *Firm Characteristics* is a vector of firm background characteristics from the pre-COVID-19 ES (time $t = 0$) as described in Section 3.2 and Table 4. In one regression specification for *Government Support* in Round 2 we also control for a vector of *Firm Performance* measures in Round 1. Detailed definitions as well as the variables included in the vectors *Firm Characteristics and Firm Performance* are available in Table A2. We also control for sector and country fixed effects (*S* and *C*, respectively) to mitigate omitted variable bias.

TABLE 5. Predicting Round 1 and Round 2 support

	Government Support		
	Round 1	Round 2	Round 2
Log(labor productivity)	−0.017**	0.000	0.008
	(0.008)	(0.008)	(0.009)
Log(number of employees)	0.019**	0.016	0.029**
	(0.009)	(0.010)	(0.011)
Log(firm age)	−0.013	−0.017	−0.017
	(0.010)	(0.014)	(0.014)
Top manager female	0.027	0.071***	0.060**
	(0.023)	(0.026)	(0.027)
Innovated during 2017–19	0.024	0.017	0.029
	(0.017)	(0.017)	(0.019)
State ownership (10%)	−0.039	−0.040	−0.131*
	(0.063)	(0.134)	(0.070)
Foreign ownership (10%)	−0.027	0.006	−0.018
	(0.029)	(0.029)	(0.027)
Has line of credit or loan	0.023	0.020	0.026
	(0.018)	(0.022)	(0.022)
Owns a website	0.032**	0.050***	0.048**
	(0.015)	(0.016)	(0.019)
National market dummy	−0.011	−0.008	0.001
	(0.017)	(0.015)	(0.016)
International market dummy	−0.029	−0.065**	−0.066**
	(0.026)	(0.029)	(0.029)

(Continued)

10 Table S1 in the Supplemental Materials shows a variable-by-variable comparison of firm characteristics across groups of firms.

TABLE 5. (Continued)

	Government Support		
	Round 1	Round 2	Round 2
Sales change in round 1 (%)			−0.002***
			(0.000)
Workers change in round 1 (%)			0.000
			(0.000)
Decreased workers in round 1			0.001**
			(0.000)
Anticipate falling in arrears in round 1			0.000
			(0.000)
Constant	0.442***	0.177*	−0.009
	(0.088)	(0.095)	(0.097)
R^2	0.291	0.164	0.191
Number of observations	8,194	8,195	6,813

Notes: All regressions are ordinary least squares and include sector and country fixed effects. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

Focusing first on baseline characteristics, firms that were more productive at baseline were less likely to receive government support by Round 1, while larger firms were more likely to receive support. The only other baseline characteristic that is statistically significantly associated with receiving support by Round 1 is having a website. Larger firms and those with a website may have found it easier to apply for government support. In Round 2, we additionally see that firms with a female top manger were more likely receive support and firms with an international market were less likely to receive support.

The last column of Table 5 shows how performance during the COVID-19 crisis is associated with receiving government support. Here, we predict support in Round 2 with performance in Round 1. We chose this specification here because within a survey round we cannot pin down whether government support or change in performance came first. The results indicate that firms that experienced larger drops in sales by Round 1 were more likely to receive support by Round 2. Similarly, firms that decreased the number of workers by Round 1 were more likely to receive support. These correlations could be driven by worse performing firms seeking out more support, as well as by the government targeting firms that were hit harder by the crisis.

4. Empirical strategy

We examine the relationship between government support and firm performance by estimating the following regression specification with OLS:

$$Firm\ Performance_{ijk3} = \beta_0 + \boldsymbol{\beta_1}\, Government\ Support_{ijkt} + \boldsymbol{\beta_2}\, Firm\ Characteristics_{ijk0} + S_j + C_k + \varepsilon_{ijkt} \quad (2)$$

where *Firm Performance* of firm *i* in sector *j* and country *k* is captured by one of four variables. All firm performance variables are measured in Round 3 (time $t = 3$) of the ES COVID-19 Follow-up Surveys. The first firm performance variable is the percentage change in monthly sales relative to one year earlier. The second is the percentage change in number of permanent full-time workers since December 2019. The third and fourth firm performance variables are binary variables indicating a reduced number of permanent full-time workers since December 2019 and anticipating falling into arrears on outstanding liabilities in the next 6 months, respectively.[11] A detailed definition of all four firm performance variables, as well as the variables included in the vectors *Government Support* and *Firm Characteristics* as described below, is available in Table A2.

Government Support is a vector of one or more indicator variables equal to one if the firm received any type of government support and equal to zero otherwise.[12] In the first specification (see Table 6), we use an indicator for having received government support by Round 1 or 2 of the ES COVID-19 Follow-up Surveys. Here, the coefficient $\boldsymbol{\beta_1}$ represents the difference in Round 3 performance between firms that received support in Round 1 or 2 and firms that did not receive support in either of these rounds. In a second specification (see Table 7), we aim to unpack the role of government support by Round 1 vs. 2. In this regression, we include three mutually exclusive indictors for government support: (i) receiving support only in Round 1, (ii) receiving repeated support in Round 1 and 2, and (iii) receiving support only in Round 2. This regression thus compares Round 3 performance of firms in these three categories to firms that did not receive any support in Round 1 and 2.

11 For the binary variables, we chose a linear probability model since it is simpler and tends to yield similar marginal effects as a nonlinear model (Angrist and Pischke 2009). Our results are similar if we use a Probit model to estimate the regressions with binary outcome variables (see Table S2 in the Supplementary Materials).

12 One caveat in this analysis that we do not know how much government assistance firms receive but the amount of assistance has been shown to correlate with firm outcomes (Dvoulety et al. 2021).

TABLE 6. Combined effect of Round 1 or 2 support on Round 3 performance

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Received any support in Round 1 or 2	5.377*	−0.784	3.168	2.117
	(3.020)	(2.150)	(2.645)	(2.665)
Log(labor productivity)	2.243***	0.822	−2.201	−2.584***
	(0.732)	(1.524)	(1.388)	(0.773)
Log(number of employees)	2.292***	4.000***	0.300	−1.530**
	(0.718)	(1.380)	(1.155)	(0.699)
Log(firm age)	−1.586	−0.131	−0.281	−5.093***
	(1.458)	(2.482)	(2.110)	(1.360)
Top manager female dummy	−3.195	4.128	−0.828	0.601
	(2.662)	(3.801)	(2.659)	(1.751)
Innovated during 2017–19	−0.697	1.352	0.681	3.098*
	(1.417)	(3.394)	(3.092)	(1.702)
State ownership (10%)	−5.654	−16.347	4.975	−7.733
	(6.835)	(12.162)	(9.000)	(5.334)
Foreign ownership (10%)	−0.141	7.021	0.184	−4.374
	(3.248)	(8.029)	(7.212)	(2.973)
Has line of credit or loan	−0.089	1.556	0.354	−0.280
	(1.674)	(2.445)	(1.655)	(2.190)
Owns a website	0.703	−2.276	2.251	−0.771
	(1.583)	(3.785)	(3.047)	(2.073)
National market dummy	3.323	−0.658	1.632	3.223
	(1.952)	(3.319)	(2.878)	(2.151)
International market dummy	3.432	−7.728	5.708	−1.586
	(2.986)	(5.715)	(4.049)	(3.137)
Constant	−33.643***	−29.173*	62.969***	61.531***
	(9.032)	(16.772)	(13.543)	(10.031)
R^2	0.079	0.077	0.059	0.200
Number of observations	5,821	5,875	5,875	5,543

Notes: All regressions are ordinary least squares and include sector and country fixed effects. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE 7. Separate effects of Round 1 and 2 Support on Round 3 performance

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Support in Round 1 only dummy	8.983**	0.986	1.443	2.517
	(3.255)	(3.145)	(3.594)	(4.018)
Support in Round 1 and 2 dummy	3.140	–2.736	4.628	1.906
	(3.364)	(3.390)	(3.427)	(2.571)
Support in Round 2 only dummy	0.804	–2.027	4.979	1.564
	(4.910)	(2.850)	(3.464)	(3.221)
R^2	0.084	0.077	0.059	0.200
Number of observations	5,821	5,875	5,875	5,543

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the control variables listed in Table 6. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, * $p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

Regarding the timing, we study how government support received in the first half of 2020 (Round 1) and during the second half of 2020 or early 2021 (Round 2) relates to firm performance in Round 3 (generally mid-2021). More than one year passed between receiving support in Round 1 and firm outcomes in Round 3, which is a longer time frame that other papers on government support the COVID-19 shock have examined.

In identifying the causal effect of government support on firm performance, we face two main issues. The first is reverse causality. That is, government support may be determined by firm performance, for example if worse performing firms are more likely to receive support (as we find in Table 5). We mitigate reverse causality by looking at firm performance one round after receiving government support, so that support is not directly influenced by firm performance. That is, we use Round 3 firm performance and government support in Round 1 and 2.

The second threat to identification is omitted variable bias. That is, other factors may determine both government support and firm performance. We mitigate omitted variable bias by controlling for firm background characteristics, as well as sector and country fixed effects (*S* and *C*, respectively). *Firm Characteristics* is a vector of firm-level background variables measured before the COVID-19 crisis, as described in Section 3 and Table 4 (at time t = 0). These variables may determine firm performance for the following reasons.

More productive, larger, and older firms may weather a crisis better because they are more established and have more financial and organizational resources to do so. These firms may also have strong political connections. More innovative firms can be more likely to adapt to a crisis. State- or foreign-owned firms may be more resilient to crises through access to more resources, connections, or know-how. At the same time, state-owned firms may be less adaptable. Firms with pre-crisis credit may have easier access to finance during a crisis, allowing them to mitigate its impacts. With respect to gender, Liu, Wei, and Xu (2021) document that women-led businesses were

more likely to close, close for longer, and anticipate falling into arrears than men-led businesses during the COVID-19 pandemic. We control for owning a website since Wagner (2021) shows that firms with a website were more likely to survive during the pandemic, potentially because the online presence allowed firms to interact with customers even when in-person contact was restricted. Finally, the location of the firm's main market (local, national, or international) may matter for performance during the pandemic since movement restrictions may have impacted firms with different main markets differently.

To further address omitted variable bias, we also run a robustness check controlling for management quality. This variable is not available for the full sample, which is why we include it only in the robustness check. Similarly, we run a robustness check controlling for firm performance in Round 1. As shown in Tabe 5, performance in Round 1 influenced the probability of getting support in Round 2. We control for it because it could also be related to Round 3 performance due to persistence.

5. Results

Tables 6 and 7 show the results from estimating equation 1 to examine the relationship of receiving government assistance and firm performance. Our main finding emerging from this analysis is that firms that received government support in Round 1 performed better than firms that received no support, in terms of sales, but that subsequent support had no impact on firm performance.

The initial results in Table 6 show that firms that received any support in either Round 1 or 2 reported greater increases in sales by Round 3 relative to one year ago (i.e., typically mid-2020), compared to firms that received no support. In Table 7, we unbundle government support and examine the role of Round 1 and 2 support separately. The positive relationship between support and sales is driven by firms that received support in Round 1 only, doing so increased the change in sales by almost 9 percentage points, compared to firms that received no support. Subsequent support in Round 2 – either as Round 1 and 2 support or Round 2 only – had no statistically significant effect on sales.

We do not find a statistically significant relationship between receiving government support and employment outcomes (Table 6), independent of the timing of support (Table 7). The results also show that government support is not correlated with a firm's likelihood of anticipating falling into arrears on outstanding liabilities in the next 6 months. What matters are a firm's productivity, size, and age: more productive, larger, and older firms are less likely to anticipate falling into arrears. Larger firms also have more positive sales and employment outcomes.

Overall, our results suggest that the initial support provided to firms during the COVID-19 crisis helped firms, but there is no evidence that subsequent support did so. This pattern implies that if any support is provided, it should be phased out quickly. This conclusion aligns with the findings of Hijzen and Martin (2013), which indicate that sustained use of short-term work programs in OECD countries during the Great Recession negatively impacted employment during the recovery phase.

6. Robustness checks

6.1 What is the effect of government support on exit and non-response?

Our analysis in Section 5 uses the sample of firms for whom government support is observed in Round 1 and 2 and firm performance is observed in Round 3 of the ES COVID-19 Follow-up Surveys, thus dropping any firms that closed between rounds or that did not respond for other reasons. This section asks whether using this sample of responding firms could bias our results, which may be the case if there is a relationship between government support and exit or non-response.

We start by pointing out that confirmed exit rates are very low in our sample. Table S3 in the Supplementary Materials shows exit rates for the sample of 6,844 firms that reported government support both in Round 1 and 2 (i.e., firms that had not closed by Round 2). Only 1 percent of these firms were confirmed to have exited by Round 3. The exit rate is higher, 8 percent, if we include firms that are assumed to have closed since they could not be contacted in Round 3. We also lose firms in our balanced sample due to interview refusal in Round 3. In total, 16 percent of firms drop out of the sample for any of the reasons mentioned above (confirmed exit, assumed exit, and interview refusal).

Tables S4 and S5 in the Supplementary Materials follow the same format as Tables 6 and 7, to examine whether receiving government support in Round 1 and 2 is associated with subsequent firm exit or non-response to Round 3. We find no relationship between government support and confirmed firm exit. The only variables that show a statistically significant correlation with confirmed exit are productivity and size, where more productive and larger firms were less likely to exit than less productivity and smaller firms (Table S4 Column 1). When also including assumed exit as the outcome, firms with a female top manager are more likely to exit and state-owned firms, as well as those with a national market, are less likely to exit (Table S4 Column 2).

Column 3 of Tables S4 and S5 use an outcome variable that is equal to one if the firm was in Round 1 but is not in our balanced sample for any reason (confirmed exit, assumed exit, or non-response). Overall, there is no correlation between receiving government support and being in the balanced sample (Table S4). When we break down government support by round, firms that received support in Round 2 only are less likely to be in the balanced sample, but this relationship is only statistically significant at the 10-percent level (Table S5).

Since government support does not consistently predict exit and non-response in our main regressions, we conclude that the analysis in Section 5, which uses a balanced panel to look at the effect of support on firm performance, likely does not suffer from non-response bias.

6.2 Controlling for the competition environment

Bruhn, Demirguc-Kunt, and Singer (2023) show that a countries' competition environment affected the reallocation of economic activity across firms during the COVID-19 crisis. Countries with a strong competition environment experienced more reallocation from less productive to more productive firms than countries with a weak competition environment. Here, we test whether the competition environment also influenced the relationship between government support and firm performance.

Following Bruhn, Demirguc-Kunt, and Singer (2023), Table S6 in the Supplementary Materials uses the 2020 Bertelsmann Stiftung Transformation Index (BTI) as a measure of competition.[13] As in the earlier paper, we interact this measure with labor productivity (the main effect is subsumed in the country fixed effect). Importantly, we also add interaction terms of the BTI with our measures of government support. These interaction terms are mostly not statistically significant in Table S6. Thus, we do not find evidence that the relationship between government support and firm performance depends on the competition environment.

6.3 Using country-sector fixed effects

The analysis in Section 5 controls for country and sector fixed effects. Here, we do a robustness check with country-sector fixed effects since governments may have directed support to those sectors that were hit harder in their country.

Table S7 in the Supplementary Materials replicates the results in Tables 6 and 7 but replacing country and sector fixed effects with country-sector fixed effects. The results are similar, showing that our findings are robust to controlling for country-sector fixed effects.

6.4 Controlling for management quality

Although the analysis in Table 6 and 7 controls for many firm characteristics, the findings could be subject to omitted variable bias. Most notably, an unobserved measure of firm quality could drive both the probability of receiving government support and subsequent firm performance. For example, firms with better managers may be more likely to apply for government support and may also perform better during a crisis. The ES include a measure of management quality, based on 11 questions that are aggregated following Grover and Karplus (2021) and Bloom et al. (2019). Unfortunately, the management quality measure is only available for firms with 20 or more employees. Table S8 Panel A1 in the Supplementary Materials replicates the results from Table 6 in this smaller sample. For firms with 20 or more employees, we find no statistically significant relationship between receiving government support in Round 1 or 2 and firm performance in Round 3. We then control for management quality in Panel A2 of Table S8, which leaves the coefficients on Round 1 or 2 support basically unchanged.

13 This index is not available for Cyprus, Greece, Italy, Malta, and Portugal.

Panel B1 in Table S8 replicates Table 7 in the smaller sample for which management quality is available. Most findings are similar, except that receiving only Round 1 support is not positively related with change in sales in the sample of firms with 20 or more employees, suggesting that Round 1 support mostly benefitted smaller firms. Controlling for management quality in Panel B2 of Table S8 changes the coefficients on government support very little.

Overall, the fact that accounting for management quality does not meaningfully change the results in Table S8 alleviates concerns about omitted variable bias.

6.5 Controlling for firm performance in Round 1 and 2

Table S9 in the Supplementary Materials accounts for the fact the government support in Round 2 was related to firm performance in Round 1, as shown in Table 5. That is, firms that saw larger declines in sales in Round 1 and that decreased their number of workers were more likely to receive support in Round 2. This pattern could bias our results if there is persistence in firm performance over time.

To account for any potential bias due to past performance, we control for Round 1 and Round 2 performance in Table S9. That is, in each column we add the outcome variable in Round 1 and Round 2 as an additional control. For example, when looking at the effect of government support on Round 3 sales, we control for Round 1 and 2 sales. A caveat is that within each round, we do not know whether support was received before or after the drop in performance as the surveys do not ask about the exact timing. Ideally, we would like to control for performance before receiving support, but due to the data limitations it may be that performance in the same round in part reflects the effect of the support.

The results in Table S9 are consistent with our earlier findings. Receiving government support in Round 1 only is associated with greater sales in Round 3, while receiving support in Round 2 only shows no statistically significant correlation with Round 3 performance. The finding for receiving repeated support (in Round 1 and 2) changes in that it is now associated with better performance in Round 3. However, this result may be due to our inability to control for the timing of the support as mentioned above.

6.6 Controlling for COVID-19 restrictions

Many countries implemented movement restrictions in response to the COVID-19 shock, which could influence firm performance and the likelihood of applying for or receiving support. Following Falciola et al. (2023), we control for these restrictions in the analysis. We rely on the Oxford COVID-19 Government Response Tracker's Stringency Index (Hale et al. 2021), which captures the strictness of lockdown-style policies across countries and time on a scale from 0 to 100, with higher values indicating more restrictions. For each firm in the sample, we created three variables corresponding

to the number of days the index was above 70 preceding the day when the survey interview was conducted for Round 1, Round 2, and Round 3. The index is not available for two of the 32 countries in our sample (Armenia and North Macedonia), which is why this robustness check includes fewer observations than the main tables.

Table S10 in the Supplementary Materials shows that our results are robust to controlling for COVID-19 restrictions. That is, we still find that government support in Round 1 only is associated with better firm performance in Round 3, while support in Round 2 only and repeated support show no statistically significant relationships with Round 3 performance.

6.7 Types of government support

So far, we have analyzed the relationship between any type of government support and Round 3 firm performance. In this subsection, we ask if this relationship varies with the type of government support received. We focus on the two most prominent types of support: wage subsidies and cash transfers, with the caveat that wage subsidies were more than twice as frequent as cash transfers. Table 2 illustrates that 30 percent of firms received wage subsidies by Round 2, with only 15 percent of firms receiving cash transfers.

Table S11 in the Supplementary Materials looks at the relationship between receiving wage subsidies/cash transfers in Round 1 and 2 and firm performance in Round 3. Wage subsidies in Round 1 are associated with better sales performance in Round 3. The correlation between cash transfers and Round 3 sales is of a similar magnitude as the one for wage subsidies, but it is not statistically significant, perhaps since fewer firms received cash transfers, lowering statistical power for detecting their effects. We can thus not draw any strong conclusions regarding the relative effects of wage subsidies and cash transfers.

Table S11 also shows weak evidence that continued support in Round 1 and 2 and support in Round 2 only are associated with worse employment outcomes in Round 3. These findings are consistent with our results from Section 5, supporting the argument that any support should be given promptly and phased out quickly.

7. Conclusion

We use data from three rounds of ES COVID-19 Follow-up Surveys for up to 32 mostly emerging markets and developing economies in ECA to assess the effect of government support during the COVID-19 crisis on firm performance by mid-2021, over a year after support measures were first enacted. We first document that 31 percent of firms received government support by Round 1 of the survey and 22 percent received support between Round 1 and 2, for a cumulative 41 percent of firms

that received government support. Firms that were more productive at baseline were less likely to receive government support in Round 1, while larger firms and those with a website were more likely to receive support.

We find that the effect of government support on firm performance varies with the timing of the support. Firms that received support in Round 1 performed better in terms of Round 3 sales, but only if they did not have continued support in Round 2. Firms that received support in Round 2 had a similar sales performance in Round 3 as those who received no support. We find no effect of government support on employment outcomes in Round 3 or a firm's likelihood of anticipating falling into arrears on outstanding liabilities in the next 6 months in Round 3.

Overall, these results suggest that during economic crisis such as the COVID-19 pandemic government support should be provided to firms quickly, but that it should also be phased out quickly. Doing so ensures that support measures help firms weather the crisis but do not delay insolvencies for firms that may no longer be competitive. This conclusion is consistent with the notion that fiscal stimulus should be timely and temporary (Elmendorf and Furman 2008). In practice, responses to previous crises have often been implemented too slowly and were not rolled back fully, leading to increasingly higher government spending (Taylor and Castillo O'Sullivan 2015).

Our results add to the small existing literature on government support during the COVID-19 shock and previous crises, which has focused primarily on OECD economies and has provided little evidence on how the effect of this support varies with its timing. While the literature has shown that government support preserved jobs in the short-run, we find no evidence of medium-run effects on employment.

By mid-2021 the COVID-19 crisis was still ongoing. An avenue for future research is to investigate the effects of government support measures during the COVID-19 crisis on long-run firm performance once such data becomes available. To help inform the government response to future crises, researchers could also try to examine the relative merit of different firm support measures such as wage subsidies compared to cash subsidies.

References

Angrist, J., and Pischke, J.-S. 2009. "Mostly harmless econometrics: An empiricist's companion." Princeton University Press. https://doi.org/10.2307/j.ctvcm4j72

Apedo-Amah, M.C., Avdiu, B., Cirera, X., Cruz, M., Davies, E., Grover, A., Iacovone, L., Kilin, U., Medvedev, D., Okechukwu Maduko, F., Poupakis, S., Torres, J., and Tran, T.T. 2020. "Unmasking the impact of COVID-19 on businesses: Firm level evidence from across the world." Policy Research Working Paper 9434, World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/34626

Autor, D., Cho, D., Crane, L.D., Goldar, M., Lutz, B., Montes, J., Peterman, W.B., Ratner, D., Villar D., and Yildirmaz, A. 2022. "The $800 Billion paycheck protection program: Where did the money go and why did it go there?" Journal of Economic Perspectives, 36(2): 55–80. https://doi.org/ 10.1257/jep.36.2.55

Bertelsmann Stiftung Transformation Index (BTI). 2020. "BTI 2020 codebook for country assessments." https://bti-project.org/en/methodology#Index%20aggregation

Bloom, N., Brynjolfsson E., Foster L., Jarmin R., Patnaik M., Saporta-Eksten I., and Van Reenen, R. 2019. "What drives differences in management practices?" American Economic Review, 109(5): 1648–1683. https://doi.org/ 10.1257/aer.20170491

Boeri, T., and Bruecker, H. 2011. "Short-time work benefits revisited: Some lessons from the Great Recession." Economic Policy, 26(68): 697–765. https://doi.org/10.1111/j.1468-0327.2011.271.x

Boeri, T., and Cahuc, P. 2023. Labor market insurance policies in the twenty-first century. Annual Review of Economics, 15(1):1–22.

Brey, B., and Hertweck, M. 2020. "The extension of short-time work schemes during the Great Recession: A story of success?" Macroeconomic Dynamics, 24(2), 360–402. https://doi.org/10.1017/S1365100518000263

Bruhn, M. 2020. "Can wage subsidies boost employment in the wake of an economic crisis? Evidence from Mexico." The Journal of Development Studies, 56(8), 1558–1577. https://doi.org/10.1080/00220388.2020.1715941

Bruhn, M., Demirguc-Kunt, A., and Singer, D. 2023. "Competition and firm recovery post-COVID-19." Small Business Economics, 61, 1555–1586. https://doi.org/10.1007/s11187-023-00750-w

Canzian, G., Crivellaro, E., Duso, D., Ferrara, A., Sasso, A., and Verzillo, S. 2025. "The impact of financial support to firms during crises: The case of Covid aid in the EU," Journal of Economic Behavior & Organization, 240. https://doi.org/10.1016/j.jebo.2025.107339

Chen, J., Cheng, Z., Gong, R.K., and Li, J. 2022. "Riding out the COVID-19 storm: How government policies affect SMEs in China." China Economic Review, 75, October 2022, 101831. https://doi.org/10.1016/j.chieco.2022.101831

Cravo, T.A., de Andrade Jacinto, P., and Quintana, R. 2024. "Can work sharing sustain employment during economic downturn? Evidence from Brazil." Labour Economics, 90: 102584. https://doi.org/10.1016/j.labeco.2024.102584

de Mel, S., McKenzie, D., and Woodruff, C. 2012. "One-time transfers of cash or capital have long-lasting effects on microenterprises in Sri Lanka." Science, 335(6071): 962–966. https://doi.org/10.1126/science.1212973

Dörr, J., Licht, G., and Murmann, S. 2022. "Small firms and the COVID-19 insolvency gap." Small Business Economics, 58, 887–917. https://doi.org/10.1007/s11187-021-00514-4

Dvoulety, O., Srhoj, S., and Pantea, S. 2021. "Public SME grants and firm performance in European Union: A systematic review of empirical evidence." Small Business Economics, 57(1): 243–263. https://doi.org/10.1007/s11187-019-00306-x

El-Haddad, A., and Zaki, C. 2023. "The role of political connections in COVID policy response: Effectiveness of firm-level government support in Egypt." The Journal of Development Studies, 59(8), 1213–1235. https://doi.org/10.1080/00220388.2023.2204179.

Elmendorf, D.W., and Furman, J. 2008. "If, When, How: A Primer on Fiscal Stimulus." The Hamilton Project Strategy Paper. The Brookings Institution. https://www.brookings.edu/articles/if-when-how-a-primer-on-fiscal-stimulus/

Falciola, J., Mohan, S., Ramos, B., and Rollo, V. 2023. "Drivers of SME Resilience in Southeast Asia during COVID-19." The Journal of Development Studies, 59(8): 1236–1257. https://doi.org/10.1080/00220388.2023.2219126

Giupponi, G., and Landais, C. 2023. "Subsidizing labor hoarding in recessions: The employment and welfare effects of short time work." The Review of Economic Studies, 90(4): 1963–2005. https://doi.org/10.1093/restud/rdac069

Grover, A., and Karplus, V. 2021. "Coping with COVID-19: Does management make firms more resilient?" Policy Research Working Paper 9514, World Bank, Washington, DC. https://doi.org/10.1596/1813-9450-9514

Guerrero-Amezaga, M.E., Humphries, J.E., Neilson, C.A., Shimberg, N., and Ulyssea, G. 2022. "Small firms and the pandemic: Evidence from Latin America." Journal of Development Economics, 155: 102775. https://doi.org/10.1016/j.jdeveco.2021.102775

Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S., and Tatlow, H. 2021. "A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker)." Nature Human Behaviour. https://doi.org/10.1038/s41562-021-01079-8

Hijzen, A., and Martin, S. 2013. "The role of short-time work schemes during the global financial crisis and early recovery: A cross-country analysis." IZA Journal of Labor Policy 2, 5 (2013). https://doi.org/10.1186/2193-9004-2-5

Honda, T., Hosono, K., Miyakawa, D., Ono, A., Uesugi, I. 2023. "Determinants and effects of the use of COVID-19 business support programs in Japan." Journal of the Japanese and International Economies, 67. https://doi.org/10.1016/j.jjie.2022.101239

Konings, J., Magerman, G., and Van Esbroeck, D. 2023. "The impact of firm-level Covid rescue policies on productivity growth and reallocation." European Economic Review, 157. https://doi.org/10.1016/j.euroecorev.2023.104508

Kopp, D., and Siegenthaler, M. 2021. "Short-time work and unemployment in and after the Great Recession." Journal of the European Economic Association, 19(4): 2283–2321. https://doi.org/10.1093/jeea/jvab003

Liu, Yu., Wei, S., and Jian, Xu. 2021. "COVID-19 and women-led businesses around the world." Finance Research Letters, 43. https://doi.org/10.1016/j.frl.2021.102012

Staples, A.J., and Krumel, T.P. 2023. "The paycheck protection program and small business performance: Evidence from craft breweries." Small Business Economics, 61: 931–956. https://doi.org/10.1007/s11187-022-00717-3

Turkson, D., Addai, N.B., Chowdhury, F. et al. 2021. "Government policies and firm performance in the COVID-19 pandemic era: A sectoral analysis." SN Bus Econ 1, 168. https://doi.org/10.1007/s43546-021-00170-6

Taylor, J., and Castillo O'Sullivan, A. 2015. "'Timely, targeted, and temporary?' an analysis of government expansions over the past century." Mercatus Research, Available at SSRN: http://dx.doi.org/10.2139/ssrn.3211609

Pop, G., and Amador, A. 2020. "To aid and how to aid: Policy options to preserve markets." *European State Aid Law Quarterly*, 19(2): 127–36. https://doi.org/10.21552/estal/2020/2/4

Wagner, J. 2021. "With a little help from my website, firm survival and web presence in times of COVID-19: Evidence from 10 European countries." Working Paper Series in Economics No. 399, University of Lüneburg, Lower Saxony, Germany. http://hdl.handle.net/10419/234588

World Bank. 2020. "Assessing the impact and policy responses in support of private-sector firms in the context of the COVID-19 pandemic." https://www.smefinanceforum.org/sites/default/files/COVID-19%20and%20firms%20final-April%209.pdf

World Bank. 2021. *Supporting Firms in Restructuring and Recovery*. EFI Insight: Finance, Competitiveness and Innovation, Washington, DC.

World Bank. 2021a. "Firm Level productivity estimates." Methodological Note. World Bank, Washington, DC. Available at: www.enterprisesurveys.org

Appendix

TABLE A1. Completion dates of survey fieldwork for the world bank enterprise surveys (with average percentage change in sales relative to one year earlier)

Country	ES Baseline	Round 1		Round 2		Round 3	
		ES COVID-19 Survey Date	Percentage Change in Sales	ES COVID-19 Survey Date	Percentage Change in Sales	ES COVID-19 Survey Date	Percentage Change in Sales
Armenia	December 2020	April 2021	–22.71	November 2021	4.78	April 2022	0.39
Bulgaria	March 2020	September 2020	–20.25	December 2020	–20.72	May 2021	–6.85
Croatia	November 2019	September 2020	–17.35	January 2021	–17.13	June 2021	5.39
Cyprus	July 2019	June 2020	–35.07	December 2020	–12.40	April 2021	–9.82
Czech Republic	March 2020	October 2020	–15.61	February 2021	–22.57	June 2021	–5.80
El Salvador	August 2016	August 2020	–58.86	January 2021	–30.35	—	
Estonia	January 2020	October 2020	–10.93	February 2021	–12.81	August 2021	8.45
Georgia	January 2020	June 2020	–46.07	November 2020	–27.15	October 2021	–3.95
Greece	July 2019	July 2020	–36.46	November 2020	–17.41	May 2021	–14.60
Guatemala	May 2018	August 2020	–53.06	January 2021	–42.71	—	
Honduras	August 2017	August 2020	–41.15	January 2021	–37.05	—	
Hungary	March 2020	September 2020	–15.09	February 2021	–14.63	June 2021	0.98
Italy	July 2019	June 2020	–44.33	December 2020	–23.58	May 2021	7.57
Jordan	November 2019	August 2020	–48.7	January 2021	–44.79	July 2021	–31.86
Kazakhstan	October 2019	March 2021	–11.18	August 2022	–1.30	—	
Latvia	January 2020	November 2020	–9.96	February 2021	–22.97	August 2021	–6.87
Lithuania	January 2020	October 2020	–13.47	February 2021	–30.63	August 2021	–9.75
Malta	September 2019	October 2020	–25.28	January 2021	–18.05	June 2021	4.04
Moldova	November 2019	May 2020	–58.01	November 2020	–27.85	June 2021	–10.20
Mongolia	May 2019	August 2020	–29.65	February 2021	–41.68	—	
Morocco	January 2020	August 2020	–44.36	February 2021	–39.91	June 2021	–10.63

(Continued)

TABLE A1. (Continued)

Country	ES Baseline	Round 1		Round 2		Round 3	
		ES COVID-19 Survey Date	Percentage Change in Sales	ES COVID-19 Survey Date	Percentage Change in Sales	ES COVID-19 Survey Date	Percentage Change in Sales
Mozambique	January 2019	January 2021	–37.9	November 2021	–37.45	—	
Nicaragua	June 2017	August 2020	–42.16	January 2021	–32.33	—	
North Macedonia	October 2019	November 2020	–27.53	June 2021	–5.98	January 2022	–5.50
Poland	December 2019	August 2020	–16.83	December 2020	–13.91	June 2021	–5.00
Portugal	January 2020	October 2020	–23.83	February 2021	–21.61	June 2021	–2.52
Romania	June 2020	September 2020	–18.66	December 2020	–14.05	June 2021	6.27
Russian Federation	July 2019	June 2020	–26.05	March 2022	–4.00	—	
Slovak Republic	March 2020	October 2020	–13.46	February 2021	–25.46	June 2021	–4.54
Slovenia	November 2019	August 2020	–15.56	December 2020	–15.24	June 2021	6.50
Zambia	March 2020	July 2020	–33.51	February 2021	–40.10	September 2021	–3.15
Zimbabwe	February 2017	July 2020	–49.42	June 2021	–31.78	August 2022	3.99
Average across countries			–30.07		–23.21		–3.64

Notes: Dates shown are for the last completed survey for each round in a country. For Romania, 92% of the ES Baseline interviews were completed before March 2020.

TABLE A2. Description of main and control variables

Variable	Description
Received government support	Equals 1 if firm received any national or local government assistance provided in response to the COVID-19 outbreak and 0 otherwise.
Cash transfer	Equals 1 if the government support received by firm was a cash transfer and 0 otherwise.
Payment deferrals	Equals 1 if the government support received by firm was a payment deferral and 0 otherwise.
New Credit	Equals 1 if the government support received by firm was new credit and 0 otherwise.
Fiscal relief	Equals 1 if the government support received by firm was fiscal relief and 0 otherwise.
Wage subsidies	Equals 1 if the government support received by firm was wage subsidies and 0 otherwise.
Received any support in Round 1 or 2	Equals 1 if firm received any government support during Round 1 or 2
Received any support in Round 1	Equals 1 if firm received any government support during Round 1
Received any support in Round 2	Equals 1 if firm received any government support during Round 2
Received in all 3 Rounds dummy	Equals 1 if firm received any government support during all 3 Rounds
Received in Round 1 and 2 dummy	Equals 1 if firm received any government support during Round 1 and 2 only
Received in Round 1 and 3 dummy	Equals 1 if firm received any government support during Round 1 and 3 only
Received in Round 2 and 3 dummy	Equals 1 if firm received any government support during Round 2 and 3 only
Received in Round 1 only dummy	Equals 1 if firm received any government support during Round 1 only
Received in Round 2 only dummy	Equals 1 if firm received any government support during Round 2 only
Received in Round 3 only dummy	Equals 1 if firm received any government support during Round 3 only
No Rounds dummy (did not receive any support at all)	Equals 1 if firm did not receive any government support at all
Log(labor productivity)	Log of annual sales divided by the number of full-time permanent employees (in USD 2009)
Log(number of employees)	Log of total number of full-time employees
Log(firm age)	Log of number of years that the firm has been operating.
Top manager female	Equals 1 if firm's top manager is female and 0 otherwise.
Innovated during 2017–19	Equals 1 if firm innovated a product or process in the last 3 years and 0 otherwise.
State ownership (10%)	Equals 1 if firm is at least 10% state owned and 0 otherwise.
Foreign ownership (10%)	Equals 1 if firm is at least 10% foreign owned and 0 otherwise.
Has line of credit or loan	Equals 1 if firm has line of credit or bank loans and 0 otherwise
Owns a website	Equals 1 if firm has its own website and 0 otherwise.
Local market	Equals 1 if firm's main product is sold mostly in same municipality where firm is located and 0 otherwise.
National market	Equals 1 if firm's main product is sold mostly across the country where the firm is located and 0 otherwise.
International market	Equals 1 if firm's main product is sold mostly internationally and 0 otherwise.
Manufacturing	Equals 1 if firm is in the manufacturing sector and 0 otherwise.
Retail	Equals 1 if firm is in the retail sector and 0 otherwise.
Other services	Equals 1 if firm is in the selected services sector, excluding retail, and 0 otherwise.

(Continued)

TABLE A2. (Continued)

Variable	Description
Percentage change in monthly sales relative to one year earlier	Average percentage change in monthly sales compared to the same month one year earlier
Percentage change in number of permanent full-time workers since December 2019	Average percentage change in permanent full-time workers since December 2019. The formula is: ((a1-a0)/[(a1+a0)/2])*100; where a1 = permanent full-time workers, end of last completed month & a0 = permanent full-time workers, end of December 2019
Reduced number of permanent full-time workers since December 2019	Equals 100 if firm reduced number of permanent full-time workers since December 2019 and 0 otherwise.
Anticipate falling into arrears on outstanding liabilities in the next 6 months	Equals 100 if firm anticipates falling into arrears on outstanding liabilities in the next 6 months and 0 otherwise.

Supplementary materials

TABLE S1. Comparing characteristics across firms receiving and not receiving support

	Government Support			
	No Rounds	Round 1 Only	Round 2 Only	Round 1 and 2
	Mean/(SD)	Mean/(SD)	Mean/(SD)	Mean/(SD)
	(1)	(2)	(3)	(4)
Log(labor productivity)	10.560	10.735	10.697	10.902***
	(9.690)	(6.149)	(7.706)	(5.282)
Log(number of employees)	3.159	3.277	3.199	3.384**
	(3.602)	(2.854)	(1.756)	(2.703)
Log(firm age)	3.011	3.029	3.015	3.010
	(2.907)	(2.036)	(2.403)	(1.863)
Top manager female	0.164	0.174	0.175	0.166
	(0.717)	(0.684)	(0.624)	(0.409)
Innovated during 2017–19	0.347	0.418**	0.322	0.414*
	(1.911)	(1.374)	(1.694)	(1.221)
State ownership (10%)	0.008	0.004	0.009	0.003*
	(0.185)	(0.076)	(0.122)	(0.052)
Foreign ownership (10%)	0.100	0.092	0.092	0.118
	(0.879)	(0.464)	(0.498)	(0.462)
Has line of credit or loan	0.402	0.487***	0.420	0.510***
	(1.953)	(1.277)	(1.493)	(0.623)
Owns a website	0.654	0.734***	0.702	0.786***
	(1.878)	(1.295)	(1.140)	(1.268)
National market dummy	0.467	0.497	0.458	0.482
	(1.367)	(0.914)	(0.646)	(0.966)
International market dummy	0.149	0.197**	0.187*	0.196**
	(0.811)	(0.886)	(0.565)	(0.696)
Sales change in round 1 (%)	–23.120	–21.821	–34.227**	–32.674*
	(232.969)	(92.524)	(104.882)	(104.373)
Workers change in round 1 (%)	–8.027	–5.720	–12.111	–8.997
	(102.422)	(60.698)	(116.144)	(87.870)
Decreased workers in round 1	23.023	26.206	27.530**	30.254***
	(116.764)	(86.722)	(78.485)	(98.618)
Anticipate falling in arrears in round 1	27.256	25.033	34.181	33.662
	(187.040)	(152.033)	(98.250)	(116.816)
Sales change in round 2 (%)	–16.875	–12.734*	–27.737***	–25.554**
	(147.977)	(83.704)	(45.149)	(70.386)
Workers change in round 2 (%)	–8.393	–4.405*	–9.221	–6.570
	(114.384)	(49.088)	(58.626)	(44.670)
Decreased workers in round 2	35.555	35.082	36.186	41.243
	(163.385)	(122.173)	(69.225)	(90.831)

(Continued)

TABLE S1. (Continued)

	Government Support			
	No Rounds	Round 1 Only	Round 2 Only	Round 1 and 2
	Mean/(SD)	Mean/(SD)	Mean/(SD)	Mean/(SD)
	(1)	(2)	(3)	(4)
Anticipate falling in arrears in round 2	21.392	21.252	34.742**	26.942*
	(117.949)	(114.102)	(87.630)	(96.106)
Number of observations	3,470	1,618	684	1,072

Notes: The columns show the means and standard deviations for firms that received no government support (Column 1), support in Round 1 only (Column 2), support in Round 2 only (Column 3), or support in Rounds 1 and 2 (Column 4). The stars denote the statistical significance of the difference in means between the respective group and those receiving no support, with standard errors clustered at the country level. For example, the stars in Column 3 are for the difference in means across Columns 3 and 1. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S2. Effects of Round 1 and 2 support on Round 3 Performance (OLS vs. Probit)

	Decreased Employment		Anticipate Falling into Arrears	
	OLS	Probit	OLS	Probit
	(1)	(2)	(3)	(4)
Panel A: Combined effect of Round 1 or 2 Support				
Received any support in Round 1 or 2	3.168	0.032	2.117	0.021
	(2.645)	(0.026)	(2.665)	(0.025)
R^2	0.059		0.200	
Number of observations	5,875	5,875	5,543	5,405
Panel B: Separate effects of Round 1 and 2 Support				
Support in Round 1 only dummy	1.443	0.014	2.517	0.025
	(3.594)	(0.036)	(4.018)	(0.037)
Support in Round 1 and 2 dummy	4.628	0.046	1.906	0.018
	(3.427)	(0.034)	(2.571)	(0.025)
Support in Round 2 only dummy	4.979	0.049	1.564	0.019
	(3.464)	(0.034)	(3.221)	(0.029)
R^2	0.059		0.200	
Number of observations	5,875	5,875	5,543	5,405

Notes: The regressions in Columns 1 and 3 are ordinary least squares. Column 2 and 4 show marginal effects computed by Probit. All regressions include country-sector fixed effects, as well as the controls listed in Table S3. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S3. Exit RATES between Round 2 and 3

Exit Measure	Obs	Mean
Confirmed exit in Round 3	6,844	0.01
Assumed exit in Round 3	6,844	0.08
Did not answer Round 3	6,844	0.16

Notes: The sample includes firms that reported government support both in Round 1 and 2 (i.e., firms that had not closed by Round 2). Confirmed exit means the firm was confirmed permanently closed by Round 3. Assumed exit includes firms that are confirmed permanently closed by Round 3 or assumed closed since they could not be contacted. Did not answer Round 3 additionally includes those firms that refused to answer Round 3.

Source: Enterprise Surveys COVID-19 Follow-up Surveys.

TABLE S4. Combined effect of Round 1 or 2 support on Round 3 exit

	Confirmed Exit	Assumed Exit	Did Not Answer Round 3
Received any support in Round 1 or 2	−0.003	−0.002	−0.007
	(0.004)	(0.019)	(0.017)
Log(labor productivity)	−0.006**	0.002	0.008*
	(0.003)	(0.004)	(0.004)
Log(number of employees)	−0.005*	−0.005	−0.013
	(0.003)	(0.006)	(0.010)
Log(firm age)	−0.001	0.004	−0.014
	(0.003)	(0.008)	(0.014)
Top manager female dummy	0.005	0.032*	0.025
	(0.005)	(0.017)	(0.022)
Innovated during 2017–19	0.006	0.007	0.002
	(0.005)	(0.013)	(0.019)
State ownership (10%)	−0.007	−0.050**	−0.054
	(0.006)	(0.019)	(0.071)
Foreign ownership (10%)	0.003	−0.000	0.066
	(0.006)	(0.032)	(0.044)
Has line of credit or loan	0.004	0.018	0.004
	(0.004)	(0.011)	(0.018)
Owns a website	−0.004	0.005	0.011
	(0.005)	(0.009)	(0.016)
National market dummy	−0.002	−0.019*	−0.002
	(0.003)	(0.010)	(0.014)
International market dummy	−0.001	0.026	0.040
	(0.006)	(0.027)	(0.030)
Constant	0.097**	0.045	0.107
	(0.038)	(0.064)	(0.068)
R^2	0.031	0.141	0.120
Number of observations	6,844	6,844	6,844

Notes: All regressions are ordinary least squares and include sector and country fixed effects. Standard errors are clustered at the country level. The sample includes firms that reported government support both in Round 1 and 2 (i.e., firms that had not closed by Round 2). Confirmed exit means the firm was confirmed permanently closed by Round 3. Assumed exit includes firms that are confirmed permanently closed by Round 3 or assumed closed since they could not be contacted. Did not answer Round 3 additionally includes those firms that refused to answer Round 3. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S5. Separate effects of Round 1 and 2 support on Round 3 exit

	Confirmed Exit	Assumed Exit	Did Not Answer Round 3
Support in Round 1 only dummy	−0.001	0.003	0.005
	(0.005)	(0.025)	(0.026)
Support in Round 1 and 2 dummy	−0.005	0.003	0.001
	(0.006)	(0.017)	(0.025)
Support in Round 2 only dummy	−0.005	−0.020	−0.045*
	(0.003)	(0.026)	(0.025)
R^2	0.031	0.141	0.121
Number of observations	6,844	6,844	6,844

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the control variables listed in Table S4. Standard errors are clustered at the country level. The sample includes firms that reported government support both in Round 1 and 2 (i.e., firms that had not closed by Round 2). Confirmed exit means the firm was confirmed permanently closed by Round 3. Assumed exit includes firms that are confirmed permanently closed by Round 3 or assumed closed since they could not be contacted. Did not answer Round 3 additionally includes those firms that refused to answer Round 3. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S6. Effects of Round 1 and 2 support on Round 3 performance (with BTI interaction variables)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A: Combined effect of Round 1 or 2 support				
Received any support in Round 1 or 2	9.094**	2.315	−0.836	−1.734
	(4.104)	(3.246)	(4.466)	(4.756)
Received any support in Round 1 or 2 * BTI	−2.336	−0.790	0.896	2.020
	(2.160)	(1.828)	(2.316)	(1.981)
Log(labor productivity)	1.526*	0.629	−1.706	−2.039***
	(0.741)	(1.686)	(1.460)	(0.649)
Log(labor productivity)*BTI	−0.106	1.687**	−1.797***	−0.683*
market organization	(0.300)	(0.674)	(0.577)	(0.370)
R^2	0.080	0.082	0.063	0.210
Number of observations	4,280	4,331	4,331	4,002
Panel B: Separate effects of Round 1 and 2 support				
Support in Round 1 only dummy	13.361**	4.860	−3.676	−2.900
	(5.014)	(4.463)	(5.731)	(5.891)
Support in Round 1 and 2 dummy	4.450	3.035	1.042	−3.097
	(5.484)	(3.268)	(5.942)	(6.866)
Support in Round 2 only dummy	4.629	−1.850	1.509	0.223
	(6.175)	(3.890)	(3.441)	(4.501)
Support in Round 1 only dummy * BTI	−2.593	−0.028	0.441	2.848
	(2.236)	(2.434)	(2.879)	(2.836)

(Continued)

TABLE S6. (Continued)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Support in Round 1 and 2 dummy * BTI	–1.949	–3.881*	3.545	2.519
	(3.328)	(2.117)	(3.001)	(2.763)
Support in Round 2 only dummy * BTI	–2.205	0.417	–1.967	–0.392
	(3.847)	(2.039)	(2.041)	(1.742)
Log(labor productivity)	1.614**	0.664	–1.683	–2.027***
	(0.718)	(1.666)	(1.464)	(0.659)
Log(labor productivity)*BTI	–0.095	1.711**	–1.777***	–0.665*
market organization	(0.282)	(0.672)	(0.582)	(0.378)
R^2	0.085	0.085	0.067	0.211
Number of observations	4,280	4,331	4,331	4,002

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the controls listed in Table S4. The sample here is smaller because the BTI is not available for Cyprus, Greece, Italy, Malta, and Portugal. BTI market organization is based on responses to the question: "To what level have the fundamentals of market-based competition developed?" BTI market organization is centered on its mean to facilitate interpretation of the coefficients. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys; Bertelsmann Stiftung Transformation Index (BTI) 2020.

TABLE S7. Effects of Round 1 and 2 support on Round 3 performance (using country-sector fixed effects)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A: Combined effect of Round 1 or 2 Support				
Received any support in Round 1 or 2	5.125*	–0.396	3.827	2.444
	(2.828)	(2.103)	(2.433)	(2.472)
R^2	0.108	0.100	0.083	0.217
Number of observations	5,821	5,875	5,875	5,543
Panel B: Separate effects of Round 1 and 2 Support				
Support in Round 1 only dummy	8.138**	1.082	2.520	2.944
	(3.119)	(2.991)	(3.246)	(3.836)
Support in Round 1 and 2 dummy	3.097	–2.474	4.876	2.459
	(3.449)	(3.492)	(3.543)	(2.439)
Support in Round 2 only dummy	1.514	–0.806	5.279	1.394
	(4.312)	(2.870)	(3.730)	(3.168)
R^2	0.111	0.101	0.083	0.218
Number of observations	5,821	5,875	5,875	5,543

Notes: All regressions are ordinary least squares and include country-sector fixed effects, as well as the controls listed in Table S4. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S8. Effects of Round 1 and 2 support on Round 3 performance (controlling for management quality)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A1: Combined effect of Round 1 or 2 support (comparison sample, not controlling for management quality)				
Received any support in Round 1 or 2	2.830	1.719	3.505	3.489
	(3.008)	(4.038)	(5.211)	(3.075)
R^2	0.117	0.098	0.089	0.215
Number of observations	2,930	2,940	2,940	2,827
Panel A2: Combined effect of Round 1 or 2 support (controlling for management quality)				
Received any support in Round 1 or 2	2.834	1.671	3.630	3.502
	(2.979)	(3.999)	(5.088)	(3.067)
Management quality	–0.367	4.065	–10.633	–1.448
	(7.496)	(6.657)	(8.965)	(3.968)
R^2	0.117	0.098	0.091	0.215
Number of observations	2,930	2,940	2,940	2,827
Panel B1: Separate effects of Round 1 and 2 support (Comparison sample, not controlling for management quality)				
Support in Round 1 only dummy	3.738	4.374	–0.610	4.382
	(3.082)	(3.408)	(6.467)	(3.904)
Support in Round 1 and 2 dummy	4.873	–5.148	8.953	6.162*
	(3.574)	(5.427)	(5.919)	(3.197)
Support in Round 2 only dummy	–1.413	6.535	3.197	–1.980
	(4.846)	(8.336)	(6.093)	(5.245)
R^2	0.119	0.101	0.092	0.218
Number of observations	2,930	2,940	2,940	2,827
Panel B2: Separate effects of Round 1 and 2 support (Controlling for management quality)				
Support in Round 1 only dummy	3.751	4.291	–0.383	4.428
	(2.981)	(3.356)	(6.303)	(3.887)
Support in Round 1 and 2 dummy	4.875	–5.159	8.984	6.160*
	(3.568)	(5.455)	(5.886)	(3.218)
Support in Round 2 only dummy	–1.417	6.513	3.257	–1.999
	(4.855)	(8.306)	(6.003)	(5.255)
Management quality	–0.509	3.769	–10.279	–1.632
	(7.451)	(6.745)	(9.076)	(3.999)
R^2	0.119	0.102	0.094	0.218
Number of observations	2,930	2,940	2,940	2,827

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the controls listed in Table S4. Management quality is only available for firms with 20 or more employees. Panels A1 and B1 show our main results (from Tables 6 and 7) in this smaller sample. Standard errors are clustered at the country level. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S9. Effect of Round 2 support on Round 3 performance (controlling for Round 1 and 2 performance)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A: Combined effect of Round 1 or 2 Support				
Received any support in Round 1 or 2	9.093***	0.953	0.808	−0.491
	(2.500)	(2.335)	(2.427)	(2.410)
R^2	0.134	0.323	0.345	0.288
Number of observations	5,560	5,786	5,804	5,028
Panel B: Separate effects of Round 1 and 2 Support				
Support in Round 1 only dummy	10.715***	0.226	2.097	0.290
	(2.840)	(2.590)	(2.595)	(3.552)
Support in Round 1 and 2 dummy	8.634**	−0.188	0.756	−0.380
	(3.084)	(3.187)	(3.477)	(2.570)
Support in Round 2 only dummy	6.082	4.177	−2.002	−2.271
	(4.277)	(3.406)	(3.282)	(2.461)
R^2	0.135	0.324	0.346	0.288
Number of observations	5,560	5,786	5,804	5,028

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the controls listed in Table S4. Regressions control for Round 1 and Round 2 outcome variables for the respective regression. For example, when Round 3 percentage change in sales is the outcome, the regressions control for percentage change in sales in Round 1 and in Round 2. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S10. Effect of Round 2 support on Round 3 performance (controlling for COVID-19 restrictions)

	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A: Combined effect of Round 1 or 2 Support				
Received any support in Round 1 or 2	5.049	−0.929	3.290	0.446
	(3.348)	(2.093)	(2.919)	(2.249)
R^2	0.086	0.075	0.067	0.206
Number of observations	5,462	5,513	5,513	5,418
Panel B: Separate effects of Round 1 and 2 Support				
Support in Round 1 only dummy	8.729**	−0.169	2.344	0.882
	(3.668)	(3.172)	(3.940)	(3.931)
Support in Round 1 and 2 dummy	3.876	−2.279	4.023	0.404
	(3.629)	(3.591)	(3.760)	(2.240)
Support in Round 2 only dummy	−0.483	−0.725	4.254	−0.390
	(4.897)	(2.868)	(3.600)	(2.688)
R^2	0.091	0.076	0.067	0.206
Number of observations	5,462	5,513	5,513	5,418

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the controls listed in Table S4. Regressions control for three variables measuring the number of days when the Oxford COVID-19 Government Response Tracker's Stringency Index was above 70 preceding the day when the firm's survey interview was conducted for Round 1, Round 2, and Round 3, respectively. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.

TABLE S11. Effects of Round 1 and 2 support on Round 3 performance (wage subsidies and cash transfers)

	Wage Subsidies				Cash Transfers			
	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears	Percentage Change in Sales	Percentage Change in Employment	Decreased Employment	Anticipate Falling into Arrears
Panel A: Combined effect of Round 1 or 2 support								
Received support in Round 1 or 2	4.363*	0.691	1.538	2.348	3.183	−0.385	3.401	6.089
	(2.261)	(2.827)	(2.596)	(2.207)	(2.902)	(3.343)	(2.488)	(3.974)
R^2	0.078	0.077	0.058	0.200	0.076	0.077	0.059	0.200
Number of observations	5,811	5,864	5,864	5,534	5,805	5,858	5,858	5,533
Panel B: Separate effects of Round 1 and 2 support								
Support in Round 1 only dummy	7.348***	0.197	1.881	2.371	5.602	1.788	−0.398	7.495
	(2.342)	(2.445)	(2.883)	(3.505)	(4.313)	(4.514)	(3.132)	(6.463)
Support in Round 1 and 2 dummy	1.423	−2.988	6.851*	1.609	−7.181	−12.763	6.484	0.005
	(3.224)	(3.982)	(3.870)	(2.644)	(5.706)	(7.808)	(8.107)	(5.422)
Support in Round 2 only dummy	−0.292	5.867	−3.152	4.008	4.367	−1.382	7.798*	3.338
	(4.381)	(6.507)	(3.962)	(3.054)	(3.174)	(5.612)	(4.417)	(3.458)
R^2	0.081	0.078	0.060	0.199	0.089	0.078	0.064	0.206
Number of observations	5,813	5,866	5,866	5,535	5,774	5,825	5,825	5,507

Notes: All regressions are ordinary least squares and include sector and country fixed effects, as well as the controls listed in Table S4. Standard errors are clustered at the country level. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Sources: Enterprise Surveys COVID-19 Follow-up Surveys and Enterprise Surveys.