

Did Targeting Financial Constraints During COVID-19 Make Sense?*

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Abstract

Following the experience of the 2008-2009 financial crisis, governments around the world extended large-scale liquidity and credit programs at the onset of the COVID-19 crisis with the aim of hindering waves of defaults and mass layoffs (aka, *bazooka lending*). But does focusing on firms' credit constraints make sense in crises that do not originate from a shock to the financial-sector? In a new large-scale survey of beliefs and plans of German firms during the COVID-19 crisis combined with administrative data, firms identify pessimistic and uncertain beliefs about future demand, rather than current or future credit constraints, as the main impediment for their business. Demand-driven uncertainty is also what limits firms' demand for credit. Firms predominantly rely on retained earnings to finance their operations. Those who access external financing do so largely through regular commercial loans rather than loans guaranteed by government programs. Firms that apply for government-guaranteed loans are more likely to display *zombie* features.

JEL classification: E44, E62, G32, G38, H32

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I Introduction

The COVID-19 pandemic was a major shock to economic and social activities around the globe, resulting in severe restrictions to public life and fomenting recessionary forces that froze economic activity. Perhaps inspired by the lessons of the 2008-2009 Financial Crisis, governments (and central banks) around the world attempted to alleviate firms' liquidity and financial constraints by implementing, among others, loan guarantee programs aimed at ensuring firms' access to external finance. Policy makers worried about impairments to the financial system that, through a stark contraction of the loan supply, could have percolated to the real economy.

At the same time, several arguments suggest that focusing on firms' access to external finance might have not been as important as policy makers thought. First, stringent capital and liquidity requirements for financial institutions were enforced after the 2008-2009 Financial Crisis, and hence the financial soundness of those institutions at the onset of the COVID-19 pandemic was substantially higher than before the collapse of Lehman Brothers. Second, the COVID-19-induced crisis did not originate from a shock to the financial-sector, but rather from the freeze of consumers' demand due to unprecedented restricting to social activities worldwide ("lockdown" measures). For these reasons, opponents of subsidized loans programs argued such programs would waste tax-payers' money and merely crowd out private sector loans, which were available throughout the crisis. In the worst case, such programs might have financed *zombie firms* and interfered with a healthy turnover of business activities.

Whether government-subsidized loans can be an important policy measure to sustain the real economy during non-financially-driven crises like the COVID-19 crisis or whether they might in fact hurt long-run economic growth by keeping unprofitable firms alive is an open empirical question.

To tackle this question, we combine a novel and unique survey of a representative sample of more than 10,000 German firms with administrative data, both collected by the German central bank (Bundesbank): the *Bundesbank Survey of Firms*. The first wave of this new survey was in the field in June 2020 to elicit the perceived and expected

problems firms faced during the COVID-19 crisis, their demand for external financing and their past sources of financing, as well as their expectations both qualitatively and quantitatively. By asking firms to compare a set of potential needs and demands, the survey provides a unique overview of what firms perceived as relevant current and expected impediments to their operations. Administrative data from the *Janis* financial data base and internal rating data also allow us to assess the characteristics of firms that participated in government-sponsored loan programs.

The data reveal a set of insights into firms' own assessment of the nature of the negative shock their businesses faced during the first wave of the COVID-19 pandemic. First, consistent with the fact that the crisis did not initiate within the financial sector, the vast majority of firms thought that current or future access to external finance was not an important concern for their business. More than 70% of firms thought that access to finance at market conditions was completely unchanged relative to the period before the pandemic. Of the remaining firms, equal shares thought that access to finance had worsened or had improved. Moreover, the vast majority of firms did not expect their liquidity or credit conditions to worsen going forward, either because they did not need access to external financing (even in case lockdown restrictions were prolonged for months), or because they thought that commercial loans at market conditions would have been easily accessible. Looking ahead, over the six-month period subsequent to the survey, only 4.8% of firms thought that access to finance would be a serious threat to their business, whereas more than 60% thought that access to finance would be no problem whatsoever.

To the contrary, firms thought that depressed consumer sentiment, lack of consumers' demand, as well as disrupted supply chains were the most concerning problems their businesses faced. Moreover, about 70% of firms expected lack of consumers' demand as an important problem going forward.

These qualitative perceptions and beliefs are explained by the fact that firms had several sources of financing available other than government-guaranteed loan programs: between March and May 2020—i.e., during the period in which the German government imposed lockdown restrictions throughout Germany—about 60% of firms financed their

operations through retained earnings and did not have any need to access external liquidity. The same share of firms argued that they would have enough liquidity even in case the lockdown restrictions were prolonged until the end of the summer 2020, which, as we now know, did not happen. When considering firms that had external financing demand, about 50% resorted to commercial bank loans and overdraft facilities granted at market conditions and only 20% thought that government-subsidized loans could have helped their operations, which places the perceived relevance of government-subsidized loans even below trade credit.

Even if not important in terms of extensive margin—the share of firms that applied—subsidized loans might have had positive effects on the real economy in terms of intensive margin, that is, they might have helped a small share of highly profitable firms. For instance, it is perceivable that firms with positive external finance demand had low retained earnings at the onset of COVID-19 because they had heavily invested in profitable investment projects before the onset of the pandemic.

Contrary to this possibility, the data reveal that firms that obtained subsidized loans were more likely to display characteristics that previous research has associated with *zombie firms*. At the end of the previous fiscal year, that is, a few months before the COVID-19 shock hit, they had four-times lower profitability, lower interest-rate coverage ratios, and higher leverage ratios relative to other firms. Even when restricting the comparison to firms that accessed commercial loans and hence had a financing need, firms that accessed government-subsidized loans had substantially lower pre-COVID-19 performance. As an alternative measure to evaluate the healthiness of firms that accessed government-sponsored loans, we access internal Bundesbank rating data and find that firms that accessed these loans had a rating that was on average 2.5 notches below the rating of other firms before the COVID-19 shock hit.

Moreover, the likelihood to access government loans was most prevalent in the accommodation and food services industry, relative to the share of firms in this industry that would normally access loans. This industry was undeniably affected by the lockdown measures, but even within this industry firms that accessed government-subsidized loans were among the least profitable or low-growth firms, and hence would have been unlikely

drivers of economic and job growth had the pandemic not started.

One might worry that the low share of firms accessing subsidized loans might have reflected a cumbersome design and implementation of the program that discouraged borrowers in need. Counter to this interpretation, we find that 85% of firms that did not apply to subsidized loans did not do so because they did not have any demand for this type of credit, even though they were aware of the program and knew how to apply. Less than 10% of our respondents did not apply because they thought they would not obtain the loan (discouraged borrowers), and about 10% had a credit need but thought that the loan conditions did not fit their needs.

One major motivation for subsidized loan programs during COVID-19 was to shield the real economy and hinder mass layoffs. Yet, firms had direct access to alternative and more direct programs and subsidies to reduce their wage bill and preserve their operations. We find that work from home was the most important measure of labor adjustment with almost 22% of German employees working from home during the pandemic. Moreover, *Kurzarbeit*, a program that allows firms to reduce workers' hours while employees receive payments from the German social security system, was almost equally important. Wage cuts and layoffs were only applied to about 8% and 2.5% of the employees and firms in our sample, respectively, which suggests that these alternative government programs, which did not target liquidity or credit constraints and were adopted in similar forms in virtually all developed economies hit by COVID-19, were successful in shielding the labor market from the COVID-19 shock.

Our results are based on German firms and the German economy, which contrary to the US economy or other market-based financial economies is an ideal laboratory to study policies aiming at subsidizing bank loans, because German firms are heavily bank dependent and obtain most financing through bank loans rather than through issuing bonds. Because the vast majority of German firms across the size and industry distribution access bank loans regularly, the positive effects of a government-subsidized loan program, if any, should be higher in Germany than in less bank-dependent economies.

Taken together, our descriptive results suggest that government-subsidized loan programs were not a policy measure that firms deemed important to shield the real

economy from the COVID-19 pandemic, whose nature and genesis were completely different from those of the 2008-2009 Financial Crisis, when similar policy measures were implemented. In fact, this policy might have benefited unprofitable firms that were already facing financial distress before the COVID-19 crisis hit possibly putting downward pressure on inflation and innovation (Acharya et al. (2020); Schmidt et al. (2019)).

A. Related Literature

Our paper relates to a growing literature studying the effects of COVID-19 on the economy. Coibion et al. (2020c,a) study the effect of the pandemic on the labor market and subjective expectations of households and find large declines in labor force participation and a deterioration of macroeconomic expectations, which they largely attribute to the imposition of lockdowns rather than the pandemic. Fetzner et al. (2020) survey households and find a widespread decline of income and retirement wealth. Hanspal et al. (2020) show the prevalence of economic anxiety following the arrival of COVID-19 and a decrease in stock-market investments.

Moreover, we contribute to the literature studying the effects of government-guaranteed loans on firms' performance and the macroeconomy (Lelarge et al. (2010); D'Acunto et al. (2019)). Programs similar to the one we study were implemented across several countries, including the United States and Italy (Gourinchas et al. (2020); Core and DeMarco (2020)). Similar programs to small and medium-sized firms were implemented during the Great Recession. For instance, Barrot et al. (2019) find that workers have significantly higher probabilities of being employed and have higher earnings up to seven years after their employer received a guaranteed loan with larger effects for high income, male, and younger workers.

In terms of other government-sponsored programs during the the COVID-19 pandemic, Granja et al. (2020) study the paycheck protection program in the US and find it mainly supported firms less hard hit by the pandemic and was barely effective in stimulating employment and consumer demand because firms used the funds to mainly increase savings. Coibion et al. (2020b) study how US consumers used the stimulus checks and similarly find that many households increased their savings and reduced outstanding

debt balances with the average marginal propensity to consume being less than 40%.

II Data

We access three data sets via restricted on-site access at the Research Data and Service Center (RDSC) of the German Central Bank (Bundesbank). The main source is a new survey of German firms' perceptions, expectations, and plans, in terms of both operational and financial plans, whose first wave was run during the first wave of the COVID-19 pandemic, the *Bundesbank Survey of Firms (BOP-F)*. Because to the best of our knowledge this is the first paper that analyses the *BOP-F*, we describe its structure in detail below and we append the original survey questions translated to English to the online appendix.

We could link the survey responses of firms that consented to do so to administrative information on financial, accounting, and operational characteristics before the COVID-19 pandemic using data from our second and third sources, the Janis database at Bundesbank as well as the internal rating data for firms in Germany.

A. Bundesbank Survey of Firms

The *BOP-F* is a data set based on an extensive and novel survey of German firms run by the Bundesbank.

The *BOP-F* includes individual firm-level information on firms' perceptions, expectations, and plans during the COVID-19 crisis as well as information on firm characteristics. The Bundesbank launched the first wave of the survey in June 2020 with the aim of being able to analyze the development and behavior of a representative set of German firms during the COVID-19 crisis and especially during the most far-reaching lockdown measures that the German government, similar to many other governments worldwide, had implemented from March to early May 2020.¹

The sample population in the *BOP-F* comprises all firms incorporated in Germany

¹A second wave of the survey is being conducted as of September 2020 and further waves are planned at regular intervals going forward.

with at least one employee subject to social insurance contributions or sales of at least Eur 17.500 at the end of fiscal year 2019. The survey sample contains in total 80,170 firms and is biased towards larger firms. This bias is driven by the choice of including the full universe of large firms in the sample, where large firms are defined as those that fall into the top 2 (out of 5) classes with the highest value of sales or the top 2 (out of 5) classes with the highest employment numbers as of the end of 2019.² Large firms account for about 36% of the sample but only about 3.1% of all firms in Germany. The remaining 64% of the sample includes firms that fall into sales and employment classes 1-3 and are stratified proportionally according to the size of the firm (i.e. sales and employment), the industry at the 2-digit NAICS level, and the German state (*Bundesland*).

The sample firms received a letter via mail that contained a unique access code and link through which they could access the online questionnaire.³ The selected firms had a total of approximately six weeks to participate in the survey, with a reminder being sent out after three weeks. Overall, the response rate was about 13.4%, resulting in 10,711 observations.

The first survey wave includes questions on three main topics: the general economic situation and expectations of the firms, their financing situation, and firm characteristics.

A total of 6 questions covered firms' perceptions and expectations. Firms were asked how various parameters such as sales, employment, access to intermediate goods, short-term liquid funds, and the need for (external) financing had developed in the month before responding to the survey and how firms expected these variables to develop over the following 6 months. Firms were also asked to assess the extent to which several potential economic forces might cause issues to their business over the following 6 months. For instance, a lack of consumer demand, high competitive pressure, lack of access to finance, and access to intermediate goods and products. Firms also provided detailed information

²Employment classes follow standard classifications and contain 1 to 10 employees (class 1), 11 to 50 employees (class 2), 51 to 200 employees (class 3), 201 to 1000 employees (class 4) and more than 1000 employees. Sales categories are staggered as follows: up to EUR 1m (class 1), between EUR 1m and EUR 7m (class 2), between EUR 7m and EUR 34 m (class 3), between EUR 34 m and EUR 229 m (class 4) and more than EUR 229 m (class 5).

³In future waves, firms will be contacted both by mail (especially new firms) and by email (for firms that have agreed to participate in a panel and have specified their email address in one of the previous waves).

about the development of their production, any changes in employment, and any changes in supply chains and access to intermediate goods as a result of the COVID-19 pandemic.

With a total of 8 questions, the section on firms' financing situation constituted the main part of the survey. In this section, firms first had to assess how important they considered several sources of financing (such as retained earnings, bank loans, government-subsidized loans, and trade credit) to guarantee that the firms' operations would not be affected by COVID-19 in the months between March and early May 2020. Moreover, the survey asked whether the firm had negotiated a bank loan during this period, whether this was due to or independently of the COVID-19 crisis, and the result of the negotiations. The same questions were then asked about government-subsidized loans. Government-subsidized loans included both loans that were granted via the nationwide aid program at the "Reconstruction loan corporation" (in German: *Kreditanstalt für Wiederaufbau*, KfW) as well as lending programs each federal state processed through state-level development banks. Finally, firms were asked to assess whether the scope of government support measures and existing sources of financing were likely to be sufficient to satisfy the firm's liquidity demand during the COVID-19 crisis, both at the time of the survey and over the following months.

In the section on firm characteristics, firms provided information about their sales and employment as well as about the industry and the German state in which the firm operated. Respondents provided details on the area of activity in the firm and their operations.

B. Individual financial statements of non-financial firms (JANIS) and Rating Data

The JANIS data contain balance sheet information of German non-financial firms over the period 1997–2019. They constitute an unbalanced panel of approximately 90,000 firms per year. Becker et al. (2019) discuss this data source in detail.

The Bundesbank collects these data for various purposes such as credit checks, which companies can use to validate collateral against commercial banks. The data include an

extensive set of firm characteristics including (but not limited to) balance of payments information, which allows us to compute various profitability measures and identify firms with zombie features. Using a unique identifier, we match the JANIS data with the Bundesbank Survey of Firms for a subset of 4,077 firms. Note that Janis is updated annually, with the data generally showing a reporting delay of two years. Hence, we do not have balance-sheet information for all firms in the BOF-P as of end of December 2019.⁴ Table 1 contains descriptive statistics of the Janis data for firms in the matched sample.

Moreover, we can observe Bundesbank-internal data on credit ratings for firms. They compile these data to assess the credit quality of debtors of non-marketable assets, such as bank loans. This assessment is part of the regular monetary policy operations in the Euro-system in which banks can submit loans as collateral for refinancing operations at the Bundesbank. To do so, the debtor firms has to be *eligible* which is determined via the internal rating data. More details can be found here: <https://www.bundesbank.de/resource/blob/625838/1012638a08ec876680f91214de1bb6cb/mL/bonitaetsanalyse-kurzuebersicht-data.pdf>.

C. Time Period

The period to which the BOP-F refers was characterized first by a rapid increase in the number of COVID-19 infection cases in Germany, which was followed by severe lockdown measures that started in mid/end March 2020 and lasted until early May 2020. The lockdown measures included restrictions that were commonly taken in many countries in Europe and the Americas, including the temporary stop to the activities of firms in sectors at direct contact with end consumers (e.g., retail trade, hospitality, restaurants and coffee shops, schools, etc.), as well as extensive restrictions to physical interactions among individuals (social distancing) and an almost complete ban on any meetings and events that included gatherings of as few as 5 individuals, with the exception for members of the same households. With a decline in the number of new infections, the lockdown

⁴The median difference between the timing of the survey information (2020) and the firm characteristics from Janis is two years.

measures were gradually relaxed starting at the end of April 2020 throughout May 2020. Figure 1 reports the evolution of cases and the implemented policy measures.

III Overview of the COVID-19 Loan-Subsidy Program in Germany

In order to mitigate the economic consequences of the COVID-19 crisis, the German government launched a number of economic aid programs targeting firms, self-employed workers, and freelancers. Figure 1 contains a timeline of new daily confirmed COVID-19 cases, their seven-day average as well as an overview of the most important policy measures.

The most important program based on government reports and on the perception by media and institutions was the “KfW Special Program 2020” (in German, “KfW Sonderprogramm 2020”).⁵ This program shares similar features with the Small Business Administration (SBA) 7(a)-loans program in the United States (D’Acunto et al. (2019)), even though it is not limited to small and/or new businesses (Bustamante and D’Acunto (2020)).

The KfW program is financed through federal funds and is generally available to all firms regardless of size. One of the main components of the program is the granting of subsidized loans. Similar to the SBA Preferred Lender subprogram (D’Acunto et al. (2019)), a private lender screens participating firms, deals with the application process, and provides the disbursement and loan servicing. Depending on the firm type, loans of up to Eur 1 billion can be granted to finance investments and working capital.

Apart from the maximum cap, which is only relevant to large conglomerates, firm-specific criteria are used to determine loan sizes. In particular, loan size is limited to either 25% of the firm’s annual sales at the end of the previous fiscal year, or to the liquidity requirements for the following 18 months (for large firms, the following 12 months) as

⁵Note that the KfW has been providing regular government-guaranteed loans irrespective of the COVID-19 crisis for decades. Accordingly, the *Bundesbank Firm Survey* asks firms explicitly whether the firm accessed a government-guaranteed KfW loan because of the COVID-19 crisis, and hence through the specific program, or independent of the COVID-19 crisis, through the baseline programs.

assessed by the lender, or to twice the wage costs the firm experienced throughout the previous fiscal year.

The guarantee by KfW covers 90% of the default risk (indemnification) for small and medium-sized firms (up to EUR 50 million annual sales and less than 250 employees) as well as 80% of the risk for firms above this limit. Bandwidths of interest rates are determined by KfW each year and for 2020 they are set to 1%–1.46% for small- and medium-sized firms and between 2%–2.12% for large firms. Overall, the program represents a substantial subsidy to external financing for firms and for the commercial banks that provide the funds.

The German government engaged in other smaller loan-guarantee programs during the COVID-19 crisis. However, the KfW program was the only one that was geared towards all firms, whereas other programs had a more limited scope. For example, they targeted specific sectors or firms of specific size groups, and had a relatively negligible volume.⁶

IV Firms’ Concerns During COVID-19: Lack of Demand rather Than Financing or Liquidity

We start our assessment of firms’ perceptions and expectations during the COVID-19 pandemic by considering the answers to a question that asked firms the extent to which a set of firm-level accounting and financial characteristics had changed at the onset of the COVID-19 pandemic. In particular, the question focused on 9 characteristics, which included the ability to access financing, employment levels, inventory levels, and sales, among others. For each characteristic, respondents would indicate if that dimension had strongly decreased, somewhat decreased, stayed the same, somewhat increased, or strongly increased in May 2020.

⁶The German Federal Ministry of Economics lists 129 different funding programs in the field of COVID aid as of April 1st, 2020 alone, i.e. at a relative early state of the pandemic. One example is the “Immediate Aid for Solo Self-Employed & Small Businesses Program” (in German: “Soforthilfe furr Solo-Selbst andige & Kleinstbetriebe”), which, according to the title, is aimed only at smaller firms. This program is not financed by the federal government, but by German states, and its conditions can differ from state to state.

Figure 2 summarizes the answers in graphical form. A few interesting patterns emerge. First, in terms of access to finance, more than 70% of firms reported that their ability to access external financing during the COVID-19 crisis was unchanged relative to the pre-COVID-19 period. Access to external finance is the characteristic that the largest share of firms reports as not having changed whatsoever in May 2020. Second, the share of firms that thought that their ability to access external finance had at least somewhat decreased during COVID-19 was the same as the share of firms that thought that it had somewhat increased. Taken together, these two facts alone seem to suggest that the vast majority of firms did not see a drop in their ability to access financing as an important issue during the COVID-19 crisis.

The third interesting fact is that, contrary to the perceptions about access to financing, several other aspects of firms' operations have substantially worsened during the COVID-19 crisis: Sales and employment levels have dropped dramatically, to the extent that about 60% of respondents mention drops in sales as an important problem, and supply chains have also been severely disrupted. Consumer demand and supply-side shocks not directly manageable by firms, such as disruptions in supply chains, seem to be at the very top of the perceived concerns of firms during the COVID-19 lockdown period.

Fourth, when we consider other dimensions that relate to financing, such as firms' liquidity and the need for credit of any sort, the share of firms that see no changes due to COVID-19 is large in both cases (50% and 65%, respectively), and the share of firms reporting disruptions due to COVID-19 is lower than the share reporting disruptions in demand- or supply-related dimensions.

One might argue that firms could worry that, because of the strong negative demand- and supply-side shocks faced during COVID-19, access to credit and liquidity constraints might have become important concerns in the medium term rather than in the short term. For this reason, we move on to analyze firms' expectations for the 6 months after the COVID-19 lockdown period, rather than their perceptions of the past. To this aim, we consider a question asking firms the extent to which they thought that a set of potential issues would be important problems to deal with in their day-to-day operations over the 6 months after the survey, that is, in the second semester of 2020.

For this question, firms were proposed 8 potential issues including limited access to finance, the lack of workforce, product-market competition, lack of demand, higher product or labor costs, regulation, disruptions to the supply chain, and regulatory restrictions to their operations. For each of these potential problems, firms could respond on a Likert scale ranging from 1 (no issue whatsoever), to 5 (very serious problem). Importantly, firms were not required to rank these potential issues, but were free to pick any value on the scale. For instance, firms could answer that all the issues could represent a very serious problem over the following 6 months by choosing 5 in all answers. For this reason, if firms selected low concerns for a certain issue, they must have genuinely thought that the issue was irrelevant and not that the issue was less relevant than others but still a potential serious problem.

We describe the distribution of perceived problems in Figure 3. We report the distribution for access to finance in the first column from the left and the distributions for the other issues in the columns to the right. A few comparisons of the perceptions about access to finance relative to other potential issues are worth noticing. First, access to finance is the only potential issue that more than one third of the sample thought would not be a problem for their operations at all (36.1%). The second-closest issue deemed completely irrelevant by German firms is disruptions to supply chains, which about one quarter of firms thought would not be a problem at all (26%). For all other potential issue, instead, less than 15% of respondents were convinced that they would not represent a problem at all.

Not only did the relative majority of firms think that access to finance would not be a problem at all, but we do not detect any sign of polarization of beliefs about this potential issue either. One might argue that, even though a substantial share of financially-sound firms did not see access to finance as a problem, a large share of other firms might have had the opposite perception, and hence policies in support of access to finance would still be needed. Instead, we find that only 4.6% of all respondents thought that access to finance would be a very serious problem. Of the 8 potential issues, only disruptions to supply chains were deemed as a potentially very serious problem by a smaller share of respondents. Overall, access to finance appears to be among the least relevant perceived

and expected problems by German firms during the COVID-19 crisis.

Moving on to the issues that were mentioned as the most problematic, they include the lack of demand, which about 40% of respondents thought would be a problem or a very serious problem (22.7% and 15.9%, respectively), and regulation, which almost 42% of firms considered a potentially important issue. Although the question did not explain in detail what issues might constitute a regulation-related problem, respondents might have arguably interpreted this category as including potentially stricter safety protocols and restrictions imposed on producers and service providers to comply with health regulations during the COVID-19 pandemic.

Overall, firms' perceptions and expectations reveal that firms were quite worried about depressed demand and disruptions in the industrial organization of production, and they were substantially more worried about these dimensions than about potential disruptions to their ability to access external financing, either at the onset of the pandemic or in expectations for the second part of 2020.

V Financing Operations During COVID-19: Limited Scope for Government-Guaranteed Loans

Although no question asked firms to explicitly assess their support for alternative government programs, one might argue that, based on the questions we have discussed so far, programs in support of access to finance might not have been at the top of the list of *desiderata* of our representative set of firms, because access to finance was not deemed an important problem by the vast majority of firms.

Of course, the raw-data facts discussed above might suffer from a form of reverse causality: Perhaps, it is because the government-guaranteed loan program was successful that firms did not perceive access to finance as a major issue when participating in the survey. We can assess this possibility directly by studying how firms financed their operations over the period March-May 2020 and the role government-sponsored loans played in this context.

First, we consider firms' expectations about whether their liquidity at the time of

the survey was enough to weather the COVID-19 crisis without the need for external financing, and if not, whether the external financing should have been obtained through private-sector loans or through government-sponsored programs. Figure 4 plots these perceptions.

We find that the vast majority of firms (84%) thought that their existing levels of liquidity in June 2020 would have been enough to fund operations even if the lockdown restrictions were maintained in place for several weeks during the summer 2020—a possibility that, as of October 2020, we know did not materialize. In fact, the question phrasing assumed that the generalized lockdown restrictions would be maintained at least until the end of June 2020, as per the original plans by the German federal government, whereas these measures started to be lifted already at the end of April 2020 in most parts of Germany. For this reason, it is reasonable to suspect that an even larger share of firms would have replied that their existing levels of liquidity were enough to fund operations until the end of the lockdown restrictions. Based on this reasoning, we could interpret the share of firms who thought that their existing levels of liquidity would not be enough as an upper bound of the share of firms that indeed would have needed some form of external financing to survive the liquidity shock induced by COVID-19.

About 15% of firms thought that their liquidity would be enough if containment measures were lifted in June. The remaining firms answered that liquidity is insufficient but were quite homogeneous in terms of the sources of external financing they deemed appropriate. About 5.5% of the overall sample thought that external financing could be easily obtained at market conditions and not through government programs. About 10.5% of the firms in the sample seem to believe that their liquidity would not be enough to survive under COVID-19 generalized lockdown restrictions until the end of June 2020 and that additional government programs should have been implemented but possibly not in the form of loan guarantees.

Another way to assess the extent to which German firms thought that government-guaranteed loans were an important way to guarantee access to finance is to study which forms of financing firms used during the COVID-19 lockdown period. This analysis provides an “intensive-margin” assessment of the relevance of government

interventions: We focus on access to financing as an issue by itself, so that firms do not think about potentially worse problems, and we ask firms whether they think that government-guaranteed loans are an important source of financing.

The results suggest that, during the first wave of COVID-19 crisis, government-guaranteed loans were not as important as more traditional sources of financing. Figure 5 plots the answers to a question that asked firms to report, for 7 potential sources of financing, to which extent the source was important to them. Similar to the question plotted in Figure 3, respondent firms were not required to rank the potential sources, but to indicate on a 5-value Likert scale whether they thought that each source was completely unimportant (1), very important (5), or values in between.

First, we can see that about 60% of respondents thought that government-guaranteed loans were a completely unimportant source of financing, and the ratio increases to 78% when adding those who considered this source as unimportant. Overall, about four fifths of firms did not think that government-guaranteed loans were an important potential source of financing during the COVID-19 crisis. Note that this negative assessment of government-guaranteed loans is only second to the assessment of equity issuance as an important source of financing during COVID-19.

Which sources of financing, instead, did firms deem important to weather the COVID-19 crisis? Retained earnings are considered an important source of financing by about 45% of firms. This result is noticeable given that German firms, and especially the small and medium enterprises often known as *Mittelstand*, tend to rely substantially on bank financing in the form of loans or overdraft facilities in normal times. Firms seem to believe that in times of a crisis that did not start in the financial sector, increasing their debt exposure was not a meaningful possibility.

Of course, retained earnings can only be used by firms that had accumulated them over the years before the arrival of COVID-19 in German. Understanding which sources of financing were deemed important by the subset of firms that needed to raise external finance is important. When we consider regular bank loans, we find that about 23% of respondents thought that they were important, whereas about 40% thought they were unimportant. These figures show that German firms, even if they needed to access external

financing, preferred regular loans to government-guaranteed loans, for which the share of respondents thinking they were an important source was around 15% and the share of firms thinking it was an unimportant source was about 60%. Overdraft facilities and trade credit are considered of similar importance to government-guaranteed loans in terms of their relevance during the COVID-19 crisis.

So far, we have considered the answers provided by all firms, irrespective of whether they only had regular financing needs during the COVID-19 crisis or whether, instead, they needed to access financing due to the COVID-19 shock. Considering this heterogeneity is important because a third way in which we could assess the relevance of the government's intervention in the provision of loan guarantees is to understand to which extent government-guaranteed loans were deemed important by firms that had specific needs to access finance due to the crisis. Although smaller in size than what we might have expected, this minority of firms might have considered government loans as the most important source of financing and hence the program could have been important to at least allow the survival of this group of firms.

In Figure 6, we split our sample between firms that report having accessed external financing during the COVID-19 period because of regular needs, which were not related to the pandemic (Panel A), and firms that reported accessing external financing due to needs provoked largely by COVID-19 (Panel B).

Two facts are noticeable. First, firms that accessed external financing due to COVID-19 were more likely to think that government-guaranteed loans were an important source of financing, relative to firms without COVID-19 induced needs. In particular, about 45% of the former firms thought this source was important, whereas only about 25% of the latter group shared this view. On the other hand, only about 25% of COVID-19-shocked firms thought that government-guaranteed loans were completely unimportant, whereas about 45% of those with regular needs thought so. Second, firms accessing financing due to COVID-19 were more likely to think that *every single one* of the possible sources of financing were more important compared to other firms.

These facts suggest that the firms hit the hardest by the pandemic did feel the urgency of obtaining external financing in general, but access to financing at market conditions

was the predominant source such firms sought: standard bank loans were an important source of financing according to 60% of COVID-19-shocked firms and overdraft facilities were deemed important by 40% of the COVID-19-shocked firms.

Overall, not only did most firms not consider government-guaranteed loans as an important source of financing during the COVID-19 crisis, but even when we focus on the subset of firms that declared a need to access external financing due to COVID-19, government-guaranteed loans were less relevant sources than standard bank loans or overdraft facilities.

A last possibility we consider is that, in principle, firms would have supported government-guaranteed loans but did not do so in the specific case of Germany because of potential issues in the implementation of the program. Issues with implementation might include, among others, a too strict set of conditions to access the government-guaranteed loans, or too little funding via the program, or too little difference between the conditions banks required for regular loans and government-guaranteed loans. If firms' perceived irrelevance of government-guaranteed loans was due to issues with the implementation of the program, if anything firms might have supported a program of even larger scope than what was implemented in Germany.

To assess this possibility, we consider a survey question that was asked to all the firms in the sample that declared that they had not started any negotiations to obtain a government-guaranteed loan during the COVID-19 period. We report the answers to this question in Figure 7. The question allows for three potential answers, plus an option to decline answering: no need for any external financing, no prospect of receiving the loan, and inability to meet the conditions. Importantly, firms were not required to only choose one option. For instance, a firm that thought that they would have not obtained a loan had they applied because they would not fit the conditions could have chosen both the second and third options.

Figure 7 shows that more than 85% of the firms that did not start any negotiations for guaranteed loans simply did not need any external financing during the COVID-19 crisis. This result is yet again direct evidence that the vast majority of German firms did not face financial or liquidity constraints during the crisis. Of the remaining firms, about

9% were discouraged by the prospect of not obtaining such a loan and 10% thought that they did not fit the conditions to obtain a government-guaranteed loans.

Ultimately, we conclude that the lack of relevance attributed to government-guaranteed loans during the COVID-19 crisis was backed by the fact that firms had no need to access external financing, rather than the fact that firms were discouraged by the tight requirements to qualify for the loans or other issues with the implementation of the program.

Of course, one might argue that even if only a small minority of healthy firms would have benefited from a program to support access to financing, the government should have implemented such a program. That is, sponsoring a program does not necessarily require that a large fraction of firms deems it relevant, as long as the minority of firms that access the program are productive ventures whose survival would benefit the economy in terms of employment and value added. In the next section, we exploit administrative financial data linked to the firms in the Bundesbank Firm Survey to better understand the characteristics of the firms that obtained government-guaranteed loans during the COVID-19 crisis and especially if this minority of firms belonged to the most productive and vibrant parts of the economy.

VI Did Government-guaranteed Loans Help Avoid Massive Layoffs?

Ultimately, one of the main goals of government programs that supported access to external financing early during the COVID-19 crisis was to avoid that firms would impose substantial cuts on their operations, such as massive layoffs of employees, or default, which could have generated a downward spiral and aggravated the extent of the COVID-19-induced economic crisis. The results so far seem to suggest that a representative sample of German firms did not think that supporting access to finance through government programs was an important interventions. Most firms were not facing liquidity problems during the crisis and the financial sector had not been especially hit and many firms thought that they would have been able to obtain credit through commercial

banks.

At the same time, one might worry that even a small fraction of firms who would have not been able to survive without government-supported financing or would have needed to impose drastic cuts to their operations, might have provoked substantial disruptions in terms of mass layoffs. For instance, if the firms that needed access to finance were very large corporations, even if in small number, they could have triggered major shock waves through the labor market by laying off their workers.

This concern might be reduced in most countries, including Germany, by the fact that other government-sponsored programs were put in place to directly avoid the negative shocks that could have transmitted to the labor market. For instance, a popular program among German firms of all sizes and sectors was the *Kurzarbeit* (short-time work) program, whereby firms could reduce the working hours of their employees without laying them off and the government would partially cover the lost wage income.

To compare the relevance of different programs in avoiding labor-market disruptions, we first assess which labor-adjustment policies firms implemented during the COVID-19 crisis. In Figure 8, we plot the average share of employees which firms report were subject to any of four labor-adjustment policies at the firm level, which include the short-time work program, wage cuts, layoffs, and remote working. Two facts are noteworthy: First, the average share of employees that were affected by these labor-adjustment policies is small, although a nonnegligible minority. Second, whereas certain policies such as remote working and the short-time program affected about 20% of firms' workers, in the average firm wage cuts were imposed to 7.8% of workers and layoffs only to 2.6% of workers. These patterns suggest that, on the one hand, government programs unrelated to supporting firms' access to finance, such as the short-time work program, might have had an important role in stabilizing the German labor market during the COVID-19 crisis. On the other hand, we do not detect massive residual layoffs that such programs were unable to avoid.

VII Government-guaranteed Loans During COVID-19: To Which Type of Firms?

The evidence we have discussed so far suggests that the potential lack of liquidity or restricted access to credit were not perceived by German firms as major impediments to their operations during the COVID-19 crisis. Moreover, other government programs unrelated to loan-level subsidies seem to have avoided that German firms would layoff large fractions of their employees. At the same time, though, even if limited in number, the firms that accessed subsidized loans during the crisis might have accounted for a sizable share of aggregate employment and GDP. In this case, even if a small fraction of firms accessed government-subsidized loans, the loan subsidy program might have been relevant. On the other hand, firms that were already fragile and inefficient before the COVID-19 crisis, aka *zombie firms*, might have been the beneficiaries of government-sponsored loans. In this case, subsidized loans might result in a delayed restructuring of the economy and might hamper creative destruction in the medium run.

To better understand which type of firms obtained guaranteed loans, we consider the distribution of firms that accessed government-guaranteed loans during the COVID-19 crisis based on firm size (number of employees) and sectors. In Figure 9, we compare the distribution of the share of firms that accessed regular loans from commercial banks at market conditions (Panel A) by firm size and firms that accessed government-guaranteed loans. We detect a higher propensity to obtain external credit at market conditions for larger firms: The share of firms accessing loans at market conditions was less than 10% for small firms (less than 10 employees), and the fraction increased monotonically up to an average of about 26% for large firms (more than 1,000 employees) that accessed commercial loans during the COVID-19 period. This pattern is consistent with a higher dependence on external debt by larger firms.

Panel B of Figure 7 shows that, when it comes to government-guaranteed loans, the distribution by firm size is largely homogeneous: The share of firms that took loans within each size group is rather stable and amounts to about 13%. One possibility to explain these different patterns is that regular access to credit is guided by standard and

healthy operations-related needs, and larger-scale operations require higher financing from external sources and are less subject to asymmetric information. Access to government-subsidized loans, instead, might be driven by firms that were hit the most by the COVID-19 shock, which was an economy-wide shock and hence affected a homogeneous share of firms in the economy, potentially the weakest firms at the time the shock hit, firms that are homogeneously represented in the size distribution. We will come back to this potential interpretation below when comparing the financials of firms that accessed government-guaranteed loans relative to other firms.

Figure 10 describes the split of firms that accessed credit because of the COVID-19 shock (whether commercial or government-guaranteed loans) by sectors. The graph shows vividly that the distribution of loans by sectors is quite different from the distribution of financial dependence across sectors, which typically suggests that manufacturing and mining firms have substantially higher financial dependence to sustain their operations than other sectors in the economy. For the case of credit uptake during COVID-19, the sectors with highest demand were those that produce goods and services that require direct interaction with consumers: Retail trade (32%) and especially Accommodation and food services (51%). Sectors that in normal times tend to be more dependent on external financing, such as Mining and quarrying, Manufacturing (Food and beverages, Non-durable goods, Producer goods), and Construction had an incidence of access to financing during the COVID-19 crisis of about 25% each.

Overall, the size and industry distribution of firms that accessed any form of external financing during the COVID-19 crisis differs from those in normal times, in the sense that smaller firms and firms in sectors at direct contact with consumers were disproportionately more likely to access government-subsidized loans relative to other firms and relative to the patterns of access to financing in normal times.

Ultimately, we ask whether the firms that accessed government-subsidized loans were the weakest even before the COVID-19 shock hit—potentially *zombie firms*—or if instead the program allowed the survival of firms that were productive and vibrant before the arrival of COVID-19. To this aim, we compare a set of relevant financials and productivity-related metrics measured at the end of the most recent fiscal year for which we observe

data in Janis, across firms that applied to government-guaranteed loans because of the COVID-19 crisis and other firms—we consider both firms that did not access any form of external financing during the same period and firms that applied for commercial loans at market conditions.

In terms of risk, firms accessing government-guaranteed loans due to COVID-19 had a riskier financial profile before COVID-19 (see Table 1): their income to interest ratio at the end of 2019 was on average 22, i.e. about 4 times lower than other firms' ratio (78, on average). This result is not driven by firms with government-guaranteed loans having more outstanding liabilities but instead is driven by a lower profitability among those firms.

To study whether firms accessing government-guaranteed loans display zombie features, we follow Schmidt, Schneider, Steffen, and Streit (2019) and define firms with negative returns on assets, negative change in total assets (proxy for investments), and debt servicing capacity below 5% measured as net income over loans and liabilities. Based on this definition, we find that around 6.25% of firms display zombie features in line with the share documented in the literature. The share increases to 8.87% among firms taking guaranteed loans and is only 5.8% among other firms. Moreover, when we focus on the outcome of the loan negotiations, we find that zombie firms only receive their desired loan amount in 36% of the cases in negotiations with commercial banks compared to 51% for non-zombie firms. For guaranteed loans instead, the fraction of zombie firms that receives the desired loan amount increases to more than 56% and is about 66% for non-zombie firms. These results suggest that zombie firms benefit substantially more from the loan guarantee program in that the share of them receiving the desired loan amount increases by more than 20 percentage points but only by 15 percentage points for other firms.

Another way of understanding whether firms that access government-guaranteed loans are riskier is to study the internal rating the Bundesbank assign to firms. First, we find that firms that access subsidized loans have on average a rating that is 2.5 notches below the average rating of other firms. Moreover, among guaranteed loan takers, more than 60% are not considered eligible for standard refinancing operations with the Bundesbank, whereas this fraction is only 25% for other firms (see Figure 11). Finally, we

compare the whole distribution of rating categories across the two sets of firms and find that firms that take up guaranteed loans have a rating distribution shifted to the right compared to the distribution for other firms, that is, they are substantially riskier firms (see Figure 12).

Overall, the firms that applied for government-guaranteed loans due to the COVID-19 shock appear to be the weakest firms in the German economy, in the sense that their operations and performance, were *already* substantially worse than those of other firms before the COVID-19 shock hit, and the financial profile of these firms was also substantially riskier before the arrival of the pandemic.

Although these simple statistics cannot definitely tell us whether the firms that obtained government-subsidized financing during COVID-19 were *zombie firms*, and hence whether keeping them alive through loan subsidies at the expense of the taxpayer was a welfare-improving policy, at a minimum they show that it was not the most active and best performing firms that were subsidized by the government after facing a sudden and unexpected negative economic shock. Rather, it was the bottom of the distribution of firms based on such metrics that were allowed to survive thanks to government subsidies.

VIII Conclusion

Following the experience of the Financial Crisis of 2008-2009, governments around the world implemented government-subsidized loan programs at the onset of the COVID-19 pandemic to ensure adequate access to finance for firms and hinder waves of defaults and mass layoffs. The tremendously different genesis of these crises—one percolated from the financial sector to the real economy and the other largely unrelated to shocks to the financial-sector—opens the question of whether government-subsidized loan programs can be a relevant and useful countercyclical policy in general.

To tackle this question, we use a novel survey of firm-level perceptions and expectations, the *Bundesbank Survey of Firms*, paired with administrative data on responding firms' financials. First, we show that most firms considered lack of demand as a major concern during the COVID-19 pandemic, whereas lack of financing was a minor

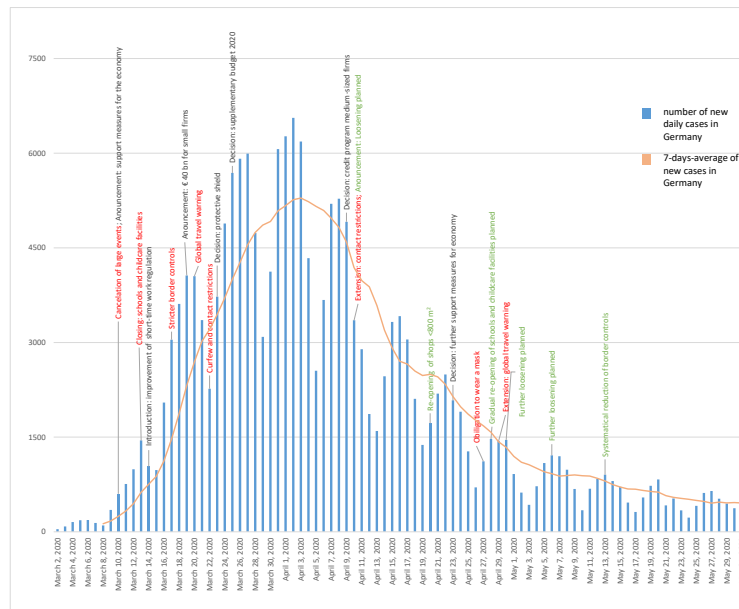
concern for their businesses. Second, even among firms that needed to access external financing, subsidized loans only played a minor role relative to regular commercial bank loans or overdraft facilities. Third, we show that firms accessing subsidized loans were firms that already before the onset of COVID-19 had weak fundamentals.

Ultimately, our descriptive results possibly invalidate the idea of recycling costly policies and programs across time periods and to counter fundamentally different negative shocks to the real economy. Whereas government-guaranteed liquidity and access to external financing might have been quite important at a time in which the collapse of the financial sector dried up access to financing for firms, the same policy might have contributed to keep alive undeserving firms that perhaps would have not survived irrespective of the COVID-19 pandemic.

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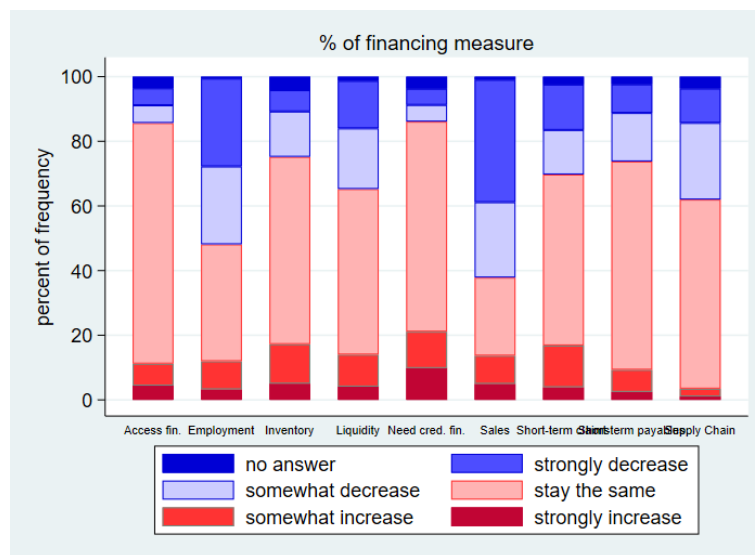
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Figure 1: Number of New Daily COVID-19 Cases and Timeline of Policy Measures



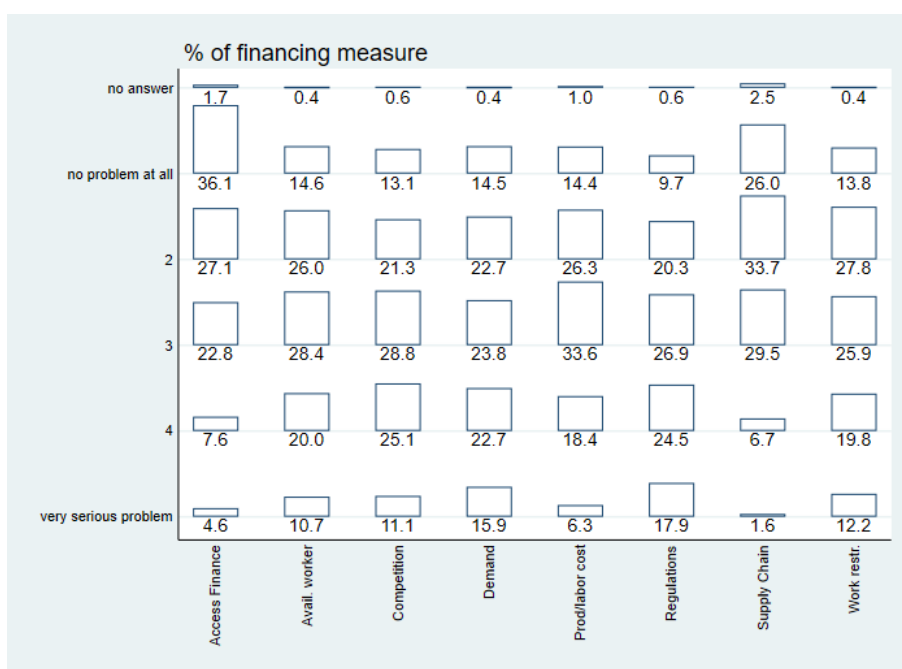
This figure plots the daily number of newly confirmed COVID-19 cases, the seven-day average as well as the implemented policy measures until end of May 2020 before the start of the Bundesbank firm survey.

Figure 2: Perceived Change of Firm-level Characteristics One Month before COVID-19: Access to Finance vs. Other Characteristics



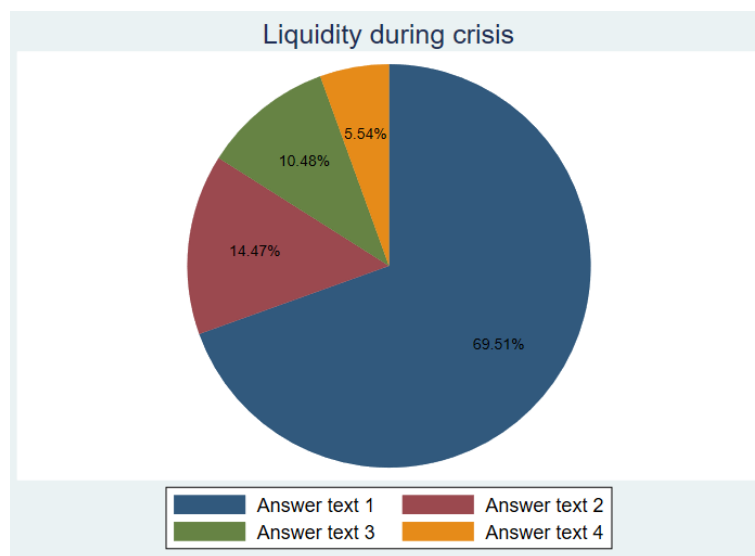
This figure plots the qualitative answers on the perceived developments of several firm-level variables over the previous month. The answers are from a survey of firms which the German Bundesbank ran in June of 2020. The answer options are on a five point Lickert scale with 1 being strongly decreased to 5 being strongly increased.

Figure 3: Relevance of Potential Problems over the 6 Months After Lockdown: Access to Finance vs. Other Issues



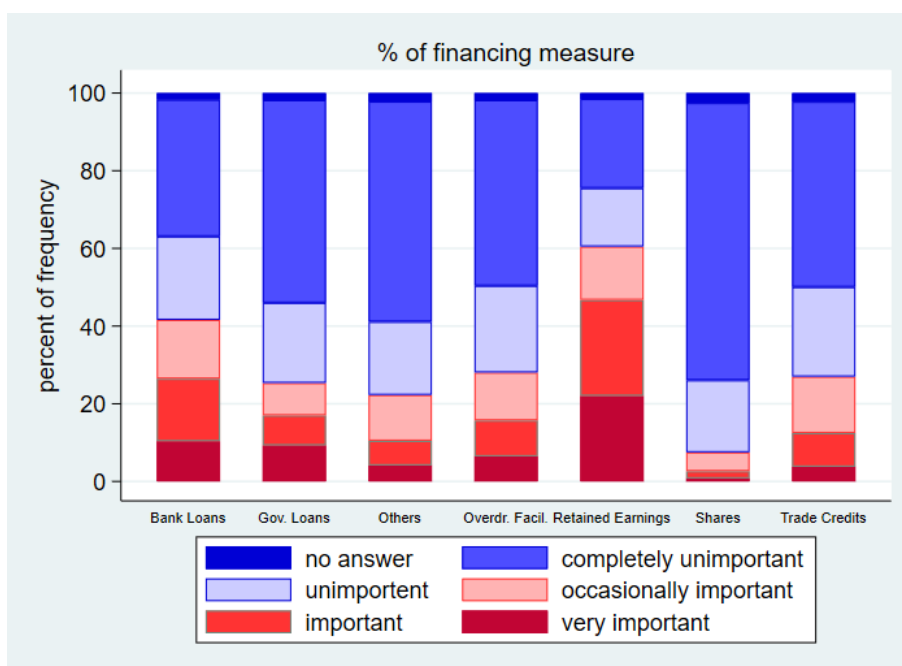
This figure plots the qualitative answers about the extent to which German firms think that a set of pre-specified problems will be an impediment to their operations over the following 6 months. The answers are from the new Bundesbank Firm Survey, which was fielded in June 2020. The answer options are on a five point Likert scale with 1 suggesting that the proposed issue is not a problem at all to 5 meaning it is a very serious problem.

Figure 4: Perceived Need for Liquidity to Weather the COVID-19 Crisis



This figure plots the qualitative answers on the perceived sufficiency of firms' sources of financing and liquidity during the Covid-19 pandemic. The answers are from a survey of firms which the German Bundesbank ran in June of 2020. The answer options are (1) sufficient even if containment measures are extended until end of July; (2) sufficient if containment measures are reduced in June; (3) insufficient and additional government programs are necessary; (4) insufficient and additional private financing will be sought.

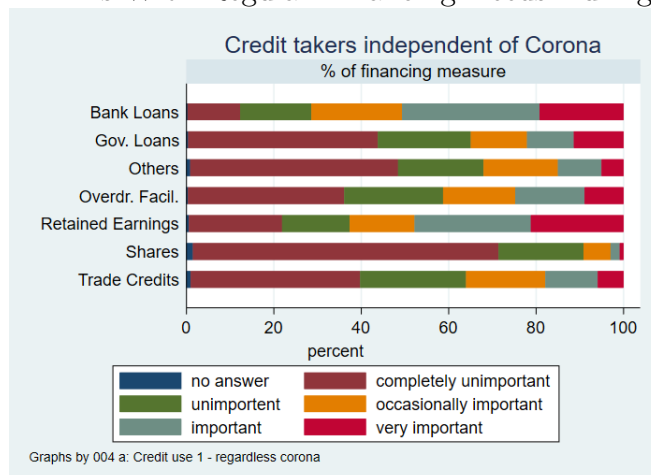
Figure 5: Sources of Financing During the COVID-19 Crisis: Government-guaranteed Loans vs. Other Sources



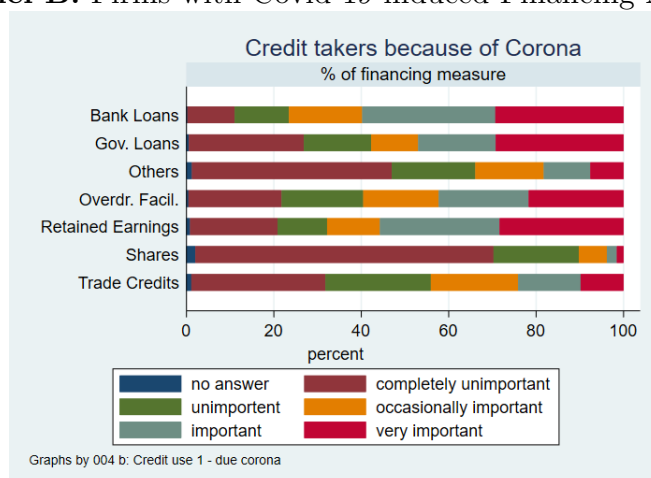
This figure plots the qualitative answers on the sources of financing during March to May of 2020. The answers are from a survey of firms which the German Bundesbank ran in June of 2020. The answer options are on a five point Lickert scale with 1 being completely unimportant to 5 being very important. Panel A reports the average score and Panel B the individual answer options.

Figure 6: Sources of Financing during the COVID-19 Crisis: Regular Needs vs. COVID-19-induced Needs

Panel A. Firms With Regular Financing Needs During Covid-19

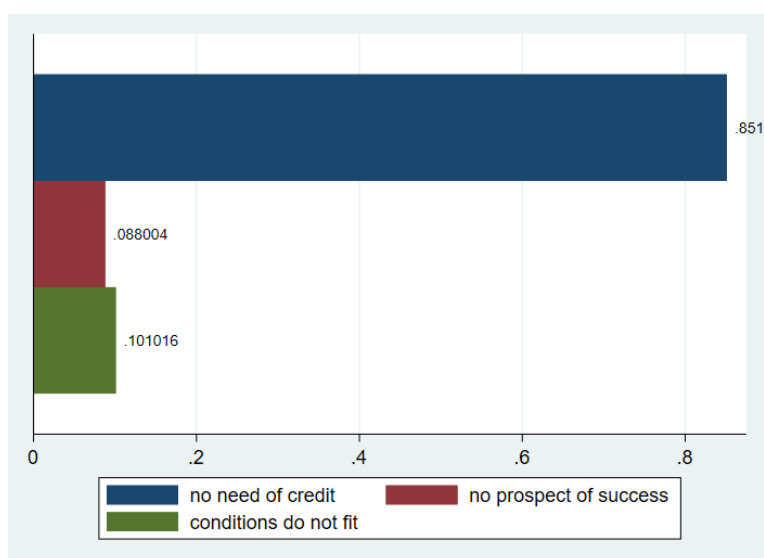


Panel B. Firms with Covid-19-induced Financing Needs



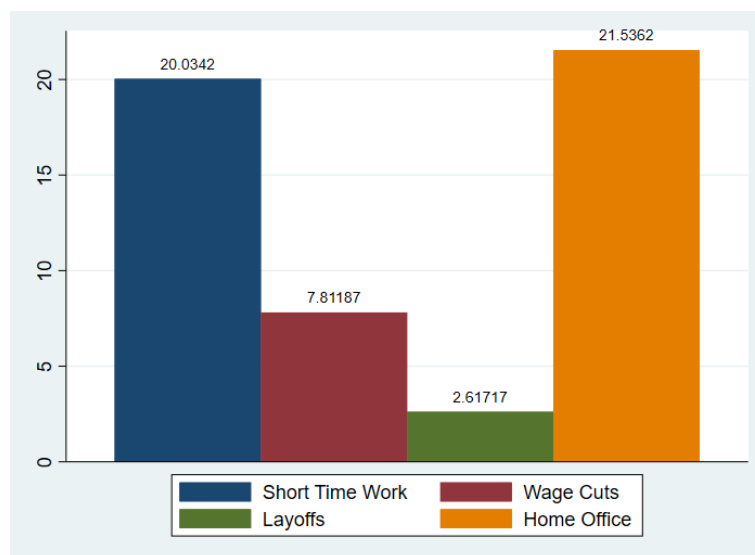
This figure plots the qualitative answers on the sources of financing during March to May of 2020 for the overall subsample of firms that took out a loan or line of credit in Panel A, first that took out loans independent of Covid-19 in Panel B, and because of Covid-19 in Panel C. The answers are from a survey of firms which the German Bundesbank ran in June of 2020. The answer options are on a five point Likert scale with 1 being completely unimportant to 5 being very important.

Figure 7: Reasons for No Access to Government-Guaranteed Loans during the COVID-19 Crisis



This figure plots the answers to a question why firms did not start negotiations to access a government-subsidized loan during March to May of 2020. The answers are from a survey of firms which the German Bundesbank ran in June of 2020.

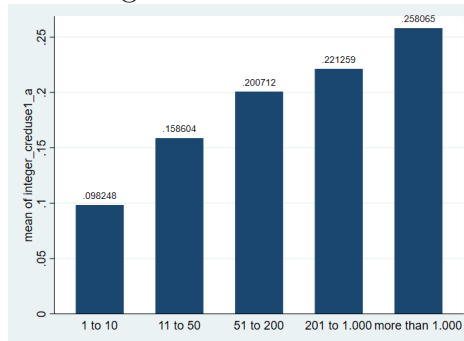
Figure 8: Share of Employees Affected by Firm-level Labor-Adjustment Policies



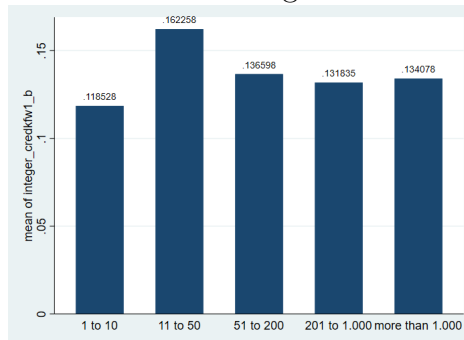
This figure plots the answers to the questions how firms adjust their labor during the following six months among firms that expect lower employment or already decreased employment. The answers are from a survey of firms which the German Bundesbank ran in June of 2020.

Figure 9: Loan Take-up Because of the COVID-19 Crisis, by Firm Size

Panel A. Regular Commercial Bank Loans:

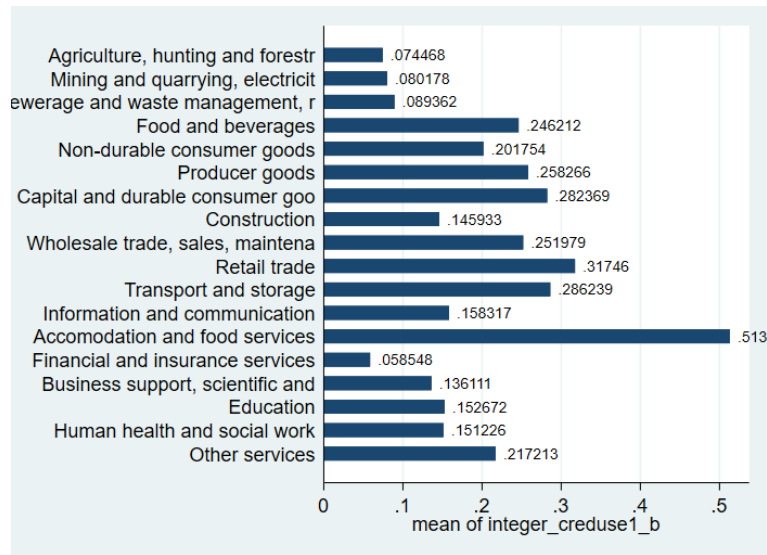


Panel B. Government-guaranteed Loans



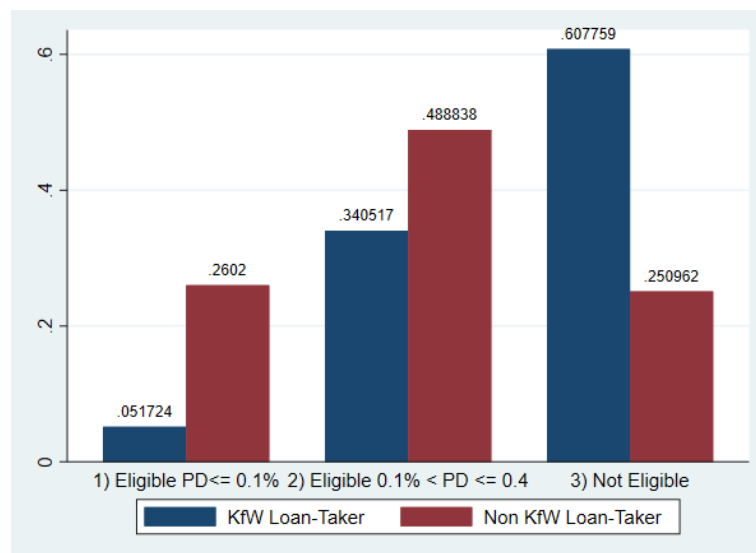
This figure plots the take-up of loans from private banks (Panel A) or government-subsidized loans (Panel B) independent and because of Covid-19 during March to May of 2020. The answers are from a survey of firms which the German Bundesbank ran in June of 2020.

Figure 10: Loan Take-up Because of the COVID-19 Crisis, by Sector



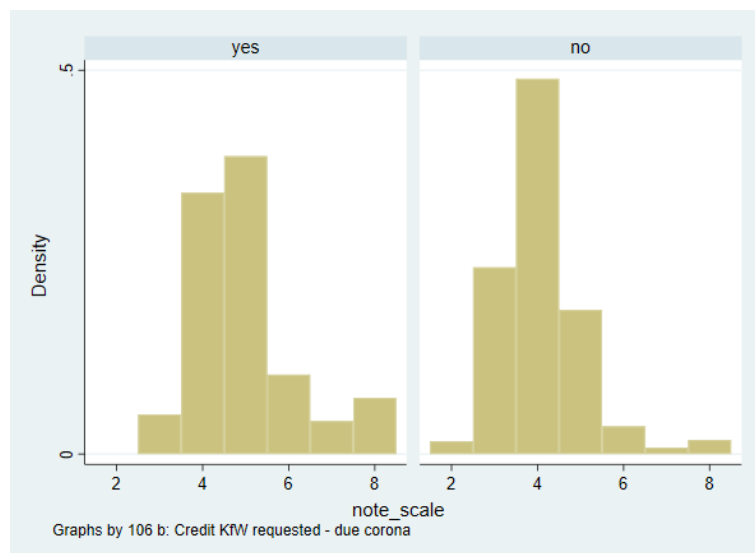
This figure plots the fraction of firms that started negotiations about raising a loan or line of credit by primary sector for firms that declare the negotiations started because of COVID-19, that is, they would have not sought credit absent the COVID-19 crisis. The answers are from a survey of firms which the German Bundesbank ran in June of 2020.

Figure 11: Eligibility of Firms that Access Government-Guaranteed Loans vs. Firms that did not Access Government-Guaranteed Loans



This figure plots the fraction of firms that fall into each of the three different eligibility categories across the two sets of firms, i.e. firms that access government-guaranteed loans due to the COVID-19 crisis vs. firms that did not access government-guaranteed loans.

Figure 12: **Rating Distribution of Firms that Access Government-Guaranteed Loans vs. Firms that did not Access Government-Guaranteed Loans**



This figure plots the distribution of rating categories across the two sets of firms, i.e. firms that access government-guaranteed loans due to the COVID-19 crisis vs. firms that did not access government-guaranteed loans.

Table 1: **Summary Statistics**

This table reports summary statistics for several balance sheet variables for the matched sample of firms responding in the Bundesbank Survey of Firms and the Bundesbank database Janis which contains financial statements of non-financial firms from the last fiscal year end before the start of the Covid-19 pandemic. We also report these statistics separately for firms that obtained loans from commercial banks and firms that obtained government-guaranteed loans (kfw loan takers).

	Mean	Std.	q(0.10)	q(0.25)	q(0.50)	q(0.75)	q(0.90)
Income Interest Ratio							
full sample	69.45	610.03	−.99	1.72	6.00	21.60	80.50
kfw loan takers	22.01	229.45	−1.91	1.16	3.46	9.31	32.87
non-kfw loan takers	78.25	656.42	−.81	1.91	6.69	24.55	98.07
Leverage Ratio							
full sample	.50	.26	.14	.30	.51	.71	.86
kfw loan takers	.60	.24	.27	.43	.61	.78	.90
non-kfw loan takers	.49	.26	.13	.27	.49	.69	.85
Debt Serving Capacity							
full sample	.30	2.03	−.01	.00	.06	.22	.60
kfw loan takers	.13	.92	−.03	.00	.04	.14	.32
non-kfw loan takers	.33	2.16	−.01	.00	.07	.23	.66
Return on Assets							
full sample	.05	.18	−.01	0.00	.03	.08	.16
kfw loan takers	.05	.37	−.02	.00	.03	.07	.14
non-kfw loan takers	.05	.12	−.00	0.00	.03	.09	.16
Tangible Assets (in 1000 €)							
full sample	37,183	228,889	68	489	3,182	14,791	55,498
kfw loan takers	2,624	295,320	63	373	2,108	8,018	21,931
non-kfw loan takers	39,146	214,775	71	515	3,422	16,393	60,256
Net Income/ Loss (in 1000 €)							
full sample	3,993	78,620	-26	2	382	1,920	5,793
kfw loan takers	3,762	32,442	-98	3	177	866	3,242
non-kfw loan takers	4,035	84,282	-15	2	454	2,149	6,260
Total Assets (in 1m €)							
full sample	167.99	1,581.67	1.39	5.63	20.10	56.32	180.61
kfw loan takers	123.18	1,251.17	0.89	3.53	11.15	34.52	92.92
non-kfw loan takers	176.06	1,633.57	1.52	6.40	21.75	62.35	195.08
Interest (in 1000 €)							
full sample	2,258	21,511	3	26	141	513	1,914
kfw loan takers	1,899	21,469	6	35	143	431	1,118
non-kfw loan takers	2,323	21,521	3	25	140	532	2,060
Operating results (in 1000 €)							
full sample	4,830	51,721	-107	157	1,044	3,684	10,274
kfw loan takers	3,800	32,017	-112	73	493	1,714	5,333
non-kfw loan takers	5,015	54,514	-106	190	1,186	4,070	11,306
Loans and Liabilities (in 1 m. €)							
full sample	97.49	1,161.32	0.56	2.18	8.23	24.24	80.45
kfw loan takers	71.00	702.59	0.47	1.79	6.43	18.61	50.17
non-kfw loan takers	102.25	1,225.73	0.57	2.23	8.59	25.39	85.64

Online Appendix:

Did Targeting Financial Constraints During COVID-19 Make Sense?

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Not for Publication

I Survey Questions

Below we report the original survey questions translated to English.

Question 1 *How have the following company key figures developed in the past month?*

1. sales
2. employment (measured in working hours)
3. Access to intermediate goods and intermediate products
4. Short-term trade payables
5. Short-term trade receivables
6. Liquid funds available at short notice
7. Inventories
 - significantly decreased
 - slightly decreased
 - stayed roughly the same
 - increased slightly
 - increased significantly

Question 2 *What do you think, how will the following sizes develop in your company in the next 6 months? Will ...*

1. sales
2. employment (measured in working hours)
3. Access to intermediate goods and intermediate products
4. Short-term trade payables
5. Short-term trade receivables

6. Liquid funds available at short notice
7. Need for loan financing
8. domestic sales prices

- decrease significantly
- decrease slightly
- stay roughly the same
- increase slightly
- increase significantly

Question 3 *How big of a problem do you think the following items will be in the next six months?*

Slider from 1 to 5 with 1 being no problem whatsoever and 5 being a serious problem.

1. Lack of customer demand
2. High competitive pressure
3. Access to finance
4. Access to intermediate goods and services
5. High production / labor costs
6. Availability of qualified workers and experienced managers
7. High regulation / government regulations
8. Closures or work restrictions due to the corona pandemic

Question 4 *How has your production / business developed since the corona pandemic?*

- decreased
- stayed the same
- increased

Question 5 *As a result of the corona pandemic, your production / business activity has decreased/ increased.*

How high was the drop/ increase in your production / business activity as a result of the corona pandemic in May compared to a "normal" situation, for example in May 2019? Please enter a value in the number field.

[Input field] percent [value range 1-100]

Question 6 *At the beginning you indicated that the employment in your company has decreased significantly.*

At the beginning, you indicated that employment in your company is likely to decrease significantly.

What percentage of your employees are or are likely to be affected by the corona pandemic within the following six months from ...

Please enter a value in each of the number fields (without decimal places).

1. Short-time work [input field] percent
2. Wage cuts [input field] percent
3. layoffs [input field] percent
4. Work from home [input field] percent

Question 7 *At the beginning, you indicated that access to inputs and intermediate products has decreased.*

At the beginning, you indicated that access to intermediate goods and intermediate products is likely to decrease.

At the beginning, you indicated that access to inputs and upstream products is an urgent problem for your company.

Does this affect ...

- domestic supplies
- supplies from abroad
- both domestic supplies and supplies from abroad

Question 8 *Is it possible to switch to alternative, immediately available goods?*

- no
- yes to domestic goods
- yes to foreign goods
- yes to both domestic and foreign goods

Question 9 *How important were the following sources of finance for your company in March, April and May 2020?*

1. Retained earnings
2. Commercial bank loans
3. Overdrafts
4. Government-sponsored loans
5. Trade credits (including down payments and trade payables)
6. Share issuance
7. Other instruments (bonds, other loans (including to affiliated companies), leasing / factoring)
 - completely unimportant
 - unimportant

- occasionally important
- important
- very important

Question 10 *In March, April or May 2020, did your company negotiate to take out a loan or set up a credit line with one or more banks?*

Note: All government-sponsored loans are excluded.

- yes, because of the COVID-19 pandemic
- yes, independent of the COVID-19 pandemic
- no

Question 11 *What was the outcome of the negotiations?*

- Credit / credit line was approved in the desired amount with the desired conditions (interest, collateral)
- Credit / credit line was approved in the desired amount, but on worse terms
- Credit / line of credit has been approved with a lower amount, but on the terms requested
- Credit / credit line was approved with a lower amount and on poorer terms
- Decision on loan application has not yet been made
- Credit negotiation ended without agreement

If Q10 no

Question 12 *What was the reason?*

- No need
- No prospect of success
- No more need, planned borrowing postponed / canceled due to current developments

Question 13 *Did your company apply for a loan sponsored by KfW or the state development banks in March, April or May 2020?*

- yes, because of the COVID-19 pandemic
- yes, independent of the COVID-19 pandemic
- no

Question 14 *What was the outcome of the negotiations?*

- Credit / credit line was approved in the desired amount
- Credit / line of credit has been approved with a lower amount
- Decision on loan application has not yet been made
- Credit negotiation ended without agreement

If Q13 no

Question 15 *What was the reason?*

- No need
- No prospect of success
- Conditions of government-sponsored loans do not match needs

Question 16 *Is the total amount of government measures (e.g. KfW loans, economic stabilization funds, direct grants, liquidity aids etc.) and existing sources of funding likely to be sufficient to ensure your company's liquidity supply in the current COVID-19 pandemic?*

- The total amount is expected to be sufficient to deal with the current crisis even if the current restrictions are extended to the end of July.
- The total amount is expected to be sufficient to deal with the current crisis, but only if the current restrictions are reduced in June.
- Even if the current restrictions are reduced in June, the total amount is probably not sufficient; further government support measures are required.
- Even if the current restrictions are reduced in June, the total amount is probably not sufficient; the use of further sources of finance is intended (e.g. bank loans, capital market issues, trade finance, financing through affiliated companies, etc.).
- No statement possible.