Small firms amidst COVID-19: Financial constraints and role of government support

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Abstract
The coronavirus disease 2019 has severely affected the financially constrained small and medium enterprises (SMEs). In response, various countries employed several policies to support SMEs. Using rich firm-level data from 34 countries, we study the impact of the pandemic-led crisis on cash-strapped SMEs and the role of governments in offsetting losses. Our results suggest that (i) government support programmes target mostly financially constrained firms; (ii) firms adjustments to the pandemic are associated with the likelihood of government support; (iii) financially constrained firms are more likely to lay off workers; and (iv) financially constrained firms layoff more male employees than female employees.

Keywords
COVID-19, employment, financial constraints, government support, SMEs

1 | INTRODUCTION

The coronavirus epidemic that erupted in February 2020 has significantly impacted the world economy. Governments across countries at all income levels resorted to several measures that curb economic activities, with remarkable consistency (von Carnap et al., 2020). This economic shock on both the demand and supply sides affected global production and services. In particular, the intensity of the adverse effect fell severely on the small and medium enterprises (SMEs), which are more financially constrained (Baldwin & Mauro, 2020; Cao & Leung, 2020). Realizing the unfolding crisis, policy makers across the globe relied on various forms of short-run and long-run policies to support SMEs (Humphries et al., 2020). Given this backdrop, this paper explores the impact of the pandemic-led crisis on financially constrained SMEs and the role of government support to offset the perils of the economic crisis.
Access to finance is vital for the survival of SMEs during the pandemic crisis. Several studies have shown that SMEs are financially more constrained than large firms (Beck & Demirguc-Kunt, 2006; Konte & Ndubuisi, 2021; Kuntchev et al., 2012), and the presence of financial constraints exerts a negative impact on the growth and survival of SMEs (Oliveira & Fortunato, 2006). For example, one study estimates that the presence of financial constraints is associated with a 10 percentage point reduction in the growth of small firms (Beck et al., 2008). The COVID-19 pandemic has added to the already existing woes of SMEs reeling under enormous financial constraints. Since SMEs are widely acknowledged as engines of production and employment (Acs & Audretsch, 1988), it would indicate that any financial constraints they face could severely impact millions of jobs and, in the process, hurt development goals.

One way to address the issue is by providing adequate support to SMEs through various programs (Acharya, 2020; Drechsel & Kalemli-Ozcan, 2020). The need for financial support for SMEs becomes imperative during the time of crisis (OECD, 2020). Governments all over the world resorted to various measures to support SMEs including access to new credit, cash transfers, deferral of payments, fiscal exemptions and wage subsidies (see, Dell’Ariccia et al., 2020; Garicano, 2020; Ilzetzki, 2020). In this regard, one pertinent question that merits investigation is whether these support measures have succeeded in targeting financially vulnerable enterprises. We investigate this question in our study and find that financially constrained firms are more likely to receive government support, and they stand a 57% higher chance of obtaining support from the government. Further, we also probe how firms have adjusted their production and services in response to the pandemic. We show that firms which received government support are more likely to alter their business activities.

Another related concern often pointed out by scholars is the downsizing of the workforce following an economic shock. Our study examines whether financially constrained firms resize their workforce in response to the pandemic. There is ample evidence in the literature that shows financially constrained firms resort to layoffs (Bentolila et al., 2018; Berton et al., 2018), and the number of workers sacked is proportional to the intensity of the crisis (Fernandes & Ferreira, 2017; Popov & Rocholl, 2018). Our findings support this assertion as we observe that financially constrained firms resorted to layoffs during the ongoing pandemic. Finally, we explore the gender bias in layoffs during the pandemic period. We find evidence of job loss for female workers is relatively lower compared to male workers. A plausible explanation for this result is firms may have an incentive to retain the cheap labour, given the gender wage gap.

The main challenge for scholars interested in analyzing the economic impact of the pandemic is the dearth of firm-level information. However, the recently released firm-level survey data for selected countries by the World Bank enable us to overcome this lacuna. More specifically, we use the firm-level information from the World Bank’s recently released COVID-19 Follow-up Enterprise Survey (CFES) for 34 countries. The CFES is a follow-up survey of the same firms included in the previous rounds of the World Bank Enterprise Survey (WBES). The advantage of this data set is that it provides specific information on whether the firms received government support or resorted to layoffs during the COVID-19 pandemic-led crisis. For our study, we merge the information on the financial position, status, government support, and employee layoffs from the CFES with other firm characteristics from the WBES.

This study contributes to the existing literature on SMEs in the following ways. First, existing studies investigate the impact of government support on innovation, finance, and productivity (Lim et al., 2018; Mateut, 2018; Vu & Tran, 2020). Unlike these studies, we examine whether the government support measures are channelized to financially constrained firms. We also analyse whether such policy measures have helped the firms to tide over the crisis. Second, we focus on employee layoffs during the time of crisis, and whether the firms have resized their workforce in response to the pandemic. In doing so, we also add to the literature on employment implications during the time of economic crisis (Fernandes & Ferreira, 2017; Popov & Rocholl, 2018). Finally, our study links firm survival with government support during the COVID-19 crisis. Prior studies on firm survival during an economic crisis predominantly focus on innovation, intangible assets, skill developments, and macroeconomic shocks (Bartoloni et al., 2020; Cefis & Marsili, 2019; Guerzoni et al., 2020; Landini et al., 2018). We highlight the significance of government support for the survival of SMEs to overcome the crisis.
The rest of the paper is organized as follows. Section 2 provides a brief about the economy during the time of pandemic and the background literature. Section 3 explains the data and variables used in the study. Section 4 discusses the empirical strategy employed in the study. Section 5 presents our findings. Finally, Section 6 concludes the study.

2 | BACKGROUND AND RELATED LITERATURE

2.1 | Economy in the peril of COVID-19

The COVID-19-induced demand and supply-side shock turned out to be a leading factor for the economic crisis, which affected firms globally (Baldwin & Mauro, 2020). This drove firms to shut down their operations and worker layoffs, which further exacerbated the crisis. The economic shock led to contraction in global GDP, shutting down of businesses, disrupted millions of lives, and jeopardized decades of development progress.

Envisaging the deepest global recession in eight decades, World Bank predicted a 5.2% contraction in global GDP during 2020 (World Bank, 2020). Similarly, IMF forecasted the sharpest slowdown of the global economy since the Great Depression of the 1930s. SMEs, which make up the majority of businesses around the world especially in emerging and developing economies, bore the brunt of such widespread disruption. The sudden and prolonged lockdowns caused large-scale exit of small firms, since they are more financially constrained, and rely heavily on internal funds and informal sources of finance (Cao & Leung, 2020). Realizing the magnitude of the crisis unfolding, policy makers across the globe resorted to varied forms of intervention to support SMEs. These policy measures included short-run measures like income and profit tax deferrals, loan guarantees and direct lending, and wage subsidies as well as long-term policy measures including new alternative markets, teleworking and digitalization, innovation and training of the workers.

2.2 | Review of literature

This study belongs to the broad strand of literature on the impact of financial constraints on the economic activities of small firms. As already mentioned, COVID-19-induced economic distress is likely to create dire consequences for small firms across developing and developed economies. For instance, the crisis created deep disruptions in both the demand and supply sides across the globe. There are mounting concerns about firm closures across countries, especially SMEs. Uncertainty created by the economic crisis and financial constraints led to firm closures. Unlike large firms, SMEs are less likely to have sufficient internal funds to withstand the pandemic-induced shock (Beck & Demirguc-Kunt, 2006). Therefore, financial constraints are likely to determine the survival of even productive SMEs. Especially, during an economic downturn, lenders are more likely to deny loans to small firms given the risky nature of such enterprises (Bakhtiari et al., 2020). In the context of the 2008 financial crisis, North et al. (2013) show that SMEs in the UK encountered severe difficulty in obtaining credit.

The studies in context of epidemiological shocks on the firm survival was mainly macroeconomic in nature (World Bank, 2020). In the case of the COVID-19 pandemic, there is an emerging set of studies, which analyzed the survival of SMEs and the role of government support using firm-level data. Bosio and Djankov (2020), using the World Bank’s Enterprise Survey, show that the median firm survival times vary from 7 to 19 weeks. Hong et al. (2020) using monthly data of Japanese firms document a 16% increase in the firm exit associated with the COVID-19 pandemic. Our study adds to these group of studies, which analyzed the initial impact of the pandemic.

1Percentage of SMEs closed their operation and face financial cruch during pandemic is presented in Figure A1 and Figure A2 in Appendix.
on SMEs. In the case of the United States, Bartik et al. (2020) based on a survey carried out during the month of March 2020 report that 43% of the SMEs are temporarily closed with many of the respondents reported less than 1 month of cash on hand. Farilie (2020) using the Current Population Survey reported that active business owners in the United States fell from 15 million to 11.7 million from February to April 2020. Using cross-country firm-level information obtained from the WBES, Muzi et al. (2021) report a positive association between productivity and firm survival during the pandemic. However, these studies overlooked the role of financial constraints in firm exit. Since SMEs have limited financial resources and the capability to tackle a crisis of this magnitude, many of them are likely to exit. Therefore, government support may prevent SMEs from going bankrupt and shutting down. Our study also complements rapidly emerging literature on the role of government interventions in supporting SMEs during the pandemic. Kuchakov and Skougarevskiy (2021) find Russian COVID wage subsidies programme had no effects on the survival and profitability of SMEs. Groenewegen et al. (2021) investigated the nature of the firms that received COVID-19 government aid in the Netherlands. They report that aid mostly ended up at SMEs that were managed better. Given this background, the objective of this study is to examine the association of the pandemic-led crisis on SMEs and the role of government support in offsetting the losses.

3 | DATA AND VARIABLES

3.1 | Data

Data for this study are drawn from multiple sources. Our main data is the firm-level information collected by the World Bank through their COVID-19 Follow-up Enterprise Survey (CFES), conducted in May–December 2020. The CFES provides information on 25,114 firms belongs to 34 countries during the pandemic period.² It is a telephonic survey of firms and the sample frame included firms surveyed in the recently concluded WBES. The data include SMEs belonging to various sectors. The survey provides information on sales, employment, input purchases, financial and liquidity position, and government support during the pandemic period. We mainly use the information on operation status, issues related to finance, government support, employment, and adjustments in production/services from the CFES. We then merge this data set with the WBES to obtain information on other firm-level characteristics. The WBES provides information pertaining to basic characteristics including age, location, and international exposure that are relevant to the present study. We were able to match 23,486 firms in this process (93.5% of CFES firms are merged with WBES). Our focus is on SMEs and we relied on the size classification of the World Bank to identify SMEs (firms which employ less than 100 workers).

We merge the CFES and WBES datasets using a unique identifier “idstd”. We omit firms with missing values for any of the variables (main variables and control variables) considered for the analysis. Therefore, our final sample includes 12,858 firms. However, the number of firms in different set of analyses varies due to the unavailability of key variables required for that particular analysis. Table A1 in the appendix presents the number of firms by country in each set of analyses.

3.2 | Variables

In this subsection, we discuss the construction of variables used in the study. Since most of the responses in the CFES and WBES are either binary (yes/no) or ordinal (increase/same/decrease) in nature, our main variables are mostly binary or ordinal. To analyze the relationship between government support and financial constraints, we use the following variables:

²As on 28 January 2021.
Financial Constraint: to identify financially constrained firms, we use the information on difficulties in obtaining external funds before the pandemic. We utilize the survey question "How Much of an Obstacle: Access To Finance (k30)" from the WBES. Based on this information, we define financially constrained firms using a dummy variable that takes value 1 for the firms that face obstacles in accessing external finance; zero otherwise.

Government Support (Govt Support): We construct this variable using the responses to the survey question "... has this establishment received any national or local government support in response to the COVID-19 crisis? (COVf1)". This variable is a dummy variable, which equals 1 if the firm has received government support or expect to receive within 3 months; and 0 otherwise.3

We further segregate the information on Government support to explore the effect of different government measures such as access to new credit (New Credit), cash transfers for businesses (Cash Transfer), deferral of credit payments, rent or mortgage, suspension of interest payments, or rollover of debt (Deferral), fiscal exemptions or reductions (Fiscal), and wage subsidies (Wage Subsidies). These variables are constructed as follows:

- **New Credit**: This takes the form of a dummy variable constructed based on the survey question "COVf2c". It takes value 1 if the firm reports that it had received support in terms of new credit during the pandemic period, and 0 otherwise.

- **Cash Transfer**: This variable is constructed based on the responses to the survey question "COVf2a". The variable takes value 1 if the firm reported that it received cash transfer for business; zero otherwise.

- **Deferral**: This is a binary variable for any support in terms of deferral of any payments. We construct this variable utilizing the responses to the survey question "COVf2b".

- **Fiscal Measures**: a dummy variable constructed based on the survey question "COVf2d" that takes value 1, if the firm mentioned that it obtained any fiscal exemption or reduction; zero otherwise.

- **Wage Subsidies**: a dummy variable constructed based on the survey question "COVf2e" that takes value 1 if the firm reported that it received wage subsidies; zero otherwise.

To verify whether government support helped the sample firms to cope with the pandemic, we construct the following variable:

- **Coping with Pandemic**: a dummy variable constructed based on the survey question "Has this establishment adjusted or converted, partially or fully, its production or the services it offers in response to the COVID-19 outbreak? (COVc3)", which takes value 1, if the firm adjusted its production or services due to the pandemic; zero otherwise.

For the final set of analyses, i.e., to understand the nexus between financial constraints and employee layoffs during the crisis period, we construct the following measures:

- **Layoff**: For layoff, we construct a dummy variable from the responses to the survey question "Has the number of permanent workers remained the same? (COVd3a)". It takes the value 1, if the firm reduced its number of workers; zero if it either increased or stayed the same.

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3In our data, 6% of the firms report that they expected to receive government support within 3 months. We also carried out the analysis without these firms. However, this approach did not change the main findings of our study.
Female-to-male layoff ratio: This variable denotes the ratio of the number of female to male employees who have been laid off. This variable construction relies on the question "Number of female workers laid off (COVd7)" and Total Layoff.

Following the standard practice in the literature, we use age of the firm (Age), size of the firm (Size), international exposure (Export), ownership status (Ownership) and location of the firm (Location) as control variables. Age is measured as the logarithm of a number of years since the firm began its operation. Size is measured as the logarithm of a number of employees. Export is a dummy variable that takes the value 1, if the firm participates in the export market; zero otherwise, Ownership is a dummy variable that takes the value 1 if the firm is part of a large organization (business group affiliates); zero otherwise, and Location is a dummy variable that takes the value 1, if the firm is located in the capital city; zero otherwise. All these control variables are obtained from the WBES (pre-pandemic period).

3.3 Descriptive analysis

Table 1 presents the descriptive statistics of the variables used in the empirical analysis. We observe that nearly 41% of the firms in our sample received support from the national or local government. The government support is predominantly in the form of wage subsidies (67%), followed by cash transfer (42%). The mean value of the financial constraint variable is 0.58 indicating that 58% of the firms in our sample are financially constrained. It is also evident from the table that around 1/3rd of the sample firms have managed to adjust their production or services in response to the pandemic. The mean value of layoff lies above 0.28, which indicates that more than one-fourth of

| Variable                  | Obs  | Mean  | Std. Dev. | Min  | Max  |
|---------------------------|------|-------|-----------|------|------|
| Govt Support              | 12,858 | 0.409 | 0.492     | 0    | 1    |
| Financial Constraint      | 12,761 | 0.581 | 0.493     | 0    | 1    |
| New Credit                | 4568  | 0.211 | 0.408     | 0    | 1    |
| Cash Transfer             | 4688  | 0.427 | 0.495     | 0    | 1    |
| Deferral                  | 4657  | 0.332 | 0.471     | 0    | 1    |
| Fiscal                    | 4644  | 0.371 | 0.483     | 0    | 1    |
| Wage subsidy              | 4845  | 0.676 | 0.468     | 0    | 1    |
| Cope with pandemic        | 12,858 | 0.350 | 0.477     | 0    | 1    |
| Layoff                    | 12,552 | 0.277 | 0.447     | 0    | 1    |
| Female-to-male layoff ratio | 814   | 0.764 | 1.845     | 0    | 27   |
| Age                       | 12,858 | 2.821 | 0.687     | 0.693 | 5.313 |
| Size                      | 12,858 | 2.817 | 0.794     | 0.693 | 4.605 |
| Exports                   | 12,858 | 0.270 | 0.444     | 0    | 1    |
| Ownership                 | 12,858 | 0.125 | 0.330     | 0    | 1    |
| Location                  | 12,858 | 0.201 | 0.401     | 0    | 1    |

Source: Authors’ estimates.
the firms resorted to worker layoffs to tide over the crisis due to the pandemic. Table A2 reports the correlation matrix of the main variables.

We also provide the country-wise variation in government support towards SMEs (Table A3 in the appendix). While a large proportion of firms in Poland, Cyprus, Slovenia, Greece and Malta received government support, only a handful of firms received support in Nicaragua, Zambia, Zimbabwe, and Latvia. This clearly points to the substantial heterogeneity across countries in providing government support to SMEs in slowing exits.

4 | EMPIRICAL MODEL

We begin our empirical investigation by estimating the following model.

\[
y_{i,c \text{ post}} = f(\text{Financial Constraint}_{i,\text{pre}}, \text{Firm Controls}_{i,\text{pre}}, \text{Country Dummies}, \text{Provincial Dummies}, \text{Industry Dummies, Survey Month Dummies})
\]  

(1)

where \( y \) represents the different government support measures and employee layoff mentioned above. Financial Constraint is the financial constraints measure. Firm Controls denote vector of firm-level controls. In addition, we include country-fixed effects in our model (Country Dummies). Since several province-specific policies are implemented within a country to cope with the pandemic, we also include Provincial Dummies. Since the survey was conducted from May to December 2020, firms interviewed during different months may have experienced varied effects of lockdown measures. To offset such differentials, we include month dummies in our model (Survey Month Dummies). Finally, we include industry dummies in our model to account for sector-specific effects (Industry Dummies). The subscript pre and post indicate pre-pandemic and post-pandemic, respectively.

An important econometric issue associated with the estimation of Equation (1) is the endogeneity problem caused by reverse causality. On the one hand, the government provides support to financially vulnerable firms during the crisis; on the other hand, lack of government support especially during a crisis period pushes firms to be more financially constrained. To address this issue, we introduce a valid instrumental variable that satisfies two conditions: relevance and exogeneity condition. Relevance condition states that the instrument is to be highly correlated with the endogenous variable, while exogeneity condition means instrument should not have a direct role in our model. We use a valid instrument based on the overdraft facilities available for firms. More specifically, we construct a dummy variable that takes the value equal to one if a firm has an overdraft facility before the pandemic from any financial institution; zero otherwise (Overdraft). Our conjecture is that financial institutions generally provide overdraft facilities for financially sound firms. Therefore, we believe that our instrument is highly correlated with our financial constraint measure and satisfies the relevance condition. Further, government support may not be based on the availability of overdraft facilities since overdraft is a short-term borrowing which is not enough to offset the peril of crisis. Therefore, the instrument is not directly correlated with the dependent variable which satisfies exogeneity condition.

Since our government support measures are binary in nature, we estimate Equation (1) using instrumental variable probit (IV-Probit) estimation technique to study the relationship between government support and financial constraints. A positive and statistically significant coefficient of financial constraint indicates the evidence for channelizing government supports to financially constrained firms, while a negative and significant coefficient questions the effectiveness of government support in aiding financially constrained firms.

Next, to investigate the nexus between coping with the pandemic and government support, we estimate the following model:

\[
\text{Coping with Pandemic}_{i,\text{post}} = f(\text{Govt Support}_{i,\text{post}}, \text{Firm Controls}_{i,\text{pre}}, \text{Country Dummies, Region Dummies}, \text{Industry Dummies, Survey Month Dummies})
\]  

(2)
where *Coping with Pandemic* captures whether or not the firm adjusted its production or services in response to the COVID-19 outbreak. As the dependent variable is a binary variable, we make use of a probit model to investigate the relationship. A positive and significant coefficient for *Govt Support* implies that government support aids the firms in coping with the challenges posed by the pandemic by adjusting their operations.

In the final set of analyses, we investigate the nexus between employee layoff and financial constraints. In this exercise, we estimate Equation (1) using *Layoff* as the dependent variable. Further, we also explore the differences in layoff among male and female workers using *Female-to-male layoff ratio* as the dependent variable. We use an ordinal probit (OProbit) model for the former specification, while in the case of latter we employ OLS method.

5 | RESULTS

5.1 | Financial constraints and government support

During an economic crisis, its adverse effect falls more severely on SMEs, and the condition is no different in the case of the COVID-19-induced shock. One way to minimize the pandemic-induced crisis is by providing fiscal and monetary support to the firms. The role of government support during the crisis is well understood in the economic literature (Kollmann & Roeger, 2012; Kollmann et al., 2013). Even during normal circumstances, SMEs are less likely to obtain finance from formal sources; hence they often rely heavily on internal funds and informal sources. Formal credit sources are reluctant to lend to SMEs, since they perceive them as risky, high transaction costs when compared to large firms. In such circumstances, government assistance is regarded as a means to provide relief to SMEs to improve their cash flow situation and firm performance. Policy makers across countries unveiled special economic packages to assist SMEs. Previous studies observed the importance of government support during the time of economic crisis (Bonomo et al., 2015; Grigolone et al., 2016; Heim et al., 2017). However, it is possible that some of these resources also may be usurped by firms with political connections (Ruziev, 2017). Hence, firms which are in dire need of funds may face difficulty in obtaining finance in the absence of political connections.

Table 2 presents the IV probit estimates on the correlates of government support. Since the magnitude of the coefficients from a probit model cannot be interpreted directly, we present marginal effects. Column 1 uses government support (*Govt Support*) and columns 2 to 6 use various types of support. In Column 1, the marginal effect of *Financial Constraint* on government support yields a positive and significant coefficient indicating that financially constrained (sound) firms are more (less) likely to obtain government support. More specifically, we observe that financially constrained firms have a 57% more chance of obtaining government support compared to unconstrained firms. Further, we observe that small firms, exporting firms, and firms with group affiliates are more likely to receive government support than stand-alone firms.

We observed that support measures are not homogenous and take different forms in different countries (Table A3). Therefore, we extend our baseline by analyzing the impact of various government support measures on financially constrained firms. In other words, we link financial constraints with different government support in terms of new credit, cash transfers, deferral of payments, fiscal measures, wage...
subsidies and other support measures. Column 2–6 presents our estimation results of Equation (1) using various government supports such as New Credit, Cash Transfer, Deferral, Fiscal and Wage Subsidy, as the dependent variable. They produce results similar to those in the first column implying the positive role of these support measures on the firms that are financially constrained. While examining the magnitude of influence, we find that deferral of payments and fiscal exemptions are the most prominent supports for financially constrained firms. Turning towards other control variables, we find that older firms are more likely to obtain different types of support, except cash transfer. The large firms are more likely to get support in terms of new credit while small firms are more likely to get support in terms of cash transfer, deferral of payments, fiscal exemption and wage subsidies. Finally, group affiliates are more likely to get support in terms of new credit, cash transfer, fiscal exemption, and wage subsidies. Overall, our findings suggest that financially constrained firms are more likely to obtain government support. One can also infer that the government supports are in the right direction that targets financially constrained firms, which is crucial for firm survival.7

| Variables                | (1) Govt support | (2) New credit | (3) Cash transfer | (4) Deferral | (5) Fiscal | (6) Wage subsidy |
|--------------------------|------------------|----------------|-------------------|-------------|------------|-----------------|
| Financial constraint     | 0.573***         | 0.552***       | 1.040***          | 1.447***    | 1.461***   | 0.681***        |
| (0.133)                  | (0.0329)         | (0.179)        | (0.126)           | (0.175)     | (0.210)    |
| Age                      | −0.00393         | −0.0743***     | −0.00404          | −0.150***   | −0.0833*** | −0.0921***      |
| (0.00659)                | (0.0108)         | (0.00889)      | (0.0441)          | (0.0184)    | (0.0219)   |
| Size                     | −0.0509***       | 0.0904**       | −0.0834***        | 0.0564      | −0.0245*   | 0.0332**        |
| (0.0144)                 | (0.0433)         | (0.0232)       | (0.0358)          | (0.0146)    | (0.0151)   |
| Export                   | 0.0727**         | 0.0339         | −0.0977           | −0.0570     | −0.0430*** | −0.0131         |
| (0.0338)                 | (0.0378)         | (0.0739)       | (0.0354)          | (0.00883)   | (0.0139)   |
| Subsidiary               | 0.107***         | 0.0450***      | 0.0981**          | −0.0635**   | 0.0768*    | 0.0743*         |
| (0.0206)                 | (0.0107)         | (0.0456)       | (0.0265)          | (0.0421)    | (0.0409)   |
| Location                 | 0.0512           | 0.137***       | 0.00132           | 0.0643***   | −0.00373   | 0.0405          |
| (0.0395)                 | (0.0219)         | (0.0299)       | (0.0125)          | (0.0269)    | (0.0305)   |
| Industry dummies         | Yes              | Yes            | Yes               | Yes         | Yes        | Yes             |
| Provincial dummies       | Yes              | Yes            | Yes               | Yes         | Yes        | Yes             |
| Country dummies          | Yes              | Yes            | Yes               | Yes         | Yes        | Yes             |
| Survey month dummies     | Yes              | Yes            | Yes               | Yes         | Yes        | Yes             |
| Observations             | 12,264           | 4320           | 4438              | 4594        | 4315       | 4814            |

Note: This table provides the nexus between government support and financial constraints. The marginal effects are presented. Control measures are observed in pre-pandemic period. Standard errors in the parenthesis are clustered at country level.

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

7We also carried out an analysis with the interaction of industry and country dummies. The results are qualitatively similar to our main findings (Table A6 in Appendix).
5.2 | Layoff and financial constraints

During the pandemic period, the unemployment rates have increased drastically across countries (see Mayhew & Anand, 2020). We hypothesize financial constraint as one of the reasons behind this phenomenon. To investigate this relationship, our final set of analyses estimates Equation (1) with employee layoff measures.

Column 1 of Table 3 reports our Probit results using Layoff as the dependent variable. We find that the coefficient of financial constraint measure is positive and statistically significant. This finding suggests that financial constraint is one of the main determinants of employee layoff during the pandemic. Furthermore, we explore the differences in layoff among male and female workers in Column 2. Existing studies provide evidence for labour market inequality during the crisis period (Perugini et al., 2019). Surprisingly, we find a negative and significant coefficient for the Financial Constraint in our regression result. In other words, more male employees are laid off than female employees during the pandemic period by constrained firms. One possible explanation for this phenomenon is that: given that there is gender discrimination in wages (WEF, 2021), firms are laying off male workers to cut short the cost.

5.3 | Robustness check and further analysis

We perform a series of robustness tests to check the consistency of our findings in Section 5.1. First, we use an alternative measure of financial constraints (Financial Constraint2). The new measure is a binary variable, which takes the value 1 if (a) the firm is already using external credit and it applied for a new loan, but the application is rejected or (b) it requires a loan but is discouraged to apply due to complex procedures, unfavourable interest rates, and high collateral requirements, and 0 if (a) the firm has applied for a new loan and approved or (b) it did not apply since they do not require a loan (Distinguin et al., 2016). Column 1 of

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**TABLE 3** Layoff and financial constraints

| Variables                  | (1) Layoff (probit) | (2) Female-to-male layoff ratio (OLS) |
|----------------------------|---------------------|--------------------------------------|
| Financial constraint       | 0.235*** (0.0762)   | −0.486*** (0.146)                    |
| Firm-level controls        | Yes                 | Yes                                  |
| Industry dummies           | Yes                 | Yes                                  |
| Provincial dummies         | Yes                 | Yes                                  |
| Country dummies            | Yes                 | Yes                                  |
| Survey month dummies       | Yes                 | Yes                                  |
| Observations               | 12,552              | 814                                  |

Note: This table provides the nexus between employee layoff and financial constraints. The drop in the number of observations in column 2 is due to fall in the number of firms reporting this gender-wise information in the data set. The marginal effects are presented. Control measures are observed in pre-pandemic period. Standard errors in the parenthesis are clustered at country level. *** p < 0.01.
Table 4 presents the results for the new financial constraint measure using IV probit. The results remain unaffected, which yield a positive and significant marginal effect for Financial Constraint on government support. It re-iterates our finding that financially constrained firms are more likely to get government support than unconstrained firms.

Second, we use an alternative estimation technique (Lewbel, 2012) to address the issue of endogeneity. This method is increasingly used by studies when the endogenous variable is binary (Heim et al., 2017). The advantage of this method is it does not require an external instrument. Instead, it constructs instruments using the exogenous variables in the model. In this method, the endogenous variable is regressed on a vector of exogenous variables (X) and extract the residuals (ê). Then, we construct instruments as (X - X̄)ê. Finally, Equation (1) is estimated using (X - X̄)ê as the valid instruments. In our case, we use all the firm-level exogenous variables, country, and provincial dummies to construct the instruments. Column 2 reports the results using Lewbel approach. Again, our results are robust to this specification. We find a positive and significant association between financial constraints and government support.

Further, we extend our analysis by splitting the sample of firms into essential and non-essential good categories. Following Osotimehin and Popov (2020), we classify essential sector as food & beverage, chemicals & chemical products, and postal & telecommunication, while the remaining firms belong to the nonessential category. During the pandemic period, government has dealt differently with both categories of firms. Therefore, we find a positive and significant association between financial constraints and government support.

### Table 4: Robustness check and further analysis—IV Regression

| Variables                  | (1) New financial constraint measure | (2) Lewbel estimation technique | (3) Essential | (4) Non-essential |
|---------------------------|-------------------------------------|---------------------------------|---------------|-------------------|
| Financial constraint2     | 1.396 ***                           |                                 |               |                   |
|                           | (0.325)                             |                                 |               |                   |
| Financial constraint      | 0.0194 **                           | 2.246 **                        | 0.567 ***     |                   |
|                           | (0.00819)                           | (1.106)                         | (0.143)       |                   |
| Firm-level controls       | Yes                                 | Yes                             | Yes           | Yes               |
| Industry dummies          | Yes                                 | Yes                             | Yes           | Yes               |
| Provincial dummies        | Yes                                 | Yes                             | Yes           | Yes               |
| Country dummies           | Yes                                 | Yes                             | Yes           | Yes               |
| Survey month dummies      | Yes                                 | Yes                             | Yes           | Yes               |
| Hansen J statistic (p-value) | −                                 | 0.074                           | ....          | ....              |
| Observations              | 12,264                              | 12,761                          | 1550          | 10,521            |

Note: This table reports robustness check results of the nexus between government support and financial constraints. Government support is used as the dependent variable in all the estimation. Control measures are observed in pre-pandemic period. Standard errors in the parenthesis of column 1, 3, and 4 are clustered at country level, and robust standard error is reported in Lewbel estimation.

***p < 0.01; **p < 0.05.

For the sake of brevity, we do not report the results of the OLS and are available on request from authors.

Survey month and industry dummies are not included to meet the over-identification restriction.

Osotimehin and Popov (2020) included several other industries as essential, however, our study does not include them due to data constraints.
it is possible for our main results to vary among these sectors. We estimate Equation (1) for essential and non-essential good sectors (Table 4, Column 3 and 4). The results remain positive, although the magnitude of the coefficient is higher for essential sector. This result is along the expected lines since the focus of the policy makers was on essential goods and services during time of crisis.

5.4 | Coping with the pandemic and government support

Since COVID-19-led crisis is more devastating than the 2008 financial crisis, several firms may exit or struggle to manage their business activities. Many firms will have to reorient their operations in wake of the uncertainty unleashed by the pandemic. During this time, government support might help the SMEs to adjust their production or service activities. As already stated earlier, we investigate this relationship by estimating Equation (2). We

| TABLE 5 Government support and coping with pandemic |
|--------------------------------------------------|
| Variables | (1) | (2) | (3) | (4) | (5) | (6) |
|-----------|-----|-----|-----|-----|-----|-----|
| Govt support | 0.0983*** | | | | | |
| New credit | | 0.116*** | | | | |
| Cash transfer | | | 0.0202 | | | |
| Deferral | | | | 0.149*** | | |
| Fiscal exempt | | | | | 0.0745*** | |
| Wage subsidy | | | | | | 0.150*** |
| Firm-level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Provincial dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Country dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Survey month dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 12,858 | 4568 | 4688 | 4657 | 4644 | 4845 |

Note: This table provides the nexus between government support and coping with pandemic. The marginal effects are presented. Control measures are observed in pre-pandemic period. Standard errors in the parenthesis are clustered at country level.

***p < 0.01.
estimate six different specifications of Equation (2) with government support and different forms of government support as the main independent variable in these specifications. We present the Probit estimates in Table 5. Column 1 shows that the likelihood of firms tackling the challenges associated with the pandemic rises with government support. More specifically, the estimates show that the probability of a firm coping with the Covid-19 pandemic increases by 10% if it receives government support. This result highlights the significance of government support for firms during the time of economic crisis.

In Column 2–6, we capture the association between coping with the pandemic and different types of support received from the government. The result indicates that coping with the pandemic is positively associated with all types of government support. To evaluate the importance of each individual component, we rely on the marginal effects. We find government support in terms of wage subsidies increase the chance of adjusting firms’ production or services during the pandemic times by 15%, followed by deferral of payment (14.9%), new credit (11.6%), and fiscal exemptions (7.5%).

6 | CONCLUSION

The objectives of this study are three-fold: first, to examine whether government support targeted financially vulnerable firms during the COVID-19 pandemic period. Second, it explores the role of government support in managing or adjusting the production or services of SMEs in response to the pandemic. Finally, the study investigates the relationship between employee layoffs and financial constraints. Using rich firm-level data from 34 countries, we find that government support programmes are more inclusive as they target mostly financially constrained firms. The result is robust to concerns arising from endogeneity of financial constraints and also to alternative measures of financial constraints. We find the same effect on both essential and non-essential good sectors, however, the magnitude of the effect is higher in the essential good sector. reveal that financially constrained firms are more likely to sack workers; and there is evidence that male employees are losing more jobs than female employees. In the final set of analyses, we find this support is significant for SMEs to cope with the pandemic.

ACKNOWLEDGEMENTS

We are grateful to the editor and two anonymous referees for excellent comments that improved the paper. We have benefited from the suggestions of workshop participants ‘Public Policies for the Post-Pandemic Era’ held at IIT Tirupati and Sarthak Basu for editorial assistance.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data are available on request from the authors.

ETHICS STATEMENT

The authors have followed the required ethical standards.

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Bakhtiari, S., Breunig, R., Magnani, L., & Zhang, J. (2020). Financial constraints and small and medium enterprises: A Review, IZA DP No. 12936.
Since the onset of the COVID-19 pandemic, several SMEs have become financially constrained. During this period, governments across the world have implemented policies and relief programs to support such firms. In this study, we investigate the relationship between government support and financial constraints. Using firm-level data from 34 countries, our results suggest that government support programmes targeted mostly financially constrained firms. Further, we observe that firms which received support are more likely to undertake necessary adjustments in their business activities. We also study the relationship between financial constraints and employee lay off. We find that constrained firms are more likely to lay off workers, and are witnessed more among male employees.

How to cite this article: Chundakkadan, R., Natarajan, R. R., & Sasidharan, S. (2022). Small firms amidst COVID-19: Financial constraints and role of government support. Economic Notes, e12206. https://doi.org/10.1111/ecno.12206
FIGURE A1  Firm closure by country (in percent). Source: Authors’ construction.
FIGURE A2  Financially constrained and unconstrained firms by country (in percent). Decreased, Same and Increased indicate that cashflow of the firms decreased, remain same, and increased, respectively. Source: Authors’ construction.
| Country        | Govt supports and financial constraints | New credit and financial constraints | Cash transfer and financial constraints | Deferral and financial constraints | Fiscal measures and financial constraints | Wage subsidies and financial constraints | Coping with pandemic and government support | Permanent worker layoff and financial constraints | Female to male layoff ratio and financial constraints |
|---------------|------------------------------------------|--------------------------------------|-----------------------------------------|-----------------------------------|------------------------------------------|------------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Albania       | 246                                      | 107                                  | 108                                     | 105                               | 105                                      | 108                                      | 253                                           | 250                                             | 12                                              |
| Belarus       | 326                                      | 0                                    | 0                                       | 7                                 | 10                                       | 4                                        | 373                                           | 368                                             | 5                                               |
| Bulgaria      | 730                                      | 27                                   | 207                                     | 191                               | 92                                       | 205                                      | 754                                           | 734                                             | 45                                              |
| Chad          | 86                                       | 6                                    | 0                                       | 0                                 | 0                                        | 0                                        | 93                                            | 90                                              | 19                                              |
| Croatia       | 239                                      | 152                                  | 152                                     | 152                               | 152                                      | 152                                      | 239                                           | 239                                             | 9                                               |
| Cyprus        | 286                                      | 159                                  | 161                                     | 170                               | 170                                      | 208                                      | 292                                           | 286                                             | 1                                               |
| Czech Republic| 300                                      | 183                                  | 183                                     | 183                               | 183                                      | 183                                      | 303                                           | 300                                             | 17                                              |
| El Salvador   | 278                                      | 31                                   | 30                                      | 31                                 | 31                                       | 24                                       | 301                                           | 293                                             | 14                                              |
| Estonia       | 218                                      | 54                                   | 0                                       | 92                                 | 92                                       | 92                                       | 234                                           | 223                                             | 10                                              |
| Georgia       | 808                                      | 297                                  | 304                                     | 327                               | 301                                      | 299                                      | 799                                           | 811                                             | 27                                              |
| Greece        | 805                                      | 514                                  | 523                                     | 531                               | 541                                      | 554                                      | 832                                           | 827                                             | 3                                               |
| Guatemala     | 140                                      | 43                                   | 43                                      | 43                                 | 43                                       | 43                                       | 144                                           | 140                                             | 33                                              |
| Guinea        | 92                                       | 0                                    | 0                                       | 0                                 | 3                                        | 0                                        | 100                                           | 90                                              | 11                                              |
| Honduras      | 133                                      | 24                                   | 24                                      | 24                                 | 24                                       | 24                                       | 139                                           | 139                                             | 25                                              |
| Hungary       | 496                                      | 99                                   | 105                                     | 54                                | 52                                       | 113                                      | 505                                           | 498                                             | 47                                              |
| Italy         | 616                                      | 344                                  | 355                                     | 353                               | 336                                      | 362                                      | 639                                           | 621                                             | 6                                               |
| Jordan        | 360                                      | 84                                   | 0                                       | 76                                 | 85                                       | 89                                       | 334                                           | 399                                             | 21                                              |
| Latvia        | 156                                      | 0                                    | 0                                       | 0                                 | 2                                        | 2                                        | 166                                           | 148                                             | 11                                              |
| Lithuania     | 162                                      | 104                                  | 100                                     | 103                               | 0                                        | 103                                      | 163                                           | 152                                             | 10                                              |
| Country       | Govt supports and financial constraints | New credit and financial constraints | Cash transfer and financial constraints | Deferral and financial constraints | Fiscal measures and financial constraints | Wage subsidies and financial constraints | Coping with pandemic and government support | Permanent worker layoff and financial constraints | Female to male layoff ratio and financial constraints |
|---------------|----------------------------------------|---------------------------------------|-----------------------------------------|----------------------------------|----------------------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|-------------------------------------------------|
| Malta         | 165                                    | 115                                   | 115                                     | 115                              | 115                                    | 115                                    | 168                                           | 166                                             | 13                                              |
| Moldova       | 426                                    | 18                                    | 19                                      | 18                               | 20                                     | 19                                     | 431                                           | 429                                             | 2                                               |
| Mongolia      | 241                                    | 86                                    | 86                                      | 86                               | 85                                     | 84                                     | 241                                           | 241                                             | 37                                              |
| Morocco       | 467                                    | 124                                   | 130                                     | 129                              | 131                                    | 125                                    | 519                                           | 492                                             | 41                                              |
| Nicaragua     | 0                                      | 0                                     | 0                                       | 0                                | 0                                      | 0                                      | 163                                           | 161                                             | 20                                              |
| Niger         | 48                                     | 0                                     | 0                                       | 0                                | 4                                      | 4                                      | 56                                            | 46                                              | 3                                               |
| North Macedonia | 211                                 | 90                                    | 89                                      | 90                               | 0                                      | 90                                    | 221                                           | 186                                             | 13                                              |
| Poland        | 1427                                   | 888                                   | 973                                     | 905                              | 932                                    | 970                                    | 1488                                          | 1366                                            | 46                                              |
| Portugal      | 566                                    | 178                                   | 178                                     | 179                              | 179                                    | 179                                    | 589                                           | 575                                             | 33                                              |
| Russia        | 743                                    | 157                                   | 128                                     | 190                              | 190                                    | 184                                    | 764                                           | 761                                             | 66                                              |
| Slovak Republic | 247                                 | 123                                   | 124                                     | 124                              | 124                                    | 124                                    | 250                                           | 250                                             | 18                                              |
| Slovenia      | 380                                    | 211                                   | 214                                     | 220                              | 221                                    | 271                                    | 393                                           | 401                                             | 26                                              |
| Togo          | 42                                     | 4                                     | 0                                       | 4                                | 4                                      | 0                                      | 41                                            | 40                                              | 1                                               |
| Zambia        | 190                                    | 0                                     | 7                                       | 7                                | 7                                      | 0                                      | 435                                           | 410                                             | 107                                             |
| Zimbabwe      | 430                                    | 7                                     | 7                                       | 7                                | 5                                      | 0                                      | 436                                           | 432                                             | 62                                              |
### TABLE A2  Correlation matrix

|                      | Govt support | Financial constraints | Cope with pandemic | Layoff | Age | Size | Export | Ownership | Location |
|----------------------|--------------|-----------------------|--------------------|--------|-----|------|--------|-----------|----------|
| Govt support         | 1            |                       |                    |        |     |      |        |           |          |
| Financial constraints| -0.0219      | 1                     |                    |        |     |      |        |           |          |
| Cope with pandemic   | 0.0421       | 0.0334                | 1                  |        |     |      |        |           |          |
| Layoff               | 0.081        | -0.0545               | -0.0321            | 1      |     |      |        |           |          |
| Age                  | 0.0562       | -0.0381               | -0.0605            | -0.0184| 1   |      |        |           |          |
| Size                 | 0.0227       | -0.0345               | 0.033              | 0.0022 | 0.2334| 1    |        |           |          |
| Export               | 0.0754       | -0.0503               | 0.0089             | -0.0049| 0.1373| 0.3422| 1      |           |          |
| Ownership            | -0.0176      | 0.0088                | 0.0507             | -0.0389| 0.0855| 0.174 | 0.0484 | 1         |          |
| Location             | -0.0887      | 0.0387                | 0.0615             | 0.0779 | -0.0313| 0.0001| -0.0742| 0.0579    | 1        |

Source: Authors’ estimates.

### TABLE A3  Government support during the pandemic period (in percent)

| Country     | Govt support | New credit | Cash transfer | Deferral | Fiscal measures | Wage subsidies |
|-------------|--------------|------------|---------------|----------|----------------|----------------|
|             | Not received | Received   |               |          |                |                |
| Albania     | 56.13        | 43.87      | 20.91         | 9.01     | 20.37          | 8.33           | 86.49         |
| Belarus     | 95.71        | 4.29       | 0             | 0        | 62.5           | 25             | 12.5          |
| Bulgaria    | 71.75        | 28.25      | 1.57          | 84.29    | 6.19           | 6.77           | 66.35         |
| Chad        | 92.47        | 7.53       | 57.14         | 0        | 0              | 100            | 0             |
| Croatia     | 36.4         | 63.6       | 7.24          | 14.47    | 13.82          | 28.95          | 88.82         |
| Cyprus      | 25.26        | 74.74      | 14.81         | 36.36    | 35.26          | 34.88          | 94.37         |
| Czech Republic | 38.94  | 61.06      | 4.86          | 64.32    | 10.81          | 5.41           | 31.89         |
| El Salvador | 87.38        | 12.62      | 68.42         | 59.46    | 42.11          | 37.84          | 37.84         |
| Estonia     | 55.98        | 44.02      | 1.94          | 0        | 17.48          | 11.65          | 95.15         |
| Georgia     | 56.05        | 43.95      | 6.44          | 13.91    | 46.77          | 48.99          | 42.86         |
| Greece      | 28.06        | 71.94      | 32.39         | 45.94    | 56.67          | 72.4           | 72.6          |
| Guatemala   | 69.44        | 30.56      | 15.91         | 15.91    | 31.82          | 11.36          | 63.64         |
| Guinea      | 97           | 3          | 0             | 0        | 0              | 66.67          | 0             |
| Honduras    | 79.86        | 20.14      | 21.43         | 21.43    | 35.71          | 39.29          | 17.86         |
| Hungary     | 72.67        | 27.33      | 7.25          | 7.25     | 4.35           | 2.17           | 92.75         |
| Italy       | 37.4         | 62.6       | 29.89         | 63.59    | 42.9           | 26.15          | 56.68         |
| Jordan      | 71.26        | 28.74      | 12.64         | 0        | 9.64           | 10.23          | 71.43         |
| Country              | Govt support | New credit | Cash transfer | Deferral | Fiscal measures | Wage subsidies |
|---------------------|--------------|------------|---------------|----------|----------------|----------------|
|                     | Not received | Received   |               |          |                |                |
| Latvia              | 97.59        | 2.41       | 25            | 0        | 25             | 75             | 66.67          |
| Lithuania           | 35.58        | 64.42      | 9.52          | 70       | 13.59          | 0              | 84.47          |
| Malta               | 29.76        | 70.24      | 6.78          | 15.25    | 13.56          | 17.8           | 90.68          |
| Moldova             | 94.66        | 5.34       | 5.56          | 15.79    | 11.11          | 40             | 26.32          |
| Mongolia            | 63.9         | 36.1       | 26.44         | 31.03    | 25.29          | 54.65          | 51.76          |
| Morocco             | 70.91        | 29.09      | 22.67         | 40.67    | 46.98          | 60.26          | 84.77          |
| Nicaragua           | 100          | 0          | 0             | 0        | 0              | 0              | 0              |
| Niger               | 87.5         | 12.5       | 14.29         | 14.29    | 0              | 50             | 16.67          |
| North Macedonia     | 57.92        | 42.08      | 32.26         | 15.22    | 22.58          | 0              | 93.55          |
| Poland              | 22.67        | 77.33      | 33.73         | 72.85    | 42.42          | 55.21          | 65.27          |
| Portugal            | 68.93        | 31.07      | 26.78         | 43.72    | 21.86          | 18.58          | 50.27          |
| Russia              | 73.95        | 26.05      | 27.75         | 10.53    | 60.51          | 66.67          | 30.16          |
| Slovak Republic     | 49.2         | 50.8       | 12.6          | 18.11    | 14.17          | 12.6           | 85.04          |
| Slovenia            | 26.72        | 73.28      | 5.29          | 3.98     | 10.78          | 16.74          | 94.33          |
| Togo                | 87.8         | 12.2       | 20            | 20       | 60             | 40             | 0              |
| Zambia              | 98.39        | 1.61       | 0             | 28.57    | 28.57          | 14.29          | 0              |
| Zimbabwe            | 97.94        | 2.06       | 77.78         | 66.67    | 55.56          | 33.33          | 0              |

Note: This table provides the percentage of firms that received government supports.
| Variables         | (1)     | (2)     | (3)     | (4)     | (5)     | (6)     |
|-------------------|---------|---------|---------|---------|---------|---------|
|                   | Govt support | New credit | Cash transfer | Deferral | Fiscal | Wage subsidy |
| Financial constraint | -0.0330 | 0.0824*** | -0.0290** | 0.0395*** | 0.0266 | 0.0906** |
|                   | (0.0252) | (0.00868) | (0.0115) | (0.0137) | (0.0192) | (0.0394) |
| Age               | -0.0159* | -0.0638*** | -0.0152** | -0.122*** | -0.0684*** | -0.0738*** |
|                   | (0.00916) | (0.0140) | (0.00708) | (0.0253) | (0.0143) | (0.0142) |
| Size              | -0.0456*** | 0.0846** | -0.0560* | 0.0506** | -0.00867 | 0.0291** |
|                   | (0.0132) | (0.0371) | (0.0277) | (0.0247) | (0.0107) | (0.0123) |
| Export            | 0.0893*** | 0.0484 | -0.0885 | -0.0271 | -0.0155*** | 0.00726 |
|                   | (0.0316) | (0.0297) | (0.0683) | (0.0319) | (0.00480) | (0.0148) |
| Subsidiary        | 0.115*** | 0.0155 | 0.0841* | -0.0577*** | 0.0272 | 0.0742** |
|                   | (0.0222) | (0.0273) | (0.0447) | (0.0177) | (0.0310) | (0.0344) |
| Location          | 0.0691** | 0.126*** | 0.0348* | 0.103*** | 0.0565*** | 0.0417 |
|                   | (0.0320) | (0.0174) | (0.0173) | (0.00554) | (0.0192) | (0.0348) |
| Constant          | 0.609*** | -0.205*** | 0.177 | 0.172*** | 0.331*** | 0.712*** |
|                   | (0.0460) | (0.0416) | (0.168) | (0.0307) | (0.0896) | (0.0614) |
| Industry dummies  | Yes     | Yes     | Yes     | Yes     | Yes     | Yes     |
| Region dummies    | Yes     | Yes     | Yes     | Yes     | Yes     | Yes     |
| Country dummies   | Yes     | Yes     | Yes     | Yes     | Yes     | Yes     |
| Survey month dummies | Yes   | Yes     | Yes     | Yes     | Yes     | Yes     |
| Observations      | 12,761  | 4653    | 4682    | 4738    | 4729    | 4938    |
| R-squared         | 0.205   | 0.216   | 0.260   | 0.259   | 0.245   | 0.248   |
| Variables     | Govt support Financial constraint | New credit Financial constraint | Cash transfer Financial constraint | Deferral Financial constraint | Fiscal Financial constraint | Wage subsidy Financial constraint |
|---------------|----------------------------------|---------------------------------|-----------------------------------|-------------------------------|----------------------------|----------------------------------|
| Age           | -0.00454 (0.0159)                | -0.0188 (0.0192)                | -0.0152 (0.0244)                 | -0.0162 (0.0229)             | -0.00159 (0.0229)           | -0.00744 (0.0253)               |
| Size          | 0.000619 (0.00988)               | 0.0198** (0.00847)              | 0.0412*** (0.0138)               | 0.0292** (0.0110)            | 0.0308** (0.0143)           | 0.0251*** (0.00889)             |
| Overdraft     | 0.0809*** (0.0136)               | 0.0634*** (0.0116)              | 0.0767*** (0.0121)               | 0.0618*** (0.00996)          | 0.0681*** (0.0132)          | 0.0739*** (0.0133)              |
| Export        | 0.00995 (0.00921)                | 0.00804 (0.0114)                | 0.0115 (0.0139)                  | 0.0270*** (0.00698)          | 0.00777 (0.0147)           | 0.0382*** (0.00905)             |
| Subsidiary    | -0.0186 (0.0285)                 | -0.0582 (0.0501)                | -0.0693 (0.0497)                 | -0.102 (0.0638)              | -0.0617 (0.0526)           | -0.0528 (0.0389)               |
| Location      | 0.0613*** (0.0146)               | 0.112*** (0.0103)               | 0.110*** (0.0124)                | 0.100*** (0.0107)            | 0.0979*** (0.0110)          | 0.0964*** (0.00962)             |
| Constant      | 0.766*** (0.0829)                | 0.774*** (0.0835)               | 0.734*** (0.102)                 | 0.760*** (0.0903)            | 0.666*** (0.111)            | 0.709*** (0.0949)               |
| Industry dummies | Yes                         | Yes                             | Yes                               | Yes                           | Yes                       | Yes                             |
| Region dummies | Yes                         | Yes                             | Yes                               | Yes                           | Yes                       | Yes                             |
| Country dummies | Yes                         | Yes                             | Yes                               | Yes                           | Yes                       | Yes                             |
| Survey month dummies | Yes                         | Yes                             | Yes                               | Yes                           | Yes                       | Yes                             |
| Observations  | 12,501                        | 4,553                           | 4,589                             | 4,638                         | 4,629                     | 4,831                           |
| R-squared     | 0.245                         | 0.284                           | 0.275                             | 0.273                         | 0.292                     | 0.260                           |

Table A5: First stage regression result (of Table 2)
| Variables                              | (1) | (2) | (3) | (4) | (5) | (6) |
|----------------------------------------|-----|-----|-----|-----|-----|-----|
| Financial constraint                   | 0.413*** | 0.405*** | 0.858** | 0.896*** | 1.028*** | 0.443** |
|                                        | (0.124) | (0.0396) | (0.106) | (0.096) | (0.128) | (0.200) |
| Firm-level variables                   | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry dummies                       | Yes | Yes | Yes | Yes | Yes | Yes |
| Region dummies                         | Yes | Yes | Yes | Yes | Yes | Yes |
| Country dummies                        | Yes | Yes | Yes | Yes | Yes | Yes |
| Survey month dummies                   | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry dummies × Country dummies     | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations                           | 11,077 | 3552 | 3767 | 3941 | 3758 | 4119 |