

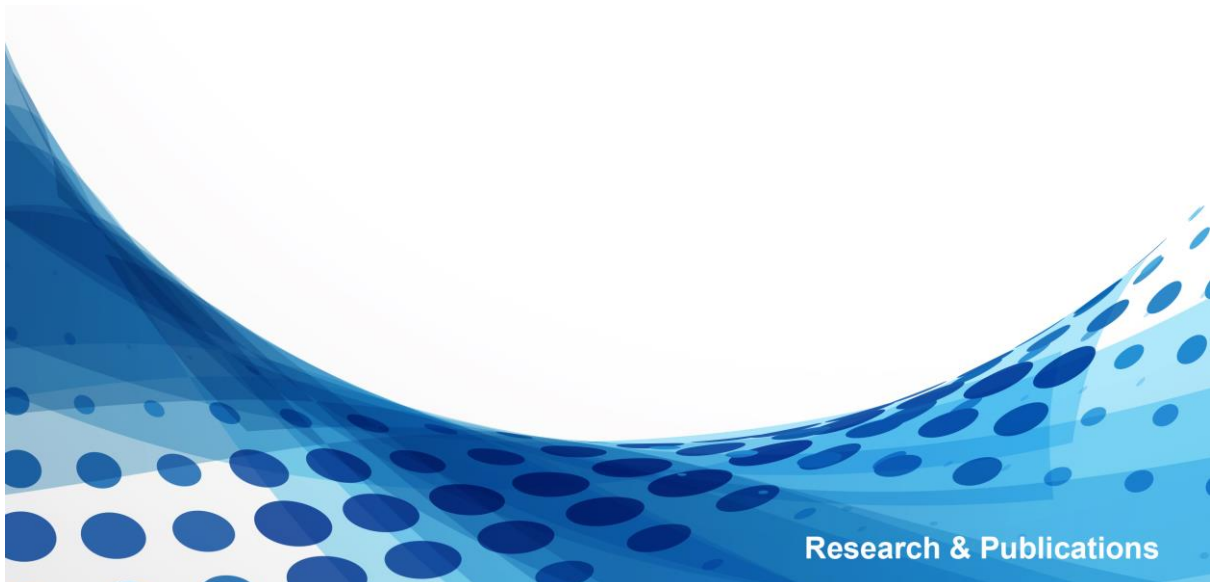


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management sentiment: Impact on debt financing during  
COVID-19**

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Research & Publications

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# Government responses, business continuity, and management sentiment: Impact on debt financing during COVID-19\*

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## Abstract

We examine how the government responses, amenability to remote working, and managerial outlook associated with COVID-19 influence debt financing by firms around the world. We find that the propensity and the amount of loan financing by firms is higher with greater stringency of lockdowns. Firms' debt raising during the pandemic is also influenced by the work-from-home amenability of industries. We find that firms with greater reliance on customer interaction have a higher propensity for debt financing at the onset of the pandemic, indicative of their heightened need for liquidity. The propensity for bond financing is higher for firms that have a higher degree of exposure to the pandemic. In contrast, firms that hold a positive sentiment about the impact of the pandemic are less likely to raise debt financing. Our key results are largely robust to the effects of quantitative easing by the major central banks. The study deepens the understanding of the heterogeneous impact of the pandemic on debt financing on account of various country-, industry-, and firm-level factors.

*Keywords:* COVID-19, pandemic, bond financing, syndicated loans, work-from-home

*JEL classification:* G11; G21; G32

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# 1. Introduction

Governments around the world have undertaken a range of measures to contain the COVID-19 pandemic and to mitigate its consequences. These measures included lockdowns and containment measures, such as work-at-home requirements and school closings, debt relief to households, and fiscal stimulus, among others ([Hale, Petherick, Phillips, & Webster, 2020](#)). The pandemic-induced uncertainty and lockdowns created severe disruptions for firms and resulted in significant loss of business confidence and, consequently, generated negative sentiment about corporate earnings growth ([Baker, Bloom, Davis, & Terry, 2020](#)).

It is likely that firms in countries that had more stringent workplace restrictions and social distancing norms experienced a greater adverse impact on their business. The economic impact of COVID-19 related restrictions were partly assuaged for firms located in countries with substantial fiscal support and operating in industries that are amenable to remote work arrangements. Firms with the ability to maintain operational continuity during the pandemic, particularly those without a significant need for physical presence of employees and direct customer interactions, were likely to perform better, while sectors such as retail, hospitality, and tourism that require customer interface fared worse ([Dingel & Neiman, 2020](#); [Koren & Pető, 2020](#)). The COVID-19 related disruptions, government response, and variation in the amenability of industries to work-from-home are likely to have influenced the financial flexibility of firms and their ability to access financing.

In our study, we examine the impact of government responses, industry amenability to remote working, and managerial sentiment about COVID-19 pandemic on debt financing of firms. Specifically, we examine the cross-sectional impact of these three factors on the propensity and the quantity of financing obtained by firms through loan and bond markets. The findings of our study and their implications are as follows.

First, we find that the government response to COVID-19 pandemic by way of stringency of the lockdown, had a significant impact on debt financing by firms. For instance, a one standard deviation increase in the lockdown stringency has led to a 4.9 percentage

point increase in the propensity for debt financing in the second quarter of year 2020. The finding of increased debt financing propensity associated with lockdown stringency suggests that firms expected greater restrictions on people mobility to adversely impact their liquidity. Several other dimensions, such as the extent of work place closures, which proxy for the extent of restrictions on work and people mobility are also associated with greater likelihood of debt financing during the crisis.

Second, we find that the extent of fiscal support measures taken by governments are associated with lower amount of loan financing by firms through the crisis period. It is likely that a greater level of financial relief and direct benefit transfers to the society at large helped to dampen the negative demand shock and thus indirectly lower the adverse impact on firm-level financing.

Third, we observe that the propensity for debt financing mobilized by firms during the COVID-19 stricken quarters is associated with the suitability of industries for remote working. While we find that firms in industries that require greater physical presence did not raise greater debt financing in the second quarter of 2020, they were more likely to do so in the following quarter. The association between the work-from-home amenability of firms and variation in debt financing documents heterogeneity in the impact of the pandemic across firms in different industries.

Fourth, we also find that the borrowing decisions of firms were also strongly impacted by the exposure of firms to COVID-19 and the outlook of the managers towards the impact of the pandemic. Based on measures compiled from textual analysis of earnings call transcripts by [Hassan, Hollander, van Lent, and Tahoun \(2020\)](#), we find that the propensity for loan and bond financing is greater among firms with higher exposure to the impact of COVID-19. Notably, the subjective outlook of the management towards the likely impact of COVID-19 has a significant impact on their financing decisions. Specifically, positive sentiment of the management is associated with a lower likelihood of bond and loan financing. These findings imply that the subjective outlook of the management has a strong influence on their assessment of the need for financing in the face of a pandemic.

Finally, consistent with the findings on the propensity for debt financing, we also find that firms raised greater amounts of loan financing in countries with higher stringency and containment measures. These show that firms increased their reliance on banks in the face of the disruptions brought about by COVID-19. We also explore the end use of loans obtained by the firms to throw light on the financing motives. The trends in the end use of loans suggest that liquidity and refinancing motives took precedence over growth motives in the second quarter of 2020. However, we see a rebound of the growth motives in the third quarter.

Our findings are robust to the inclusion of fixed effects at various levels of aggregation. This helps us to control for the unobserved heterogeneity and seasonality in the debt issuance ([Gormley & Matsa, 2014](#)). We also examine whether our results are driven by the quantitative easing measures taken by the major central banks. Our key findings are qualitatively similar after inclusion of the effects of quantitative easing.

Our study makes several contributions to the literature on capital raising by firms during crisis episodes. First, the worldwide linked bonds-loans-firms database employed in the study allows us to examine the effect of government response, industry vulnerability to the pandemic, and firm-level sentiment on firms' access to debt financing from different sources. In contrast to the recent studies that have considered the impact of the pandemic on firm's reliance on debt financing at a country-level, with several focused on the US (for instance, [Acharya & Steffen, 2020](#); [Haddad, Moreira, & Muir, 2020](#); [Halling, Yu, & Zechner, 2020](#)), the database allows us to study firm financing around the world for a large set of advanced and developing economies. Second, our study differs from the recent research on bond markets during the COVID-19 crisis that have considered yields (for instance, [Haddad et al., 2020](#)) or transaction costs ([Kargar et al., 2020](#)). By contrast, we focus on the extensive margin, the propensity or likelihood of issuing bonds or accessing loans, instead of borrowing costs.

Third, our research complements studies that have considered both bond markets and syndicated loans together. For instance, [Arteta and Hale \(2008\)](#) examine the two markets during sovereign debt crisis episodes and [Francis, Aykut, and Tereanu \(2014\)](#) over the

credit cycle. [Goel, Garralda, et al. \(2020\)](#) provide a descriptive analysis of syndicated loans and bond issuance by large and small firms during the COVID-19 crisis. [Acharya and Steffen \(2020\)](#) provide an analysis of the stock market reaction to the reliance of investment grade and sub-investment grade firms on drawdown of credit lines and bond issuance during the COVID-19 crisis. By accounting for differences across countries in the extent of the government responses in the form of lockdowns and containment measures that may affect the broader operating environment for firms, we are able to estimate the heterogeneous impact of such actions on debt financing.

The remaining sections of the paper are organized as follows. The next section discusses the literature on the linkage between crisis and firms' reliance on capital markets. The empirical approach used in this study is discussed in [section 3](#). This is followed by a description of the results and robustness test in [section 4](#). Finally, [section 5](#) concludes with a discussion of the findings and policy implications.

## **2. COVID-19 crisis and debt financing of firms**

A growing literature examines the access of firms to debt markets and the terms of debt contracts during crisis episodes and in the subsequent periods. In this section, we provide a brief overview of the research related to debt financing of firms, including corporate bond issuances and loan financing during such crisis episodes, and identify possible pandemic related variables that could influence the debt financing.

A number of papers examine the impact of financial crisis on bond issuance. For instance, [Halling et al. \(2020\)](#) find that bond issuance by investment grade firms have increased during the COVID-19 crisis. [Acharya and Steffen \(2020\)](#) document that while the AAA rated firms have issued bonds to supplement their liquidity, the lower rated firms (BBB rated) firms have largely drawn on their credit lines. Similarly, [Li, Strahan, and Zhang \(2020\)](#) document that the large firms have also resorted to bank borrowing by drawing down their credit lines during the crisis. It is widely documented that during crisis episodes the corporate bond market witness a strong flight to quality. For instance,

Dick-Nielsen, Feldhütter, and Lando (2012) find the liquidity represented by bid-ask spread deteriorates to a greater extent for the bonds with less than investment grade ratings during the sub-prime crisis. In a related paper, “Global corporate bond issuance: What role for US quantitative easing?” (2016) examine the relationship between global corporate bond issuances and quantitative easing, and find support in favour of “gap-filling” argument, where re-issuance of the assets purchased by the Fed explain the bond financing in the market.

Countries around the world have handled the pandemic with varying levels of containment and support measures to mitigate the fallout of the crisis. Hence, we expect that apart from the firm-level heterogeneity documented by the preceding studies, there could be significant variation in debt financing of firms across countries. Falato, Goldstein, and Hortaçsu (2020) examine the impact of the COVID-19 crisis on the bond funds and find the Federal Reserve intervention has helped to assuage investor concerns about the funds and thus reversing the outflows triggered by the crisis. Kargar et al. (2020) examine the impact of the interventions by the Federal Reserve on corporate bond market liquidity during the COVID-19 crisis and find that liquidity has significantly improved for the eligible bonds.<sup>12</sup>

In a complementary finding, Haddad et al. (2020) attribute the decline in the yields associated with Federal bond buying program of the investment grade bonds to the liquidity channel as funds tried to liquidate their investment grade bonds during the crisis. However, the responses have varied not only on the extent of direct support to the bond market, but also on several other dimensions such as the stringency of the lockdown, workplace restrictions, financial assistance to households etc. Therefore, the likelihood of debt financing by firms could be greater in countries that have had stricter containment measures. At the same time, the need for financing is lower for firms in countries that had the benefit of greater government support.

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<sup>1</sup>The interventions allowed the Fed to purchase investment grade corporate bonds of US firms and ETF shares invested in similar assets.

<sup>2</sup>The did not find an improvement in the bid-ask spreads of bonds ineligible for under the Federal Reserve’s bond buying programme.



It is well documented that the COVID-19 crisis had dramatically different impact across industries on account of the variation in the demand shock and the ability to continue their operations (Dingel & Neiman, 2020; Koren & Petó, 2020). The level of business continuity was significantly determined by the suitability of firms to remote work. Bai, Brynjolfsson, Jin, Steffen, and Wan (2020) document that the market value of firms more amenable to work-from-home arrangements remained more resilient during the crisis. It is likely that firms that are more amenable to production and service delivery arrangements, while maintaining social distancing, are less vulnerable to the crisis and therefore have lower borrowing needs.

It is well documented that firms that face higher growth opportunities and volatile operating cash flows hold greater liquidity (Almeida, Campello, & Weisbach, 2004). Financially constrained firms that face valuable investment opportunities benefit from holding higher cash balances (Denis & Sibilkov, 2010). Faulkender and Wang (2006) finds that the marginal value attached by the equity market to incremental cash holdings of firms is also greater for firms which face difficulty in accessing capital markets and those who have valuable investment opportunities. The marginal value declines with declines with higher cash holdings and leverage.<sup>3</sup> Firms with short-maturity debt face increased refinancing risk. It is also documented that firms try to mitigate the adverse impact of refinancing risk by holding cash reserves (Harford, Klasa, & Maxwell, 2014).

The pandemic could add to the heterogeneity of the firms' need to maintain additional liquidity. It is possible that the firm-level extent of vulnerability to the COVID-19 crisis, through exposure to demand shock, operational disruptions etc., have a significant impact on their pre-cautionary motive to raise liquidity. Moreover, it is also identified that the subjective managerial beliefs have a substantial role in the funding decisions firms during crisis. For instance, Campello, Graham, and Harvey (2010) find that financially constrained firms burn greater amounts of cash in the aftermath of a crisis. They also document that financially constrained firms ended up with lower capital investments.

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<sup>3</sup>It declines with leverage as at higher levels of leverage the incremental benefit of an additional dollar of cash partly accrues to the lenders (Faulkender & Wang, 2006).

Therefore, it is likely that the subjective outlook of the managers on the impact of COVID-19 on their firms explain significant variation in their debt financing during the pandemic.

In our study, we examine the likely impact on bond financing and bank loans independently. The bank dependant firms may have a larger impact during the crisis on account of possible changes in bank lending behaviour. For instance, [Ivashina and Scharfstein \(2010\)](#) find that the decline in lending during the 2008 Global financial crisis was greater for banks that feared greater drawdown of their credit lines. [Chava and Purnanandam \(2011\)](#) find that banks reduce the loan supply and increase interest rates during crisis period. [Giannetti and Laeven \(2012\)](#) find that lenders reallocated their loan portfolio towards domestic borrowers in view of the increasing uncertainty during the financial crisis.

### **3. Data and Empirical approach**

#### *3.1. Data*

The study employs different sources of data. Data on syndicated loans is obtained from the DealScan database of the Loan Pricing Corporation, while data on bond issuances is drawn from the Thomson Reuters Eikon Fixed Income database. Financial data across different countries are taken from the Worldscope database. The sample of firms considered for the study covers all the firms that have accessed the either the bond market or the syndicated loans at least once in the last two decades. The data employed in the study is for a period of about 4 years from the first quarter of 2017 to the third quarter of 2020. The period chosen covers three years prior to the onset of COVID-19 in order to examine the changes in the key variables of interest during the pandemic relative to the pre-COVID-19 period.

The data on country level responses to COVID-19 are obtained from the Oxford COVID-19 Government Response Tracker (OxCGRT) database ([Hale et al., 2020](#)). The OxCGRT data provides country-level measures on various dimensions of response to the

pandemic including stringency of lockdowns and workplace closures (*Stringency*), containment and health policies (*Containment*), stay-at-home requirements (*Stayathome*), extent of fiscal support (*FiscalSupport*), debt relief to households (*DebtRelief*), closing of workplaces (*WorkPlaceClosing*), and the overall government response (*GovtResponse*). The definitions of these variables are provided in [Table 1](#). These measures had been employed by various other papers that examined the impact of country level responses to the pandemic ([Demir & Danisman, 2020](#); [Demirguc-Kunt, Lokshin, & Torre, 2020](#); [Maurin & Pál, 2020](#)).

The firm-level data is spread across 95 developed and developing countries for which information about loan financing, firm financials, and government response measures are available (see [Table A2](#) for the country-wise coverage of quarterly observations). Similarly, the data is available across 64 countries for bond financing. Overall, the data covers 7,570 firms for syndicated loans and 5,056 firms for bond issuances. The loan and bond tranches are aggregated at the country-year-quarter level. The data has 8,162 country-year-quarter observations for borrowing through syndicated loans and 6,538 observations for bond issuances. Out of the firm-year-quarter observations for the loans data, the Eurozone and the US comprise about 36% of the sample. These two economies also account for about 33% of the sample for the bonds data.

The study also employs data on the extent of business continuity of firms in the face of lockdown measures taken by different countries through work-from-home amenability of the industries. The data on work-from-home amenability is adopted from the measures developed by [Koren and Petó \(2020\)](#). These measures capture different dimensions of work in industries which are relatively more amenable to work-from-home by employees on account on teamwork, customer interface, and physical presence. The measures have been employed to examine the impact of firm-level operational flexibility on asset prices (for instance, [Pagano, Wagner, & Zechner, 2020](#)). The sample employed for estimations involving industry suitability for remote working has 8,223 firms for the loans sample and 5,129 firms for the bond sample, for which both firm-level financial information, debt financing, and the measures of [Koren and Petó \(2020\)](#) are available.

Finally, we also employ data representing the managerial outlook about the perceived ability of their firms to deal with the impact of the crisis. The proxies used in the study correspond to measures of firm-level COVID-19 exposure (*Exposure*) and COVID-19 sentiment (*COVIDSentiment*), developed from textual analysis of earnings call transcripts by Hassan et al. (2020). The sample employed for estimations of the effect of managerial outlook has 3,193 unique firms for the loans data and 2,191 firms for the bonds data after excluding firms for which the measures of Hassan et al. (2020) are not available.

### 3.2. Trends in debt financing: Normal and COVID-19 periods

A comparison of the proportion of firms in our sample that raise debt financing in the second and third quarters in the pre-COVID-19 period (normal period) and in the COVID-19 period (Q2 and Q3 of year 2020) is given in Figure 1. The figure compares the average amount of debt financing for the two periods. The top-panel gives the propensity for loan and bond financing and bottom panel gives the average amount of financing.

We observe an increase in the propensity for loan financing by firms during the COVID-19 period (Q2-2020). For instance, the propensity for financing through loans has increased from an average of 7.1% in the second quarter during the normal period (2017-2019) to 11.4% during the corresponding quarter in 2020. The average loan amount has also significantly jumped in the COVID-19 period. While the average in the normal period is \$88.4 million, it increased to \$104 million in the second quarter of 2020. We do not observe an elevated propensity for loan raising in the third quarter of 2020.

We also find that the propensity for bond issuance has significantly increased during the pandemic period. The average bond issuance propensity has increased from around 8.5% in the second quarter over the normal period (from 2017 to 2019) to about 13.1% in the second quarter of 2020, an increase of 4.6 percentage points. The propensity in the third quarter during the normal period is 8.6%, which increases to 10.7% in the third quarter of 2020, an increase of over 2 percentage points. We also observe an increase in the average amount of bond issuance in the COVID-19 period relative to the normal period. For instance, the the average bond issuance has increased from about \$169 million

in the normal period to about \$289 million during the second quarter of 2020, an increase of about 71%. The jump in the propensity and the amount of bond issuance possibly suggest that the demand for credit was usually higher in the crisis period.

While an increase in bond issuance during the COVID-19 period has been recorded for the US in prior studies (for instance, [Halling et al., 2020](#)), we find the increase in the bond issuance is also true for other advanced economies and emerging markets. For instance, the propensity for bond issuance has on an average increased by about 11.5% for the non-US firms during the second quarter of 2020. We also observe a variation in the propensity for bond financing between the large and small firms for the COVID-19 period. The propensity of large firms (with above median assets) to issue bonds rises from 12.5% in the second quarter during the pre-COVID-19 period to 20.4% in the second quarter of 2020. In contrast, the average propensity to issue bonds is substantially lower for small firms (with below median assets) at 4.3% in the second quarter of the normal period, and falls to 3.4% in the second quarter of 2020.

### 3.3. Empirical approach

In this section, we present the empirical approach employed to investigate the association between the pandemic and debt financing. Specifically, we investigate the influence of government responses to COVID-19, work-from-home amenability of industries, and the managerial perceptions towards COVID-19 on the bond and loan financing of firms.

The first empirical specification examines how containment and mitigation measures taken by governments in the second and third quarters of 2020 impact loan financing and bond issuance by firms. The estimation equation is as follows:

$$\begin{aligned}
 Issuance_{it} = & \alpha_0 + \alpha_1 CntryResp_{kt} + \alpha_2(Q2COVID \times CntryResp_{kt}) \\
 & + \alpha_3(Q3COVID \times CntryResp_{kt}) + \alpha_4(\mu_i \times Year_y) + \tau_t + \epsilon_{it}
 \end{aligned} \tag{1}$$

The dependent variable  $Issuance_{it}$  takes a value of 1 if firm  $i$  has raised loan financing during the quarter  $t$ . In an analogous empirical specification employed for bond issuance, the variable takes a value of 1 for a firm that has issued bonds in the quarter.

The variable  $CntryResp_{kt}$  represents one of the specific measures taken in response to COVID-19 in the country  $k$  where firm  $i$  is located. These measures include, in different specifications, *Stringency*, *Containment*, *Stayathome*, *FiscalSupport*, *DebtRelief*, *WorkPlaceClosing*, and *GovtResponse* (the response variables are as defined in [Table 1](#)). The coefficient  $\alpha_2$  of the interaction term  $CntryResp_{kt} \times Q2COVID$  represents the incremental effect of the government response on debt financing during the second quarter of 2020. The coefficient  $\alpha_3$  has an analogous explanation for the third quarter of 2020.

$\mu_i \times Year_y$  captures any time variant yearly effects at the firm-level. These interactive fixed effects subsume any observable and unobservable firm-level factors that could contribute to the debt issuance decision of firm  $i$  in year  $y$ . These interactive dummies also capture time-varying fixed effects at the higher levels of aggregation including industry and country level.  $\tau_t$  represents the quarter fixed effects to control for any seasonality in the propensity to avail debt financing. Standard errors are clustered at the firm and year levels (as suggested by [Petersen, 2009](#)). The estimation period is from the first quarter of 2017 until the third quarter of 2020. We also examine the impact of government responses to COVID-19 on the amount of debt financing by firms.

The second specification examines how the variation in the amenability of industries for business continuity through Work-from-home (WFH) impacts debt financing during the COVID-19 crisis. The industry-specific measures of WFH employed in the study are drawn from [Koren and Pető \(2020\)](#).

$$\begin{aligned}
 Issuance_{it} = & \beta_0 + \beta_1 WFH\_Jobs_{jt} + \beta_2(Q2COVID \times WFH\_Jobs_{jt}) \\
 & + \beta_3(Q3COVID \times WFH\_Jobs_{jt}) + \beta_4(\mu_i \times Year_y) + \tau_t + \epsilon_{it}
 \end{aligned} \tag{2}$$

The variable  $WFH\_Jobs_{jt}$  represents one of the three dimensions of WFH amenability of industries, *Teamwork*, *PhysicalPresence*, and *CustomerInteraction* in industry  $j$  in quarter  $t$  ([Koren & Pető, 2020](#)). The coefficient  $\beta_2$  of the interaction term  $WFH\_Jobs_{jt} \times Q2COVID$  represents the effect of the indicators of WFH amenability at the *industry level* on firm level debt financing during the second quarter of 2020 and

analogously for  $\beta_3$  in the third quarter of 2020.

In the final specification, we employ firm-level measures of managerial sentiment and COVID-19 exposure to examine how firm-specific vulnerability impacts debt raising. The measures of managerial sentiment and COVID-19 exposure are drawn from [Hassan et al. \(2020\)](#) who employ textual analysis of quarterly earning calls of firms.

$$\begin{aligned} Issuance_{it} = & \gamma_0 + \gamma_1 COVIDSentiment_{it} + \gamma_2(Q2COVID \times COVIDSentiment_{it}) \\ & + \gamma_3(Q3COVID \times COVIDSentiment_{it}) + \gamma_4(\mu_i \times Year_y) + \tau_t + \epsilon_{it} \end{aligned} \quad (3)$$

The variable  $COVIDSentiment_{it}$  is an index of the net sentiment (positive sentiment minus negative sentiment) representing the subjective outlook of the management of firm  $i$  towards the impact of COVID-19 based on the earnings calls during quarter  $t$ .

The coefficient  $\gamma_2$  of the interaction term  $Sentiment_{it} \times Q2COVID_{19t}$  represents the effect of the management sentiment at the firm level on debt financing during the second quarter of 2020 and analogously for  $\gamma_3$  in the third quarter of 2020. In an alternative specification, we employ a measure of COVID-19 exposure ( $Exposure_{it}$ ), which represents the perception of the management about the exposure of firm  $i$  to COVID-19 as the explanatory variable.

## 4. Findings on the propensity for debt financing

### 4.1. Government response to COVID-19 and propensity for debt financing

The results of the investigation of the variation in the loan financing of firms on account of the differences in the crisis impact induced by the country-level response to COVID-19 are given in [Table 3](#). The results for seven country-level responses *Stringency*, *Containment*, *Stayathome*, *WorkPlaceClosing*, *DebtRelief*, *DebtRelief*, *FiscalSupport*, and *GovtResponse* are shown in columns (1)-(7) respectively.

The interaction terms for the country-level responses and the binary indicator for

COVID-19 during the second quarter of 2020 suggest that greater restrictions on people mobility and work is associated with a greater propensity to raise incremental debt financing by firms relative to the normal quarter. For instance, a one standard deviation increase in *Stringency* of the lockdown adopted in a country leads to a 4.9 percentage points increase in the propensity for debt financing among non-financial firms across countries in the second quarter of 2020 (coefficient of  $Q2\_COVID19 \times Stringency$ ). This is a 66% increase compared to the average propensity for loan financing (7.4%) in a normal quarter.

Other measures of restrictions on peoples' mobility, *Containment*, *Stayathome*, and *WorkPlaceClosing* also indicate an increase in the propensity for loan financing by firms. These results show that a greater degree of movement restrictions in a country has prompted firms to raise additional financing, a likely attempt by firms to cope with the business disruptions and accompanying cash flow concerns. Results for more direct measures of business disruption brought about COVID-19 containment measures, *Stayathome* (1.43% increase in likelihood of loan financing for a 1 standard deviation increase) and *WorkPlaceClosing* (2.94% increase in likelihood of loan financing for a 1 standard deviation increase), confirm the direction of the impact on firm-level financing obtained with more general proxies of people mobility restrictions.

Country-level fiscal support measures taken during the COVID-19 crisis is associated with lower levels of debt financing. For instance, a one standard deviation increase in the *DebtRelief* index (representing greater debt relief for households) is associated with a 1.8 percentage points lower dependence on debt financing of firms relative to normal quarters. Similar negative association exists between *FiscalSupport* and debt issuance by firms. The negative association between the fiscal support measures and fund raising by firms implies that in countries with greater fiscal support, firms are less likely to raise precautionary financing to deal with business disruptions. Overall, the results document the impact of government responses to the COVID-19 pandemic on the financing of firms around the world.

We extend the investigation of the impact of COVID-19 response on debt financing



of firms through an analogous estimation of bond financing. The results are provided in [Table 4](#). Noticeably, we find that the general measures of COVID-19 containment, does not lead to greater bond issuance in the market. Instead, we find that the propensity to raise bond financing has declined. For instance, one standard deviation increase in the *Stringency* index is associated with 0.44 percentage point decline in the propensity for bond financing in the second quarter of 2020. The contrast between the impact of government responses to COVID-19 on loan and bond financing could be explained by the likely higher credit rating of the bond issuers ([Denis & Mihov, 2003](#)). Given the greater financial flexibility of bond issuers, they are less likely to require additional liquidity to survive the economic shock induced by the crisis. Then, what explains the decline in their bond issuance propensity? Firms with greater financial flexibility often raise external financing for their strategic investment needs. However, with a deterioration in the investment opportunities during the initial phase of the pandemic, such firms are less likely to raise capital.

Similar to the case of the loan financing, we find that bond financing during the peak of the crisis is declining with greater fiscal support. For instance, a one standard deviation increase in *DebtRelief* is associated with 0.84 percentage point lower propensity for bond issuance. The results are consistent with *FiscalSupport* as the proxy of government relief. Overall, the results on the association between debt financing, COVID-19 containment measures documented as above, establishes clear channel through which pandemic can significantly impact the financing plans of firms.

#### 4.2. *COVID-19, work-from-home amenability and industry-level differences in debt financing*

The results of the estimation of the impact of the ability of firms to continue its operations through work-from-home arrangements during the COVID-19 crisis on debt financing is provided in [Table 5](#). The indices of the extent to which sectors require physical presence developed by [Koren and Pető \(2020\)](#) are interacted with *Q2COVID* and *Q3COVID*.

We find that firms in industries where the physical presence of employees is required

has a lower propensity to raise debt financing in the second quarter of 2020, the early phase of the COVID-19 crisis. It is likely that the business disruption has temporarily lowered the financing requirements of such firms. In contrast, in the immediately following quarter we find that the firms with a higher degree of operational disruptions have a greater propensity to raise funding through loans and bonds. The contrast in the impact between the two quarters could be explained by the impact of liquidity strain on firms with less amenability from operational continuity with work-from-home arrangements.

Earlier research on COVID-19 also finds that firms in industries which are more suitable to work-from-home arrangements have lower impact on their equity market value (see for instance, [Bai et al., 2020](#)). The lower adverse impact on their market value has been linked to the lower degree of discontinuity in their operations. Our results complement their findings by documenting fund raising of firms that vary by their remote working amenability during the crisis.

#### *4.3. Management beliefs about COVID-19 and debt financing*

In this section, we estimate how the debt financing propensity is related to the exposure of firms to COVID-19 and the outlook of the management towards the likely impact of COVID-19. We employ the two text-based measures of COVID-19 exposure and managerial sentiment developed by [Hassan et al. \(2020\)](#) to examine the impact. The results for the COVID-19 exposure and management beliefs about COVID-19 are presented in [Table 6](#).

We observe that a higher perception of COVID-19 exposure is associated with a greater propensity for raising finances through loan and bonds in both the second and third quarters of 2020. For instance, in the second quarter of 2020, a one unit increase in the perceived exposure to COVID-19 (on a scale of 0-13.4) is associated with an increase in the propensity for debt financing by 1.2% and 1.3% percentage points for loans and bonds respectively. The finding imply that firm-level exposure as assessed by the management about the immediate impact of COVID-19 has been followed up with incremental financing, as a precautionary measure to deal with likely distress.

The impact of the sentiment of the management about the likely fallout of COVID-19 on the firm is largely negative for loan and bond financing. This could be expected as a subjective assessment of lower impact of the pandemic on their future earnings would lead to lower financing. The exception is in the second quarter of 2020 for bond financing. The positive association between COVID-19 sentiment and the additional debt financing could be an outcome of the inclination of managers with positive sentiment to raise resources, so as to opportunistically take advantage of undervalued assets in a low-interest rate environment. The significant influence of the managerial sentiment about the likely impact of COVID-19 and the consequent recovery on their future cash flows and investment needs show that managerial expectations have a significant role in the firm-level response. Our findings are in line with that of [Campello et al. \(2010\)](#), who document that the subjective outlook of CFOs had strong role in the firm-level financing and payout decisions during the 2008 Global Financial Crisis.

#### *4.4. Amount of debt financing and impact of government response to COVID-19*

The impact of the country level responses on the amount of loan and bond issuance is given in [Table 7](#) for loans and in [Table 8](#) for bonds. Firms raised greater amounts of loan financing in countries with higher stringency and containment measures in both the second and third quarters of 2020 ([Table 7](#)). The finding of larger loan sizes, together with higher propensity for loan financing as documented earlier (see [Table 3](#)), shows that firms increased their access to bank loans in the face of operational disruptions arising on account of COVID-19. The greater reliance on bank loans is likely to be driven by precautionary motives in the second quarter, and for survival and investment motives in the subsequent quarter. The results on the amount of bond financing raised by firms is shown in [Table 8](#). The results suggest that firms located in countries with higher stringency and containment measures obtain greater amount of bond financing in the later stages of the COVID-19 pandemic in the third quarter of 2020.

Taken together, the results suggest that firms obtained larger amounts of financing

from banks initially, rather than from the bond markets, in the second quarter of 2020. Whereas, in the third quarter of 2020, the ticket sizes for both loans and bonds were relatively larger in countries with higher stringency and containment. The delayed reliance on bond financing could be attributed to the sharp rise in bond yields during the onset of the pandemic, which was later corrected with the liquidity support measures announced including the bond purchase program in the US (O’Hara & Zhou, 2020). By the third quarter of 2020, the amounts of loans and bonds rose together in countries with higher stringency and containment.

#### *4.5. Robustness of the baseline findings to Quantitative Easing (QE)*

We test the robustness of our main findings to the inclusion of QE operations carried out by the major central banks. As discussed earlier, interventions by the US Federal Reserve in the form of large scale asset purchases helped to reduce bond yields (“Global corporate bond issuance: What role for US quantitative easing?”, 2016) and improve liquidity in bond markets (Kargar et al., 2020). The results of the estimations for the propensity to issue loans and bonds are shown in Table 9 and Table 10 respectively.

The results for loan financing after accounting for central bank liquidity are largely consistent with our baseline results for stringency, containment and overall government response measures. The results for stay-at-home requirements and workplace closings, are consistent for Q2 but weaker for the third quarter. The relationship between country responses and propensity for bond financing is broadly similar to the baseline findings for stringency and containment measures. However, the results are weaker for stay-at-home requirements, debt relief for households and fiscal support, suggesting a positive role of the infusion of central bank liquidity.

#### *4.6. Changes in the end use of debt financing during COVID-19*

While our emphasis has been to understand how the debt financing decision of firms was affected by COVID-19, it is interesting to understand the motive of the financing decisions. Is the financing decision taken to invest in growth opportunities or is it tilted

towards precautionary motives such as liquidity and refinancing?

To further understand the purpose of tapping into debt markets, we explore the declared primary purpose of the syndicated loans obtained by the firms.<sup>4</sup> The trend analysis shown in [Table A1](#) suggests that liquidity and refinancing motives took precedence over growth motives in the second quarter of 2020. The reported growth motives (sum of Acquisition and Capex categories) declined from 35.2% in the first quarter of 2020 to 25.5% in the second quarter. Relative to the same quarter in 2019, it fell from 37% in the second quarter of 2019 to 25.5% in the second quarter of 2020. In comparison, the liquidity and refinancing motives (sum of Operations and Refinancing categories) increased from 64.6% in the first quarter of 2020 to 74.1% in the second quarter of 2020. On a quarter-on-quarter basis, fund raising for the same motives increased from 62.9% in the second quarter of 2019 to 74.1% in the second quarter of 2020.

However, we observe a revival in the growth motives in the third quarter of 2020. This suggest a pickup in the investment motives of firms as the uncertainty surrounding the COVID-19 crisis subsides with more information on the characteristics of the pandemic as well as advances in vaccinations for containing the spread of the virus. The demand for fund raising targeted at acquisitions in the third quarter of 2020 suggests the rise in the proportion of firms with sound balance sheet to opportunistically acquire weaker and undervalued assets.

## 5. Conclusion

The COVID-19 pandemic has severely impacted firms around the world. As a response to the unprecedented crisis, firms have turned to greater amount of fund raising so as to support the sudden jump in their need for liquidity. We examine how the firms worldwide vary on their reliance on debt financing through syndicated loans and bond issuance by investigating factors that are uniquely associated with the pandemic. Specifically, the paper studies the role of the variation in country-level responses to the COVID-19 crisis,

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<sup>4</sup>As data of end-use is not reported in detail for bonds, we restrict the analysis to syndicated loans.

remote working amenability of industries, and firm-level outlook on the impact of the crisis to explain the variation in debt financing of firms. We employ a matched bond-loan-firm data of firms across the developing and advanced economies in the study.

The key findings of the paper and their implications are as follows. First, we find that the stringency of the lockdown adopted by countries had a significant impact on the extent of debt financing by firms during the crisis. The positive association between stringency and debt financing suggests that firms in countries that adopted more stringent lockdowns so as to contain the pandemic had to increasingly worry about its impact on liquidity requirements of firms and consequently raise greater amount of debt relative to pre-pandemic periods. Our results are also consistent for other measures of the degree of restrictions on people mobility such as the degree of workplace closures across countries. Broadly, the findings imply that the extent of liquidity needs of firms had been strongly associated the degree of containment measures adopted by governments. Second, we document that the propensity for financing through syndicated loans is negatively linked to the degree of fiscal support measures taken by various countries. The explanatory role of the fiscal support measures for debt financing of firms during the pandemic could be on account of the indirect positive role of the former in dampening the pandemic-induced demand shock.

Third, the research documents significant heterogeneity in the level of debt financing by firms brought about by the difference across industries in organising their work remotely. We find that firms within industries which have greater suitability for work-from-home arrangements have lower propensity for debt raising during the pandemic. The role of the remote working amenability in offering an explanation for debt funding is indicative of the increased liquidity needs of firms with lower operating flexibility during the pandemic.

Finally, in addition to the role of the country-level measures and amenability of various industries for remote working, the paper also documents significant variation in debt financing on account firm-level exposure to COVID-19 and the subjective managerial outlook towards the ability of their firm meet the crisis. We find that the extent of

debt financing increases with firm-level exposure to COVID-19, indicative of the greater preparedness of the management of such firms to deal with the likely fallout of the crisis on their firms. On the other hand, the propensity for debt financing reduces in the sentiment of the management. The negative association between management sentiment and debt financing propensity suggests that even during a crisis, the personal beliefs of managers have a strong role in explaining their financing decisions.

Overall, the paper documents several important channels at the country, industry and firm-level that emerge as a consequence of the pandemic and its impact on the debt financing of firms around the world. The research complements those studies that investigate the fallout of various crises including the current pandemic on firm-level financing by unearthing the role of certain pandemic specific channels. Future research could extend the paper by investigating the impact of the firm-level COVID-19 exposure and the managerial sentiment on the financing costs and the other features of the debt financing raised by firms during the pandemic.

## References

- Acharya, V. V., & Steffen, S. (2020). The risk of being a fallen angel and the corporate dash for cash in the midst of covid. *The Review of Corporate Finance Studies*, 9(3), 430–471.
- Almeida, H., Campello, M., & Weisbach, M. S. (2004). The cash flow sensitivity of cash. *The Journal of Finance*, 59(4), 1777–1804.
- Arteta, C., & Hale, G. (2008). Sovereign debt crises and credit to the private sector. *Journal of International Economics*, 74(1), 53–69.
- Bai, J. J., Brynjolfsson, E., Jin, W., Steffen, S., & Wan, C. (2020). The future of work: Work from home preparedness and firm resilience during the covid-19 pandemic. Available at SSRN: <https://ssrn.com/abstract=3616893>.
- Baker, S. R., Bloom, N., Davis, S. J., & Terry, S. J. (2020). Covid-induced economic uncertainty. *National Bureau of Economic Research (w26983)*.
- Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics*, 97(3), 470–487.
- Chava, S., & Purnanandam, A. (2011). The effect of banking crisis on bank-dependent borrowers. *Journal of Financial Economics*, 99(1), 116–135.
- Demir, E., & Danisman, G. (2020). Banking Sector Reactions to the COVID-19: The Role of Bank-Specific Factors and Government Policy Responses. Available at SSRN: <https://ssrn.com/abstract=3628261>.
- Demirguc-Kunt, A., Lokshin, M., & Torre, I. (2020). The sooner, the better: The early economic impact of non-pharmaceutical interventions during the COVID-19 pandemic. *World Bank Policy Research Working Paper (9257)*.
- Denis, D. J., & Mihov, V. T. (2003). The choice among bank debt, non-bank private debt, and public debt: Evidence from new corporate borrowings. *Journal of Financial Economics*, 70(1), 3–28.
- Denis, D. J., & Sibilkov, V. (2010). Financial constraints, investment, and the value of cash holdings. *The Review of Financial Studies*, 23(1), 247–269.



- Dick-Nielsen, J., Feldhütter, P., & Lando, D. (2012). Corporate bond liquidity before and after the onset of the subprime crisis. *Journal of Financial Economics*, *103*(3), 471–492.
- Dingel, J. I., & Neiman, B. (2020). How many jobs can be done at home? *Journal of Public Economics*, *189*, 104235.
- Falato, A., Goldstein, I., & Hortaçsu, A. (2020). Financial fragility in the COVID-19 crisis: The case of investment funds in corporate bond markets. *National Bureau of Economic Research (27559)*.
- Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, *61*(4), 1957–1990.
- Francis, J. L., Aykut, D., & Tereanu, E. (2014). The cost of private debt over the credit cycle. *Journal of International Money and Finance*, *41*, 146–181.
- Giannetti, M., & Laeven, L. (2012). The flight home effect: Evidence from the syndicated loan market during financial crises. *Journal of Financial Economics*, *104*(1), 23–43.
- Global corporate bond issuance: What role for us quantitative easing? (2016). *Journal of International Money and Finance*, *60*, 114 - 150.
- Goel, T., Garralda, J. M. S., et al. (2020). Bonds and syndicated loans during the Covid-19 crisis: decoupled again? *Bank for International Settlements Bulletin (29)*.
- Gormley, T. A., & Matsu, D. A. (2014). Common errors: How to (and not to) control for unobserved heterogeneity. *The Review of Financial Studies*, *27*(2), 617–661.
- Haddad, V., Moreira, A., & Muir, T. (2020). When selling becomes viral: Disruptions in debt markets in the COVID-19 crisis and the Fed’s response. *National Bureau of Economic Research (w27168)*.
- Hale, T., Petherick, A., Phillips, T., & Webster, S. (2020). Variation in government responses to covid-19. *Blavatnik School of Government Working Paper (31)*.
- Halling, M., Yu, J., & Zechner, J. (2020). How Did COVID-19 Affect Firms’ Access to Public Capital Markets? *The Review of Corporate Finance Studies*, *9*(3), 501–533.
- Harford, J., Klasa, S., & Maxwell, W. F. (2014). Refinancing risk and cash holdings. *The Journal of Finance*, *69*(3), 975–1012.
- Hassan, T. A., Hollander, S., van Lent, L., & Tahoun, A. (2020). Firm-level exposure

- to epidemic diseases: Covid-19, SARS, and H1N1. *National Bureau of Economic Research (w26971)*.
- Ivashina, V., & Scharfstein, D. (2010). Bank lending during the financial crisis of 2008. *Journal of Financial Economics*, 97(3), 319–338.
- Kargar, M., Lester, B., Lindsay, D., Liu, S., Weill, P.-O., & Zúñiga, D. (2020). Corporate bond liquidity during the COVID-19 crisis. *National Bureau of Economic Research (w27355)*.
- Koren, M., & Petó, R. (2020). Business disruptions from social distancing. *PloS ONE*, 15(9), e0239113.
- Li, L., Strahan, P. E., & Zhang, S. (2020). Banks as lenders of first resort: Evidence from the COVID-19 crisis. *The Review of Corporate Finance Studies*, 9(3), 472–500.
- Maurin, L., & Pál, R. (2020). Investment vs debt trade-offs in the post-COVID-19 European economy. *EIB Working Papers (2020/09)*.
- O’Hara, M., & Zhou, X. A. (2020). Anatomy of a liquidity crisis: Corporate bonds in the COVID-19 crisis. *Available at SSRN: <https://ssrn.com/abstract=3615155>*.
- Pagano, M., Wagner, C., & Zechner, J. (2020). Disaster resilience and asset prices. *arXiv preprint arXiv:2005.08929*.
- Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *The Review of Financial Studies*, 22(1), 435–480.

Figure 1: Trends in debt financing

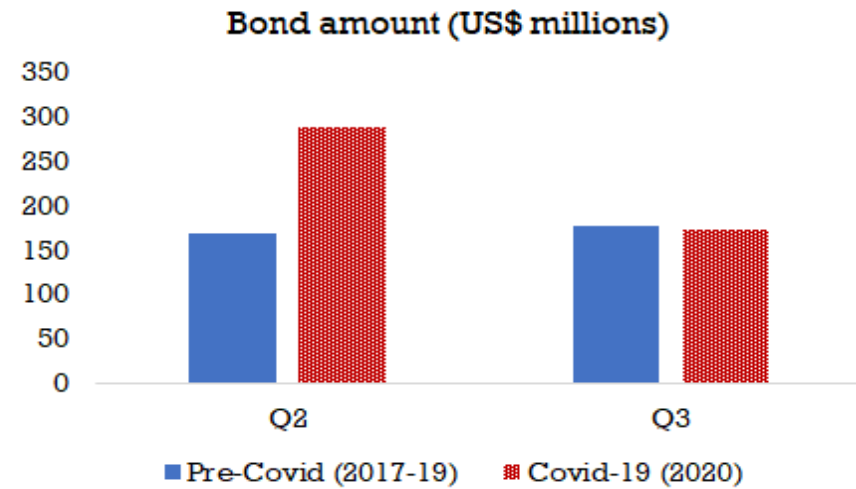
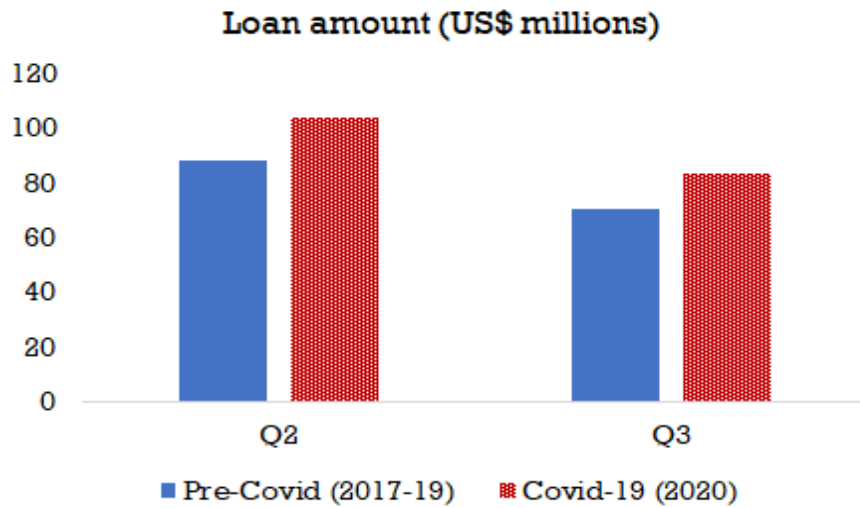
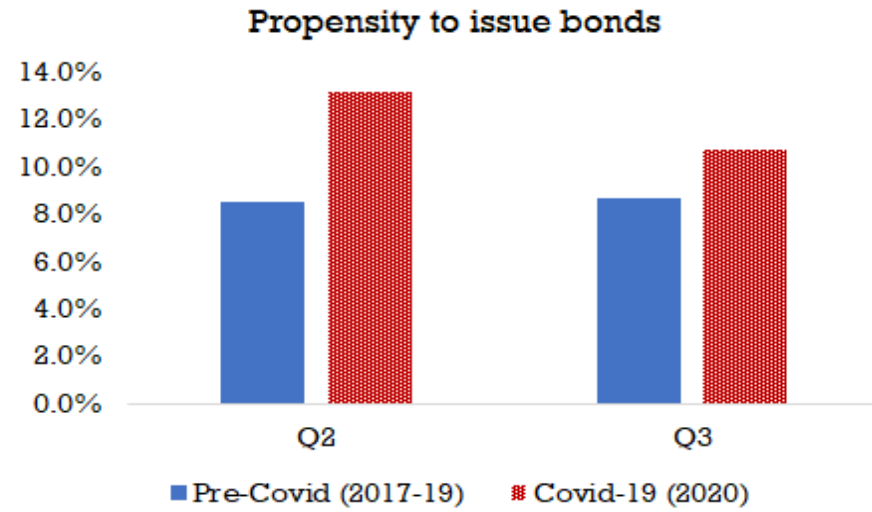
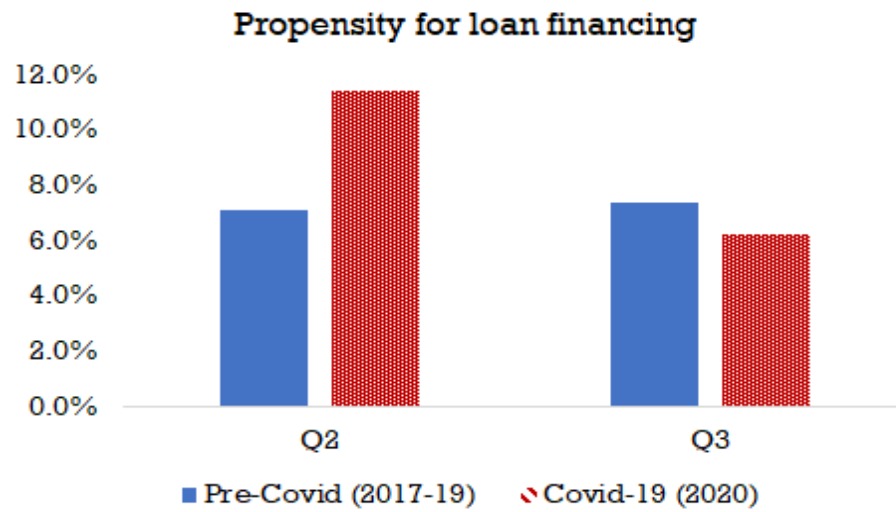


Table 1: **Variable description & data sources**

Variable	Definition and construction	Data source
<i>LoanPropensity</i>	Takes value of 1 if the firm has obtained syndicated loan in a quarter and 0 otherwise.	LPC DealScan and Worldscope
<i>BondPropensity</i>	Takes value of 1 if the firm has issued a bond in a quarter and 0 otherwise.	Refinitiv Fixed Income database and Worldscope
<i>LogLoanAmount</i>	Natural logarithm of the total loan amount obtained by a firm in a quarter in million US dollars.	LPC DealScan and Worldscope
<i>LogBondAmount</i>	Natural logarithm of the total principal amount of the bond issued by the firm in a quarter in million US dollars.	Refinitiv Fixed Income database and Worldscope
<i>Stringency</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the stringency of government measures, based on indicators such as stay-at-home requirements, workplace closures, and travel restrictions.	Oxford COVID-19 Government Response Tracker (OxCGRT)
<i>Containment</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the containment and health policies of the government.	OxCGRT
<i>Stayathome</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the stay-at-home requirements by the government as a responses to the pandemic.	OxCGRT
<i>FiscalSupport</i>	Measure computed by <a href="#">Hale et al. (2020)</a> that captures the amount of fiscal support provided by the government in billions of US dollar.	OxCGRT
<i>DebtRelief</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the extent of debt relief provided to households by the government.	OxCGRT
<i>WorkPlaceClosing</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the extent of closing of workplaces by the government.	OxCGRT
<i>GovtResponse</i>	Index computed by <a href="#">Hale et al. (2020)</a> that captures the overall containment, health and economic support provided by the government in responses to the pandemic.	OxCGRT
<i>Teamwork</i>	An index that captures the reliance on internal communication among team members in the organization.	<a href="#">Koren and Petó (2020)</a>
<i>CustomerInteraction</i>	An index that captures the reliance of an industry on external communication with customers.	<a href="#">Koren and Petó (2020)</a>
<i>PhysicalPresence</i>	An index that captures the need for physical proximity in the workplace.	<a href="#">Koren and Petó (2020)</a>
<i>COVID_exposure</i>	Index computed by <a href="#">Hassan et al. (2020)</a> from earnings call transcripts to measure the frequency of occurrence of the pandemic related terms and standardized to account for the transcript length	<a href="http://www.firmlevelrisk.com">www.firmlevelrisk.com</a>

*Continued on next page*

Table 1 – *Continued from previous page*

Variables	Definition and Construction	Data Source
<i>COVID_sentiment</i>	Index computed by <a href="#">Hassan et al. (2020)</a> from earnings call transcripts to measure the managerial outlook on the likely impact of COVID-19. It reflects the extent of positivity expressed by the management during the call.	Can be accessed from <a href="http://www.firmlevelrisk.com">www.firmlevelrisk.com</a>

Table 2: **Summary statistics**

	Mean	Median	Min	Max
Panel A: Country-level response to COVID Q1 to Q3 2020				
<i>Stringency</i>	50.74	59.37	6.03	92.62
<i>Containment</i>	53.11	62.03	7.11	90.22
<i>Stayathome</i>	1.78	2.00	0.00	3.00
<i>FiscalSupport</i>	400.00	20.00	0.00	2150.00
<i>DebtRelief</i>	1.30	1.00	0.00	2.00
<i>WorkPlaceClosing</i>	2.34	3.00	0.00	3.00
<i>GovtResponse</i>	51.58	56.46	6.01	85.92
Panel B: Work from home amenability				
<i>Teamwork</i>	22.52	21.00	6.00	50.00
<i>CustomerInteraction</i>	14.44	8.00	3.00	90.00
<i>PhysicalPresence</i>	14.51	11.00	0.00	66.00
Panel C: COVID exposure and outlook				
<i>COVID_exposure</i>	1.29	0.93	0.00	13.35
<i>COVID_sentiment</i>	-0.25	-0.09	-6.38	3.19

The definition of each of the variables is given in [Table 1](#).

Table 3: Country responses to COVID-19 and propensity for loan financing by firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	-0.083*** (0.000)						
<i>Q2_COVID19</i> × <i>Stringency</i>	0.243*** (0.003)						
<i>Q3_COVID19</i> × <i>Stringency</i>	0.152*** (0.003)						
<i>Containment</i>		-0.062*** (0.001)					
<i>Q2_COVID19</i> × <i>Containment</i>		0.209*** (0.003)					
<i>Q3_COVID19</i> × <i>Containment</i>		0.132*** (0.003)					
<i>Stayathome</i>			-0.017*** (0.001)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			0.021*** (0.001)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			0.013*** (0.001)				
<i>WorkPlaceClosing</i>				0.000 (0.000)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				0.033*** (0.001)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				0.016*** (0.001)			
<i>DebtRelief</i>					0.013*** (0.001)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					-0.030*** (0.001)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					0.006** (0.001)		
<i>FiscalSupport</i>						-0.001*** (0.000)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						-0.001*** (0.000)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						0.001*** (0.000)	
<i>GovtResponse</i>							-0.076*** (0.001)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							0.262*** (0.003)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							0.164*** (0.004)
<i>Q2_COVID19</i>	-0.086*** (0.003)	-0.076*** (0.003)	0.003 (0.004)	-0.045*** (0.004)	0.076*** (0.006)	0.058*** (0.005)	-0.103*** (0.003)
<i>Q3_COVID19</i>	-0.076*** (0.001)	-0.077*** (0.001)	-0.038*** (0.002)	-0.050*** (0.002)	-0.031*** (0.003)	-0.034*** (0.001)	-0.091*** (0.001)
<i>Constant</i>	0.079*** (0.000)	0.079*** (0.000)	0.080*** (0.000)	0.076*** (0.000)	0.073*** (0.000)	0.078*** (0.000)	0.079*** (0.000)
<i>No.obs.</i>	106,324	106,324	106,324	106,324	106,324	106,324	106,324
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.031	0.031	0.031	0.031	0.031	0.031	0.031

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the syndicated loan markets and 0 otherwise. The definitions of the variables are given in Table 1. Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

Table 4: Country responses to COVID-19 and propensity for bond financing by firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	0.083*** (0.001)						
<i>Q2_COVID19</i> × <i>Stringency</i>	-0.022*** (0.003)						
<i>Q3_COVID19</i> × <i>Stringency</i>	-0.127*** (0.001)						
<i>Containment</i>		0.075*** (0.001)					
<i>Q2_COVID19</i> × <i>Containment</i>		-0.031*** (0.002)					
<i>Q3_COVID19</i> × <i>Containment</i>		-0.130*** (0.002)					
<i>Stayathome</i>			0.010*** (0.000)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			-0.002** (0.001)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			-0.010*** (0.000)				
<i>WorkPlaceClosing</i>				0.015*** (0.000)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				0.008*** (0.001)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				-0.012*** (0.000)			
<i>DebtRelief</i>					-0.018*** (0.000)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					-0.014*** (0.001)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					0.023*** (0.000)		
<i>FiscalSupport</i>						-0.001*** (0.000)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						0.001*** (0.000)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						0.002*** (0.000)	
<i>GovtResponse</i>							0.085*** (0.001)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							-0.013** (0.003)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							-0.166*** (0.002)
<i>Q2_COVID19</i>	0.004** (0.001)	0.015*** (0.001)	0.025*** (0.002)	0.001 (0.001)	0.050*** (0.004)	0.013** (0.002)	-0.003* (0.001)
<i>Q3_COVID19</i>	0.046*** (0.005)	0.055*** (0.005)	0.016* (0.005)	0.028** (0.005)	-0.028** (0.006)	-0.020** (0.006)	0.071*** (0.004)
<i>Constant</i>	0.084*** (0.001)	0.084*** (0.001)	0.086*** (0.000)	0.082*** (0.000)	0.092*** (0.000)	0.091*** (0.000)	0.084*** (0.001)
<i>No.obs.</i>	72,734	72,734	72,734	72,734	72,734	72,734	72,734
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.22	0.22	0.22	0.22	0.22	0.22	0.22

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the bond markets and 0 otherwise. The definitions of the variables are given in Table 1. Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.



Table 5: **Work-from-Home amenability during COVID-19 and the propensity for debt financing by firms**

	Loans			Bonds		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Q2_COVID19</i> × <i>Teamwork</i>	-0.092*** (0.002)			0.108*** (0.004)		
<i>Q3_COVID19</i> × <i>Teamwork</i>	0.015*** (0.002)			0.118*** (0.003)		
<i>Q2_COVID19</i> × <i>PhysicalPresence</i>		-0.058*** (0.002)			-0.010*** (0.001)	
<i>Q3_COVID19</i> × <i>PhysicalPresence</i>		0.000 (0.000)			0.054*** (0.001)	
<i>Q2_COVID19</i> × <i>CustomerInteraction</i>			0.113*** (0.001)			0.027*** (0.001)
<i>Q3_COVID19</i> × <i>CustomerInteraction</i>			-0.007** (0.001)			-0.016*** (0.000)
<i>Q2_COVID19</i>	0.090*** (0.004)	0.076*** (0.004)	0.050*** (0.004)	0.050*** (0.002)	0.076*** (0.003)	0.071*** (0.003)
<i>Q3_COVID19</i>	0.019*** (0.001)	0.023*** (0.001)	0.024*** (0.001)	0.024*** (0.002)	0.043*** (0.002)	0.053*** (0.002)
<i>Constant</i>	0.067*** (0.000)	0.067*** (0.000)	0.067*** (0.000)	0.078*** (0.000)	0.078*** (0.000)	0.078*** (0.000)
<i>No.obs.</i>	124,672	124,672	124,672	78,444	78,444	78,444
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj-R<sup>2</sup></i>	0.031	0.031	0.031	0.197	0.197	0.197

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has raised debt financing from either the syndicated loan markets (columns (1)-(3)) or bond markets (columns (4)-(6)) and 0 otherwise. The definitions of the variables are given in [Table 1](#). Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

Table 6: Firm-level COVID-19 exposure & sentiment and the propensity for debt financing by firms

	Loans		Bonds	
	(1)	(2)	(3)	(4)
<i>COVID_exposure</i>	-0.025*** (0.000)		-0.027*** (0.001)	
<i>Q2_COVID19</i> × <i>COVID_exposure</i>	0.012*** (0.000)		0.013*** (0.001)	
<i>Q3_COVID19</i> × <i>COVID_exposure</i>	0.030*** (0.001)		0.047*** (0.001)	
<i>COVID_sentiment</i>		0.042*** (0.000)		-0.005 (0.003)
<i>Q2_COVID19</i> × <i>COVID_sentiment</i>		-0.061*** (0.001)		0.022*** (0.003)
<i>Q3_COVID19</i> × <i>COVID_sentiment</i>		-0.037*** (0.003)		-0.048*** (0.004)
<i>Q2_COVID19</i>	0.045** (0.010)	0.019 (0.010)	0.091*** (0.004)	0.081*** (0.005)
<i>Q3_COVID19</i>	-0.050*** (0.001)	-0.035*** (0.003)	-0.046** (0.009)	-0.020* (0.008)
<i>Constant</i>	0.107*** (0.001)	0.106*** (0.001)	0.090*** (0.000)	0.088*** (0.000)
<i>No.obs.</i>	35,444	35,444	25,412	25,412
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	-0.009	-0.01	0.121	0.121

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has raised debt financing from either the syndicated loan markets (columns (1)-(2)) or bond markets (columns (3)-(4)) and 0 otherwise. Variable definitions are shown in [Table 1](#). Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

Table 7: Country responses to COVID-19 and amount of loan financing by firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	-0.021*** (0.000)						
<i>Q2_COVID19</i> × <i>Stringency</i>	0.018*** (0.000)						
<i>Q3_COVID19</i> × <i>Stringency</i>	0.021*** (0.000)						
<i>Containment</i>		-0.020*** (0.000)					
<i>Q2_COVID19</i> × <i>Containment</i>		0.016*** (0.000)					
<i>Q3_COVID19</i> × <i>Containment</i>		0.020*** (0.000)					
<i>Stayathome</i>			-0.039*** (0.004)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			0.009 (0.005)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			0.029** (0.005)				
<i>WorkPlaceClosing</i>				-0.214*** (0.006)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				-0.088*** (0.003)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				-0.172*** (0.011)			
<i>DebtRelief</i>					-0.004 (0.004)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					0.137*** (0.004)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					0.117*** (0.011)		
<i>FiscalSupport</i>						0.000*** (0.000)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						0.000*** (0.000)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						-0.000*** (0.000)	
<i>GovtResponse</i>							-0.023*** (0.000)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							0.018*** (0.000)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							0.026*** (0.000)
<i>Q2_COVID19</i>	-0.240*** (0.005)	-0.208*** (0.006)	-0.030** (0.005)	0.207*** (0.017)	-0.222*** (0.017)	-0.02 (0.011)	-0.177*** (0.006)
<i>Q3_COVID19</i>	-0.461*** (0.015)	-0.500*** (0.012)	-0.036 (0.023)	0.173*** (0.016)	-0.163** (0.045)	0.087** (0.026)	-0.644*** (0.015)
<i>Constant</i>	4.444*** (0.002)	4.450*** (0.002)	4.391*** (0.001)	4.466*** (0.004)	4.384*** (0.002)	4.372*** (0.001)	4.454*** (0.002)
<i>No.obs.</i>	59,238	59,238	59,238	59,238	59,238	59,238	59,238
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.642	0.642	0.642	0.642	0.642	0.642	0.642

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the syndicated loan markets and 0 otherwise. The definitions of the variables are given in Table 1. Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

Table 8: Country responses to COVID-19 and amount of bond financing by firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	-0.122***						
	(0.014)						
<i>Q2_COVID19</i> × <i>Stringency</i>	-0.022						
	(0.033)						
<i>Q3_COVID19</i> × <i>Stringency</i>	0.258***						
	(0.018)						
<i>Containment</i>		-0.149***					
		(0.014)					
<i>Q2_COVID19</i> × <i>Containment</i>		0.062					
		(0.032)					
<i>Q3_COVID19</i> × <i>Containment</i>		0.256***					
		(0.018)					
<i>Stayathome</i>			1.938***				
			(0.181)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			4.780***				
			(0.666)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			5.995***				
			(0.387)				
<i>WorkPlaceClosing</i>				-10.521***			
				(0.152)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				2.706**			
				(0.538)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				6.564***			
				(0.423)			
<i>DebtRelief</i>					-6.750***		
					(0.646)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					9.851***		
					(0.245)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					-2.746***		
					(0.257)		
<i>FiscalSupport</i>						-0.023***	
						(0.000)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						0.009***	
						(0.000)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						0.028***	
						(0.001)	
<i>GovtResponse</i>							-0.176***
							(0.016)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							0.266***
							(0.038)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							0.400***
							(0.020)
<i>Q2_COVID19</i>	0.051**	0	-0.115***	-0.070**	-0.082**	-0.165***	-0.124***
	(0.012)	(0.012)	(0.015)	(0.014)	(0.025)	(0.016)	(0.012)
<i>Q3_COVID19</i>	-0.110**	-0.109**	-0.107**	-0.158***	0.107**	-0.413***	-0.188***
	(0.029)	(0.030)	(0.028)	(0.026)	(0.032)	(0.037)	(0.031)
<i>Constant</i>	5.235***	5.239***	5.216***	5.298***	5.235***	5.337***	5.240***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.003)	(0.004)
<i>No.obs.</i>	9,125	9,125	9,125	9,125	9,125	9,125	9,125
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.837	0.837	0.837	0.837	0.837	0.837	0.837

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the bond markets and 0 otherwise. The definitions of the variables are given in Table 1. Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

Table 9: **Robustness to QE: Country responses to COVID-19 and propensity for loan financing by firms**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	-0.404*** (0.019)						
<i>Q2_COVID19</i> × <i>Stringency</i>	0.693*** (0.005)						
<i>Q3_COVID19</i> × <i>Stringency</i>	0.488*** (0.008)						
<i>Containment</i>		-0.413*** (0.026)					
<i>Q2_COVID19</i> × <i>Containment</i>		0.716*** (0.004)					
<i>Q3_COVID19</i> × <i>Containment</i>		0.511*** (0.010)					
<i>Stayathome</i>			-0.028** (0.008)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			0.073*** (0.004)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			0.014 (0.008)				
<i>WorkPlaceClosing</i>				-0.012 (0.006)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				0.050*** (0.007)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				0.021 (0.010)			
<i>DebtRelief</i>					0.038*** (0.002)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					-0.031 (0.017)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					-0.001 (0.016)		
<i>FiscalSupport</i>						0 (0.002)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						-0.006** (0.001)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						0.002 (0.001)	
<i>GovtResponse</i>							-0.515*** (0.055)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							0.871*** (0.029)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							0.617*** (0.022)
<i>Q2_COVID19</i>	-0.200*** (0.007)	-0.220*** (0.009)	-0.048*** (0.002)	-0.053** (0.012)	0.092* (0.033)	0.145*** (0.019)	-0.272*** (0.003)
<i>Q3_COVID19</i>	-0.148*** (0.002)	-0.169*** (0.004)	-0.030*** (0.003)	-0.058*** (0.008)	-0.032 (0.038)	-0.059** (0.012)	-0.190*** (0.002)
<i>QE_amount</i>	-0.001 (0.005)	-0.002 (0.006)	-0.009 (0.007)	-0.007 (0.007)	0.004 (0.009)	0.014 (0.009)	0.001 (0.006)
<i>Constant</i>	0.110*** (0.014)	0.117*** (0.015)	0.127*** (0.022)	0.118** (0.022)	0.071* (0.025)	0.055 (0.030)	0.109*** (0.014)
<i>No.obs.</i>	62,646	62,646	62,646	62,646	62,646	62,646	62,646
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.019	0.019	0.019	0.019	0.018	0.018	0.019

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the syndicated loan markets and 0 otherwise. The definitions of the variables are given in Table 1. Robust standard errors clustered at the firm- and year-level are shown in parenthesis. \*\*\*, \*\*, \* denote the 1%, 5% and 10% significance levels.

Table 10: **Robustness to QE: Country responses to COVID-19 and propensity for bond financing by firms**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Stringency</i>	0.003** (0.001)						
<i>Q2_COVID19</i> × <i>Stringency</i>	-0.002*** (0.000)						
<i>Q3_COVID19</i> × <i>Stringency</i>	-0.005*** (0.000)						
<i>Containment</i>		0.002* (0.001)					
<i>Q2_COVID19</i> × <i>Containment</i>		-0.000* (0.000)					
<i>Q3_COVID19</i> × <i>Containment</i>		-0.003*** (0.000)					
<i>Stayathome</i>			0.032 (0.023)				
<i>Q2_COVID19</i> × <i>Stayathome</i>			0.057** (0.013)				
<i>Q3_COVID19</i> × <i>Stayathome</i>			-0.031 (0.021)				
<i>WorkPlaceClosing</i>				0 (0.000)			
<i>Q2_COVID19</i> × <i>WorkPlaceClosing</i>				-0.000** (0.000)			
<i>Q3_COVID19</i> × <i>WorkPlaceClosing</i>				-0.000** (0.000)			
<i>DebtRelief</i>					0.053*** (0.005)		
<i>Q2_COVID19</i> × <i>DebtRelief</i>					-0.076 (0.034)		
<i>Q3_COVID19</i> × <i>DebtRelief</i>					0.006 (0.033)		
<i>FiscalSupport</i>						0.028 (0.021)	
<i>Q2_COVID19</i> × <i>FiscalSupport</i>						0.015 (0.020)	
<i>Q3_COVID19</i> × <i>FiscalSupport</i>						-0.045 (0.027)	
<i>GovtResponse</i>							0.003* (0.001)
<i>Q2_COVID19</i> × <i>GovtResponse</i>							-0.002 (0.001)
<i>Q3_COVID19</i> × <i>GovtResponse</i>							-0.005*** (0.001)
<i>Q2_COVID19</i>	0.033*** (0.003)	-0.001 (0.004)	-0.061** (0.015)	0.101*** (0.007)	0.178 (0.076)	0.01 (0.016)	0.014 (0.010)
<i>Q3_COVID19</i>	0.138*** (0.010)	0.124*** (0.009)	0.031* (0.011)	0.017 (0.013)	0.011 (0.079)	0.082** (0.022)	0.178*** (0.011)
<i>QE_amount</i>	-0.005 (0.012)	-0.004 (0.014)	0.006 (0.019)	-0.012 (0.017)	-0.012 (0.017)	0.007 (0.020)	-0.004 (0.013)
<i>Constant</i>	0.081* (0.031)	0.082 (0.036)	0.054 (0.060)	0.115 (0.052)	0.097 (0.047)	0.048 (0.066)	0.078* (0.031)
<i>No.obs.</i>	37,948	37,948	37,948	37,948	37,948	37,948	37,948
<i>Firm-year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Quarter effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adj_R<sup>2</sup></i>	0.162	0.162	0.162	0.162	0.162	0.162	0.162

The dependent variable in all the estimations is an indicator variable that takes the value of 1 if the firm has accessed the bond markets and 0 otherwise. The definitions of the variables are given in [Table 1](#). Robust standard errors clustered at the firm- and year-level are shown in parenthesis. ‘\*\*\*’, ‘\*\*’, ‘\*’ denote the 1%, 5% and 10% significance levels.

## A. Appendix

Table A1: End use of loans

	2019				2020		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
No. of loan tranches							
Acquisition	982	1,114	1,164	1,138	945	477	541
Capex	1,013	969	1,020	1,171	1,037	677	671
Operations	2,897	3,034	2,974	2,891	3,148	2,889	1,794
Refinancing	474	506	497	464	492	466	578
Restructuring	11	7	11	11	9	16	8
Total	5,377	5,630	5,666	5,675	5,632	4,525	3,592
Percentage of loans							
Acquisition	18.3%	19.8%	2.5%	2.1%	16.8%	1.5%	15.1%
Capex	18.8%	17.2%	18.0%	2.6%	18.4%	15.0%	18.7%
Operations	53.9%	53.9%	52.5%	5.9%	55.9%	63.8%	49.9%
Refinancing	8.8%	9.0%	8.8%	8.2%	8.7%	1.3%	16.1%
Restructuring	0.2%	0.1%	0.2%	0.2%	0.2%	0.4%	0.2%

The classification of the aggregated five end use fields based on the primary purpose captured in the LPC Dealscan database is as follows. Primary purposes captured as Takeover, Acquisition, Merger, Leveraged Buyout, Management Buyout, and Sponsored Buyout are categorized under ‘Acquisition’. Primary purpose captured as Project Finance, Real estate loan, Aircraft & Ship finance, Capital expenditure, Lease financing, Ship finance, Spinoff, Equipment Upgrade/Construction, Purchase of Software/Services, Purchase of Hardware, Telecom Buildout, and Infrastructure are categorized under ‘Capex’. Primary purpose captured as General Purpose, Working capital, Trade finance, Employee stock ownership plan, Debtor-in-possession, Credit Enhancement, Receivables Program, Guarantee, Pre-Export and Dividend or Distribution to Shareholders are categorized under ‘Operations’. Primary purpose captured as General Purpose/Refinance, Commercial paper backup, Recapitalization, IPO Related Financing, Exit financing, Collateralized Debt Obligation (CDO) and Dividend Recapitalization are categorized under ‘Refinancing’. Primary purpose captured as Stock Repurchase, General Purpose/Stock Repurchase, Standby takeover defense and Restructuring are categorized under ‘Restructuring’.

Table A2: **Country-wise observations: Baseline sample**

Baseline sample for loans				Baseline sample for bonds			
Country	Obs.	Country	Obs.	Country	Obs.	Country	Obs.
Argentina	274	Luxembourg	120	Argentina	456	Macau	30
Australia	3188	Macau	45	Australia	924	Malaysia	1559
Austria	358	Malaysia	1352	Austria	267	Mexico	815
Bahrain	12	Malta	12	Bangladesh	15	Netherlands	407
Bangladesh	87	Mauritius	12	Belgium	315	New Zealand	199
Belgium	438	Mexico	733	Brazil	1429	Nigeria	15
Bermuda	304	Monaco	92	Bulgaria	15	Norway	369
Botswana	12	Mongolia	12	Cambodia	15	Oman	15
Brazil	585	Morocco	36	Canada	1495	Pakistan	272
Bulgaria	20	Netherlands	649	Chile	555	Papua N.G.	15
Canada	3982	New Zealand	564	China	11994	Peru	300
Cayman Islands	36	Nigeria	12	Colombia	240	Philippines	506
Chile	390	Norway	726	Croatia	15	Poland	224
China	3569	Oman	90	Czech Republic	15	Portugal	290
Colombia	150	Pakistan	438	Denmark	135	Russia	978
Cote D'Ivoire	12	Panama	12	Egypt	30	Saudi Arabia	135
Croatia	105	Papua N.G.	15	Finland	493	Senegal	15
Cyprus	23	Peru	275	France	1557	Singapore	988
Czech Republic	53	Philippines	640	Germany	949	Slovenia	45
Denmark	300	Poland	400	Greece	141	South Africa	252
Egypt	107	Portugal	167	Hong Kong	1232	Spain	462
Estonia	44	Qatar	96	India	3832	Sri Lanka	30
Faroe Islands	12	Romania	72	Indonesia	1291	Sweden	735
Finland	723	Russia	874	Ireland	270	Switzerland	916
France	2562	Saudi Arabia	579	Italy	603	Thailand	1555
Gabon	12	Singapore	1384	Japan	12728	Turkey	225
Germany	2455	Slovakia	12	Jordan	15	Ukraine	35
Ghana	16	Slovenia	57	Kazakhstan	12	UAE	105
Gibraltar	12	South Africa	583	Kuwait	15	UK	2186
Greece	495	Spain	977	Lebanon	12	USA	17720
Guernsey	60	Sri Lanka	30	Lithuania	15	Venezuela	27
Hong Kong	3128	Sweden	1024	Luxembourg	124	Vietnam	105
Hungary	60	Switzerland	909				
Iceland	45	Taiwan	5696				
India	3978	Thailand	1581				
Indonesia	1924	Trinidad & Tob.	12				
Ireland	444	Tunisia	8				
Isle Of Man	24	Turkey	435				
Israel	260	Uganda	12				
Italy	1136	Ukraine	66				
Japan	21044	UAE	225				
Jersey	68	UK	4653				
Jordan	30	USA	27601				
Kazakhstan	30	Venezuela	15				
Kenya	36	Vietnam	135				
Kuwait	147	Virgin Isl. (Brit)	12				
Latvia	4	Zambia	36				
Lithuania	60						

The table shows the country-year-quarter observations for the baseline sample employed for loan propensity estimations in [Table 3](#) and bond propensity estimations in [Table 4](#).