Why did Firms Draw Down their Credit Lines during the COVID-19 Shutdown?*

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Abstract

The economic shutdown associated with the COVID-19 pandemic witnessed a dramatic surge in drawdowns on pre-existing credit lines. This paper examines how this liquidity was used by firms. Drawdowns were associated with an immediate accumulation of liquid assets followed by a depletion of this liquidity as the U.S. economy stabilized after the spring of 2020. Drawdowns were generally not associated with greater levels of physical investment or employment either immediately after the drawdowns or several months later. Rather, the depletion of liquidity is simultaneous with an increase in the equity to assets ratio, consistent with repayments of the drawdowns. These facts are consistent with the idea that firms drew down their credit lines due to a precautionary motive to mitigate future liquidity risk until the economy started to stabilize. However, we find evidence that firms in industries that were less affected by the shutdown, such as professional services that can be performed remotely, were relatively more likely to use drawdowns to maintain investment rather than accumulate liquidity. On the intensive margin, this is especially true for firms in such industries that drew a relatively small amount of funds.

Keywords: credit lines, COVID-19, liquidity, investment

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1 Introduction

Credit lines, or contracts that allow firms to draw funds from their bank, comprise a substantial fraction of bank lending to businesses (Shockley and Thakor (1997)). The literature has generally established that firms are more likely draw down their credit lines when liquidity is scarce, but there are conflicting perspectives about why. On the one hand, Holmstrom and Tirole (1998) argue that credit lines help firms to manage their liquidity so that they can maintain investment.[1] On the other hand, Ivashina and Scharfstein (2010) find that firms drew down their credit lines during the global financial crisis as a precaution against the possibility that their lenders could become unable to provide liquidity in the future.

This paper investigates this question within the context of the shutdown associated with the COVID-19 pandemic. During March of 2020, the U.S. introduced social distancing restrictions in response to the COVID-19 pandemic, resulting in the suspension of non-essential economic activities involving in-person interactions. Businesses faced sharply declining profits, especially in industries with less flexibility for working at home (Figure 1).[2] During this time, firms drew a substantial amount of cash from pre-existing credit lines with their banks (Acharya and Steffen (2020), Li, Strahan and Zhang (2020)). To determine why firms drew down their credit lines during the COVID-19 shutdown, it is important to consider how they used the resulting liquidity.

This paper investigates two main hypotheses to explain the increase in credit line drawdowns during the COVID-19 shutdown:

H1: Firms accumulated liquidity as a precaution against future liquidity risk.

H2: Firms used the drawdowns to pay for current expenses, such as physical investment and employees.

We address this question using data on credit line drawdowns from S&P's Leveraged Commentary & Data and balance sheet data from Compustat. We compare firms

[1] Campello et al. (2012) and Berrospide and Meisenzahl (2015) find empirical evidence for this use during the global financial crisis.

[2] Papanikolaou and Schmidt (2020) find that such industries also experienced greater declines in employment, expected revenue growth, stock market performance, and creditworthiness.

that drew from a credit line in March 2020 relative to firms that did not. Although drawdowns are not randomly distributed across firms, we mitigate endogeneity by controlling for observable factors that could be jointly correlated with a firm's motivation to draw from a credit line and other adjustment strategies affecting the outcomes, such as a firm's liquidity stress and industry. We also instrument credit line drawdowns with a firm's predetermined level of undrawn credit commitments. Although a firm's level of undrawn commitments could be chosen partly in anticipation of adverse shocks in general, it is arguably less likely to have been chosen in anticipation of a shock like the COVID-19 shutdown, which was unique in its abruptness and magnitude.

A unique feature of the COVID-19 shutdown was its heterogeneous effect across industries based on their ability to be performed remotely and whether they were designated as essential. Motivated by this observation, we further examine how the use of funds from credit line drawdowns varied with industry-level exposure to the shutdown. We also examine the intensive margin to see how the motivation behind credit line drawdowns was correlated with the size of the drawdowns.

We find that credit drawdowns at the start of the pandemic in March 2020 were strongly associated with an immediate increase in liquidity from 2019Q4 to 2020Q1, consistent with a precautionary motive. We do not find evidence that drawdowns were on average associated with greater levels of physical investment or employment. However, we find some evidence that, within industries that were less affected by the shutdown, firms that drew modest amounts of funds were relatively more likely maintain investment or employees.

We also investigate how the liquidity from credit lines was used after the start of the pandemic from 2020Q1 to 2020Q3. During this period, especially from 2020Q2 to 2020Q3, macroeconomic indicators such as GDP and unemployment partially recovered following a series of stabilizing interventions in late March, including interest rate reductions, asset purchases, and the establishment of funding facilities by the Federal Reserve as well as stimulus payments, unemployment benefits, and small business lending support associated with the Coronavirus Aid, Relief, and Economic Security (CARES) Act passed by Congress. Liquidity strains eased as profitability also recovered (Figure 1). During this time, we find that firms that initially drew down their credit lines at the start of the pandemic decreased their liquidity relative to other firms. There is little evidence

that firms eventually used the liquidity to support physical investment or employment. Rather, these firms simultaneously exhibited a relative increase in the equity to total assets ratio, which is consistent with repayments of their credit lines. This further supports the view that firms initially drew down their credit lines due to a precautionary motive to accumulate liquidity at the start of the pandemic. As the economy stabilized later on in the year, this precautionary motive dissipated, and firms did not appear to have a compelling alternative use for the cash.

2 Literature Review

This paper contributes to two strands of recent work examining the economic effects of the COVID-19 pandemic. First, it relates to papers showing a significant increase in credit line drawdowns during the COVID-19 shutdown. Acharya and Steffen (2020) find evidence that this may have been driven by a precautionary motive by firms trying to avoid credit rating downgrades. Li, Strahan and Zhang (2020) and Federal Reserve (2020) remark that banks have managed to accommodate these drawdowns thanks to inflows of deposits as well recent regulations that have strengthened their balance sheets compared to the global financial crisis. This paper contributes to this literature by comparing multiple uses to which firms may have applied their credit line drawdowns, both immediately after the drawdowns and several months later. We also examine the degree to which the uses of credit line drawdowns were associated with exposure to the shutdown and the size of the drawdowns.

Second, this work relates to papers illustrating the heterogeneous effects of the COVID-19 shutdown across industries. Papanikolaou and Schmidt (2020) finds that industries with fewer opportunities to work from home performed worse as measured by declines in employment, expected revenue growth, stock market performance, and expected likelihood of default. By contrast, Barrero, Bloom and Davis (2020) and Hassan et al. (2020) show that the shutdown provided expansion opportunities for some firms, such as those specialized in essential services.

This paper is also related to a more general literature on credit lines. Firms apply for credit lines to mitigate liquidity risk (Holmstrom and Tirole (1998), Acharya et al. (2014)). During the global financial crisis, firms used their credit lines to main-

tain investment (Campello, Graham and Harvey (2010), Campello et al. (2011), Campello et al. (2012), Berrospide and Meisenzahl (2015)). There is also evidence that firms drew down their credit lines during the crisis as a precautionary measure due to fears that their lenders would be unable to provide liquidity in the future (Ivashina and Scharfstein (2010), Montoriol-Garriga and Sekeris (2009), Huang (2010)).

3 Data

We obtain data on credit line drawdowns from Leveraged Commentary & Data, a subsidiary of S&P Global Market Intelligence. We construct a firm-level cross-section by computing the sum of drawdowns in March 2020 for each firm. We merge this with quarterly balance sheet data from Compustat, which includes the percentage of liquid assets (which consists of cash and short-term investments) to total assets, capital expenditure to total assets, book equity to total assets, and a measure of liquidity stress, which is defined as

$$stress = 100 * \frac{\text{lag short-term debt - lag liquid assets - net income}}{\text{lag total assets}} \tag{1}$$

In particular, liquidity stress is intended to measure a firm's short-term obligations relative to existing resources that can be used to meet those obligations, which includes the stock of liquid assets as of the last filing date as well as the flow of net income in the current period. We also examine the logarithm of the number of employees, which is only available at annual frequency. A 95% winsorization is applied variables to mitigate the effect of outliers. Following the literature, we omit firms from the agriculture, utilities, and finance sectors. Summary statistics are included in Table 1.

We investigate potential differences in the use of credit line drawdowns across industries that were differentially affected by the shutdown. To determine exposure, we consider the fact that the shutdown restricted non-essential economic activities involving in-person interactions. Specifically, we classify an industry as relatively exposed to the crisis if it is not deemed essential and a large fraction of jobs cannot be done at home, and we classify an industry as relatively unexposed to the crisis if it is essential or if a large fraction of jobs can be done at home.

We determine essential industries at the 4-digit NAICS code level based on the classification in Papanikolaou and Schmidt (2020), which is a modified version of the guidance provided by the Cybersecurity and Infrastructure Security Agency (CISA). Some essential industries include food and beverage production, utilities, transportation, and medical services.

We determine the degree to which work in an industry can be done at home at the 2-digit NAICS code level based on the classification in Dingel and Neiman (2020). Specifically, we classify an industry as having a low fraction of jobs that can be done at home if no more than 25% of jobs can be done at home, which includes accommodation and food services; agriculture, forestry, fishing, and hunting; retail trade; construction; transportation and warehousing; manufacturing; health care and social assistance; and mining, quarrying, and oil and gas extraction. We classify an industry as having a high fraction of jobs that can be done at home if at least 75% of jobs can be done at home, which includes education services; professional, scientific, and technical services; management of companies and enterprises; and finance and insurance.

4 Descriptive analysis

4.1 Aggregates

We first examine general patterns of credit line drawdowns, liquidity, investment, employment, and equity during the COVID-19 pandemic for firms in industries with varying degrees of exposure to the shutdown. As mentioned before, Figure 1 shows that the pandemic resulted in an abrupt decline in the median net income by around 1% in 2020Q1. Firms in relatively exposed industries exhibited a nearly 50% larger decline. Firms in relatively unexposed industries also experienced declining profits, possibly because of reduced demand from more exposed firms or from consumers with reduced incomes. Consistent with the reduction in income, Figure 2 shows that the pandemic was associated an increase in the mean liquidity stress, continuing an upward trend from 2019.

Potentially in response to current or expected future liquidity stress, firms drew down their credit lines. Figure 3 shows the cumulative percentage of firms that drew

from a credit line starting on March 1, 2020. During the month of March, approximately 8% of firms had drawn credit. After March, the rate at which firms drew credit slows down considerably. Credit line drawdowns were notably more common among firms with greater exposure to the shutdown, with approximately 12% of firms in relatively exposed industries drawing down their credit lines during March but only around 4% of firms in relatively unexposed industries doing so. On the intensive margin, Figure 4 shows the mean drawdown amount from March 1 until the given date. The size of the drawdowns generally becomes smaller over time. By the end of March, the mean drawdown for firms in relatively exposed industries is about 30% greater compared to average, whereas the mean drawdown for firms in relatively unexposed industries is slightly less compared to other industries.

We consider several different uses to which firms may have applied the liquidity from credit line drawdowns, including holding a precautionary buffer of cash or maintaining physical capital investment or employees. First, Figure 5 shows the mean of liquid assets to total assets from 2019Q1 to 2020Q3. Liquidity increases in 2020 despite diminishing profits, which suggests that firms were accumulating liquidity in excess of current expenses. Figure 6 shows the mean of capital expenditure to assets as a measure of physical investment. Investment decreases by around 30% from 2019Q4 to 2020Q2. The decline is almost twice as large for firms that were relatively exposed to the pandemic, whereas it is somewhat less for relatively unexposed firms. Investment partially recovers from 2020Q2 to 2020Q3, especially for relatively unexposed firms. Figure 7 shows the mean of the logarithm of the number of employees at annual frequency from 2015 to 2020. Employment decreases by around 2% from 2019 to 2020. The decline is about twice as large for firms that were relatively exposed to the pandemic, whereas it is somewhat less for relatively unexposed firms.

Finally, we also consider the equity to total assets ratio as a rough means to assess whether firms engaged in share buybacks, which would decrease the equity to total assets ratio, or repaid their credit lines, which would increase the equity to total assets ratio. Note that the analysis for equity restricts to firms with at least $10 million assets to mitigate the effect of outlier firms whose total equity is negative and several times the magnitude of total assets. Figure 8 shows the mean of book equity to total assets. The equity to total assets ratio decreases from 2019Q4 to 2020Q1, continuing a downward

trend from 2019, but the trend starts to reverse after 2020Q1. This suggests that firms did not extensively rely on debt to maintain liquidity after the start of the crisis.

4.2 Univariate comparison of firms by credit line drawdown

This section examines the correlates of credit line drawdowns at the start of the COVID-19 shutdown. Table 2 compares firms that drew funds from a credit line in March 2020 to firms that did not.[3] We first compare these firms upon the impact of the pandemic. This is based on the 2019Q4 values for most of the characteristics except for liquidity stress, which corresponds to the 2020Q1 value, and the number of employees, which is from the last reported date in 2019. Firms that drew down from a credit line were more likely than average to be in a relatively exposed industry and less likely to be in a relatively unexposed industry. They were also relatively large, illiquid, and levered, but they were not generally more liquidity stressed.

To compare the initial response to the pandemic, we consider the change in liquidity and investment from 2019Q4 to 2020Q1. Liquidity increased for both groups of firms, but it grew by greater than 10 times more for firms that drew from a credit line. The equity to total assets ratio decreased for both groups, possibly reflecting losses of retained earnings due to lower profitability. The decrease in the equity to total assets ratio is larger for firms that drew down their credit lines, which may reflect the mechanical effect of the increased debt on their balance sheets. Investment decreased for both groups of firms, but it decreased by more for the firms that drew from a credit line.

To compare the later response to the pandemic, we look at the change in liquidity and investment from 2020Q1 to 2020Q3. In contrast to the change from 2019Q4 to 2020Q1, liquidity declines for firms that drew from a credit line, whereas it increases for firms that did not draw from a credit line. One interpretation of this finding is that firms that initially drew their credit lines eventually used this liquidity to pay expenses or pay back the credit lines, whereas firms that did not draw down a credit line at the start of the crisis were more likely to eventually obtain liquidity through other means such as the bond market. The equity to total assets ratio for the firms that drew from a

[3]Note that the number of firms with a drawdown is greater than the number of firms with data on drawdown volume in Table 1 because a small number of observations report that there was a drawdown but do not report the amount.

credit line increased relatively more compared to other firms, which would be consistent with a repayment of credit lines, although the difference is not statistically significant in this analysis. Both groups of firms exhibit a continued decline in investment, which is relatively greater for firms that drew down their credit lines. Finally, firms that drew from a credit line also exhibit a significant relative loss in employment from 2019 to 2020 compared to other firms.

Table 3 shows a similar set of statistics for the subsample of firms in industries that were relatively exposed to the COVID-19 shutdown. Many of the patterns are generally similar to the full sample except that the relative effects on the equity to total assets ratio is reversed. Finally, Table 4 shows a similar set of statistics for the subsample of firms in industries that were relatively unexposed to the shutdown. Many of the patterns are generally similar to the full sample except that the negative correlation of drawdowns with capital expenditure is not as pronounced.

5 Predictors of drawdowns

5.1 Methodology

We estimate a conditional logistic regression model given by the equation

$$Drawdown_{ij} = \beta X_{ij} + \alpha_j + \epsilon_{ij} \tag{2}$$

where $Drawdown_{ij}$ is a dummy indicating whether firm i in industry j drew funds from a credit line in March 2020, α_j is a set of industry fixed effects at the 2-digit NAICS level, and X_{ij} is a set of predictors. In the baseline specification, the predictors include the 2020Q1 level of liquidity stress and the 2019Q4 levels of capital expenditure to assets, the logarithm of total assets, and dummies indicating whether the firm was in a relatively exposed or relatively unexposed industry. We also include a specification that replaces liquidity stress with its contributing factors, including the 2020Q1 level of net income to assets and the 2019Q4 levels of short-term debt to assets and liquid assets to total assets.

5.2 Results

5.2.1 Extensive margin

Table 5 shows the estimated effects. Column (1) shows that size is a significant predictor of credit line drawdowns. This is perhaps surprising since large firms are relatively less dependent on bank financing compared to small firms. By contrast, liquidity stress, capital expenditure, and industry exposure to the pandemic are all insignificant in this exercise, while relatively unexposed firms were significantly less likely to draw down their credit lines. To distinguish the effects of different components of liquidity stress, Column (2) shows that profitability in 2020Q1 is not a significant predictor of drawdowns, whereas liquidity is negatively associated with drawdowns. This is more consistent with the idea that firms drew down their credit lines due to a precautionary motive rather than to cover immediate liquidity shortages. Short-term debt is negatively associated with drawdowns, perhaps because it decreased the capacity of firms to accomodate more debt from credit line drawdowns.

Table 6, particularly Column (1) and Column (2), shows the estimated effects for the subsample of firms in relatively exposed industries. In this subsample, drawdowns are relatively less strongly associated with illiquidity and more strongly associated with low profitability. Column (3) and Column (4) show the estimated effects for the subsample of firms in relatively unexposed industries. Like the full sample, drawdowns are associated with illiquidity.

5.2.2 Intensive margin

We also examine the intensive margin by estimating a similar specification as equation (2) except using a linear model with the logarithm of the sum of credit line drawdowns during March 2020 as the dependent variable within the sample of firms that had a drawdown. Table 7 shows that drawdown size was positively associated with firm size, whereas the other characteristics are insignificant.

Table 8, particularly Column (1) and Column (2), shows predictors of drawdown size for the subsample of firms in relatively exposed industries, while Column (3) and Column (4) show predictors of drawdown size for the subsample of firms in relatively unexposed industries. In both subsamples, credit line drawdowns are consistently pos-

itively associated with firm size. Within the subset of relatively exposed firms, credit line drawdowns are larger for illiquid firms, but the opposite holds within the subset of relatively unexposed firms.

6 The effect of drawdowns

This section implements a panel model and a cross-sectional instrumental variable model to examine the immediate and medium-term effects of credit line drawdowns on liquidity, capital investment, employment, and equity.

6.1 Methodology

We estimate the panel model

$$Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t Drawdown_i \times \psi_t + \gamma X_{it} + \epsilon_{it} \tag{3}$$

where Y_{it} is the value in quarter t for firm i of one of the dependent variables (liquid assets to total assets, capital expenditure to total assets, or book equity to total assets), α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $Drawdown_i$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, and X_{it} is a set of controls that includes current liquidity stress and the lag of total assets. T-statistics are computed using firm-clustered standard errors. We also estimate a corresponding specification using the annual data where the dependent variable is the logarithm of the number of employees.

We include firm fixed effects and other control variables to help uniquely identify the effect of credit line drawdowns on the set of dependent variables. These other regressors address the concern that credit line drawdowns could have been correlated with other static or time-varying firm characteristics that could also affect the dependent variables. As an example in the case where the dependent variable is the ratio of liquid assets to total assets, firms that were in industries with greater exposure to the shutdown may have both drawn funds from a credit line and faced greater cash outflows, resulting in a downward bias of the coefficient β without controlling for this exposure. Another possi-

bility is that firms that had weaker liquidity positions at the start of the crisis could have had a greater tendency to both draw funds from a credit line and reduce cash outflows in order to increase their liquidity, resulting in an upward bias of the coefficient β in the absence of controlling for this characteristic.

We also estimate the intensive margin of the effect of credit line drawdowns by estimating a similar set of regressions except restricting to the subsample of firms that drew funds from a credit line and using the logarithm of total credit line drawdowns in March 2020, denoted by $DrawdownSize_{ij}$, as the treatment variable. It is useful to also consider the intensive margin because the amount that a firm draws from a credit line could depend on the intended use of the funds. For example, a firm seeking to accumulate a precautionary buffer of liquidity due to anticipation of losses for a long period of time may be more likely to draw a larger volume of funds compared to a firm seeking to finance current investment opportunities.

It is possible that credit line drawdowns could have also been correlated with unobserved factors affecting the response variables. To sharpen the identification, the regression in equation (3) can be interpreted like a difference-in-differences design. The difference-in-differences design identifies the causal effect of drawdowns on liquidity under the assumption that firms that drew funds from a credit line and firms that had no drawdowns would have experienced parallel trends in the liquid assets to total assets ratio in the absence of the drawdown. In the respective results sections, we assess the plausibility of this assumption for each variable by checking the trends of the two groups. Note that we also compare firms with or without a credit line drawdown with respect to pre-existing characteristics in Table 2 for the full sample, Table 3 for the subset of relatively exposed firms, and Table 4 for the subset of relatively unexposed firms. As described in Section 4.2, drawdowns are consistently associated with size, illiquidity, and leverage.

We also estimate a corresponding cross-sectional specification

$$\Delta Y_{ij} = \beta Drawdown_{ij} + \gamma X_{ij} + \alpha_j + \epsilon_{ij} \tag{4}$$

where ΔY_{ij} is the difference from 2019Q4 to 2020Q1 or from 2020Q1 to 2020Q3 of one of the dependent variables (liquid assets to total assets, capital expenditure to total assets,

or equity to total assets) for firm i in 2-digit NAICS industry j, X_{ij} is a set of controls, α_j represents industry fixed effects, and $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020. The control variables include the logarithm of total assets in 2019Q4 and liquidity stress in 2020Q1. T-statistics are computed using heteroskedasticity-robust standard errors. We also estimate a corresponding specification using the annual data for the number of employees.

We specifically focus on two variations of the cross-sectional specification. First, we include dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification to assess the relative response associated with these industry groups. Second, as an additional measure to sharpen identification, we also estimate a corresponding cross-sectional specification where drawdowns are instrumented by the logarithm of a firm's pre-existing level of undrawn revolving credit commitments from Capital IQ as of the last reported date in 2019. This can be interpreted as a limit on the amount of credit a firm can draw during the COVID-19 shutdown.

Table 9 shows in a first-stage regression that the logarithm of undrawn credit is a significant predictor of credit line drawdowns in March 2020, with an F-statistic of greater than 10 in the extensive margin specification where the dependent variable is a dummy indicating a credit line drawdown as well as in an analogous intensive margin specification where the dependent variable is the logarithm of total drawdowns for the subset of firms with a positive drawdown.

Instrumenting with undrawn commitments could mitigate endogeneity because it is predetermined. A potential caveat is that some firms could choose to maintain higher undrawn commitments in anticipation of shocks. In particular, such firms could also exhibit a different degree of exposure to liquidity shocks or have a higher likelihood of implementing complementary adjustment strategies in response to shocks that could affect the response variables. However, it is less likely that firms would have chosen their level of undrawn commitments in anticipation of a shock like the COVID-19 shutdown, which was unique in its speed, severity, and differential effect across industry groups.

To show how undrawn commitments are correlated with firm characteristics, Table 10 shows the estimates and t-statistics from regressing several firm characteristics at the time of the impact of the COVID-19 shutdown on the size of undrawn credit and com-

puting heteroskedasticity-robust standard errors. Undrawn commitments are positively associated with exposure to the crisis, firm size, capital expenditure, and the equity to total assets ratio, and they are negatively associated with liquidity and liquidity stress.

6.2 Results: liquidity

The results in this section provide evidence that firms drew down their credit lines to accumulate liquidity at the start of the pandemic, which is consistent with a precautionary measure to safeguard against future liquidity risk.

6.2.1 Extensive margin

Figure 9 shows the mean liquid assets to total assets ratio for firms that drew down their credit lines compared firms with no recorded drawdowns, normalizing each series relative to its level in 2019Q4. The left panel shows this comparison for all industries, the middle panel restricts to industries that were relatively exposed to the shutdown, and the right panel restricts to industries that were relatively unexposed to the shutdown. In each case, fluctuations in the relative trend between the two groups of firms before 2019Q4 are small compared to the sharp relative increase in liquidity for the firms that drew from a credit line in 2020Q1. After 2020Q1, the firms that drew from a credit line exhibit a decline in liquid assets while the firms that did not draw from a credit line experience an increase in liquidity.

Table 11 shows the results from estimating the panel specification given by equation (3). The insignificant estimates before 2020Q1 support a lack of a pre-existing trend. The increase in liquidity for the drawdown firms is statistically significant and remains so until 2020Q3 despite diminishing in magnitude. However, it becomes insignificant for the subset of unexposed firms.

Table 12 shows the results from estimating the cross-sectional specification given by equation (4) and also includes interactions of drawdowns and the control variables with the industry exposure subsets. The initial effect of drawdowns on liquidity from 2019Q4 to 2020Q1 is positive but not significantly different across the industry groups. The effect from 2020Q1 to 2020Q3 is negative but weaker in magnitude for firms in relatively exposed industries. Table 13 shows the results when instrumenting drawdowns

with undrawn credit. Note that the OLS specfications are also repeated on the subsample of observations with undrawn credit. The results with the instrument are qualitatively similar to the OLS estimates and larger in magnitude.

6.2.2 Intensive margin

The left panel of Figure 10 shows the difference in the liquid assets to total assets ratio from 2019Q4 to 2020Q1 for firms that drew down their credit lines relative to the magnitude of the drawdown after partialling out the control variables specified in equation (4). The figure indicates a positive relationship between the magnitude of credit line drawdowns and liquidity. The right panel shows this relationship for firms in relatively exposed and unexposed industries. Both industry groups exhibit a positive association between drawdown magnitudes and liquidity, although the association appears to be somewhat stronger for the exposed industries.

Table 14 shows the results from estimating the panel specification given by equation (3) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. Drawdown size is significantly associated with increased liquidity after 2020Q1, with a stronger effect associated with relatively exposed firms.

Table 15 shows the results from estimating the cross-sectional specification given by equation (4) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. Similar to the extensive margin, drawdown size is positively associated with an increase in liquidity during 2019Q4 to 2020Q1 and a decrease from 2020Q1 to 2020Q3. The effect for firms in relatively exposed industries is consistently more positive than average, but the difference is not statistically significant. Table 16 shows the results when instrumenting drawdown size with undrawn credit. The results with the instrument are qualitatively similar to the OLS estimates.

6.3 Results: capital investment

The results in this section do not provide robust evidence that drawdowns were used to maintain investment during the shutdown on average. However, firms in relatively unexposed industries that drew a modest amount of funds were relatively more likely to

use the liquidity to finance investment.

6.3.1 Extensive margin

Figure 11 shows the mean capital expenditure to assets ratio for firms that drew down their credit lines compared to firms with no recorded drawdowns, normalizing each series relative to its level in 2019Q4.[4] Fluctuations in the relative trend between the two groups of firms before 2019Q4 are small for the full sample and the subsample of exposed firms, although there appear to be more preceding fluctuations in the subsample of unexposed firms. The firms that drew funds from a credit line generally appear to exhibit a slightly more severe decline in investment compared to the other firms.

Table 17 shows the results from estimating the panel specification given by equation (3). The results for the full sample indicate that drawdowns were negatively associated with reduced physical investment both initially in 2020Q1 and over time during 2020Q2 to 2020Q3. For the subsets of exposed and unexposed firms, the results are qualitatively similar but not statistically significant.

Table 18 shows the results from estimating the cross-sectional specification given by equation (4) and also includes interactions of drawdowns and the control variables with the industry exposure subsets. Drawdowns are generally associated with decreased investment but to a weaker extent for firms in relatively unexposed industries, although none of these result is statistically significant in this exercise. Table 19 shows the results when instrumenting drawdowns with undrawn credit. Again, the effect of drawdowns on investment is negative but not statistically significant.

6.3.2 Intensive margin

The left panel of Figure 12 shows the difference in the capital expenditure to total assets ratio from 2019Q4 to 2020Q1 for firms that drew down their credit lines relative to the magnitude of the drawdown after partialling out the control variables specified in equation (4). The figure does not indicate a strong relationship between the magnitude of credit line drawdowns and physical investment. However, the right panel shows that, for

[4] As in Figure 9, the left panel shows this comparison for all industries, the middle panel restricts to industries that were relatively exposed to the shutdown, and the right panel restricts to industries that were relatively unexposed to the shutdown.

firms in industries that were relatively unexposed to the COVID-19 shock, smaller credit line drawdowns were relatively more strongly associated with greater investment.

Table 20 shows the results from estimating the panel specification given by equation (3) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. Drawdown size was generally negatively associated with investment with varying degrees of statistical significance.

Table 21 shows the results from estimating the cross-sectional specification given by equation (4) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. Firms that were relatively exposed to the crisis exhibited a negative relationship between drawdown size and investment, consistent with the observation in Figure 12 that smaller drawdowns more strongly associated with investment within this subsample. Table 22 shows the results when instrumenting drawdown size with undrawn credit. The results with the instrument are qualitatively similar to the OLS estimates.

6.4 Results: employment

The results in this section do not provide strong evidence that the credit line drawdowns were used to support employment.

6.4.1 Extensive margin

Note that the analysis for employment is conducted at annual frequency because that is the frequency at which this data is reported. Figure 13 shows the mean capital expenditure to assets ratio for firms that drew down their credit lines compared to firms with no recorded drawdowns, normalizing each series relative to its level in 2019.[5] Before the pandemic, the trends among firms with or without a drawdown are approximately parallel, especially for the full sample. During the pandemic, firms with drawdowns exhibited a greater loss in employees compared to other firms in the full sample and the sample of relatively unexposed firms, whereas they experienced a comparable loss in employees in the sample of relatively exposed firms.

[5] As in Figure 9, the left panel shows this comparison for all industries, the middle panel restricts to industries that were relatively exposed to the shutdown, and the right panel restricts to industries that were relatively unexposed to the shutdown.

Table 23 shows the results from estimating the panel specification given by equation (3). Drawdowns are not associated with a differential trend in the years preceding 2019, but they are associated with a reduction in employees in 2020 for the full sample. Drawdowns are also associated with a reduction in employees for the subsamples of relatively exposed or relatively unexposed firms, but those associations are not statistically significant.

Table 24 shows the results from estimating the cross-sectional specification given by equation (4) and also includes interactions of drawdowns and the control variables with the industry exposure subsets. Drawdowns were associated with decreased employment, with no significant interactions with industry exposure to the pandemic. Table 25 shows the results when instrumenting drawdowns with undrawn credit. The result with the instrument is also negative but not statistically significant.

6.4.2 Intensive margin

Figure 14 shows the difference in the liquid assets to total assets ratio from 2019Q4 to 2020Q1 for firms that drew down their credit lines relative to the magnitude of the drawdown after partialling out the control variables specified in equation (4). Drawdown size was negatively associated with the change in the number of employees in the full sample and the sample of relatively unexposed firms, although this association is positive for the sample of relatively unexposed firms.

Table 26 shows the results from estimating the panel specification given by equation (3) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. In this specification, drawdown size is positively associated with the number of employees in 2020, although the estimate is not statistically significant effect at the 5% level.

Table 27 shows the results from estimating the cross-sectional specification given by equation (4) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. Drawdown size was not significantly associated with the change in employees, although it was relatively more positively associated on the subsample of relatively exposed firms. Table 28 shows the results when instrumenting drawdowns with undrawn credit. The result with the instrument is qualitatively similar to the OLS estimate.

6.5 Results: equity

We consider the ratio of book equity to total assets as a means to assess whether firms engaged in share buybacks, which would decrease the equity to assets ratio, or repaid their credit lines, which would increase the equity to assets ratio. Note that this is only an indirect means to assess these actions since other events can also affect the equity to assets ratio.

The results in this section generally indicate that credit line drawdowns were associated with an immediate reduction in the equity to total assets ratio from 2019Q4 to 2020Q1, which likely reflects the mechanical effect of drawing down debt on their balance sheets, followed by a recovery during 2020Q1 to 2020Q3, which is consistent with firms paying back their credit lines. This is generally consistent with the hypothesis that firms drew down their credit lines as a precautionary measure at the start of the crisis and then repaid them later as the economic repercussions of the pandemic stabilized.

6.5.1 Extensive margin

Note that the analysis for equity restricts to firms with at least $10 million assets to mitigate the effect of outlier firms whose total equity is negative and several times the magnitude of total assets. Figure 15 shows the mean capital expenditure to assets ratio for firms that drew down their credit lines compared to firms with no recorded drawdowns, normalizing each series relative to its level in 2019Q4.[6] Before the pandemic, the equity to assets ratio was decreasing for firms with a drawdown and firms that did not have a drawdown. It was generally decreasing slightly faster for firms that did not have a drawdown, but this difference is relatively small compared to the large relative decrease in the equity to assets ratio for the firms that had a drawdown at the start of the pandemic in 2020Q1. This likely reflects the fact that drawing down a credit line directly increases a firm's indebtedness. However, from 2020Q1 to 2020Q3 a substantial fraction of this relative decline in the equity ratio for the firms that had a drawdown is recovered, which is consistent with repayment of the drawdowns.

[6] As in Figure 9, the left panel shows this comparison for all industries, the middle panel restricts to industries that were relatively exposed to the shutdown, and the right panel restricts to industries that were relatively unexposed to the shutdown.

Table 29 shows the results from estimating the panel specification given by equation (3). Consistent with Figure 15, firms that had a drawdown exhibited a significantly lower equity to assets ratio relative to 2019Q4 before the pandemic within the sample of all firms and the subsample of relatively unexposed firms. In all three samples, the difference between the two groups of firms widens in 2020Q1 and partially recovers by 2020Q3.

Table 30 shows the results from estimating the cross-sectional specification given by equation (4) and also includes interactions of drawdowns and the control variables with the industry exposure subsets. The results indicate that drawdowns were associated with a relative decline in the equity to assets ratio from 2019Q4 to 2020Q1 and a relative increase from 2020Q1 to 2020Q3. Table 31 shows the results when instrumenting drawdowns with undrawn credit. The results with the instrument are qualitatively similar to the OLS results with some variation in statistical significance.

6.5.2 Intensive margin

Figure 16 shows the difference in the liquid assets to total assets ratio from 2019Q4 to 2020Q1 for firms that drew down their credit lines relative to the magnitude of the drawdown after partialling out the control variables specified in equation (4). Drawdown size was associated with a decline in the equity to assets ratio, with a slightly stronger effect for firms in relatively exposed industries.

Table 32 shows the results from estimating the cross-sectional specification given by equation (4) except restricting to firms that had a drawdown and using the magnitude of drawdowns in place of an indicator. In this specfication, drawdown size is associated with an immediate reduction in the equity to assets ratio and a subsequent partial recovery. The interactions with industry exposure to the pandemic are not statistically significant. Table 33 shows the results when instrumenting drawdowns with undrawn credit. The estimates with the instrument are similar to the OLS results.

7 Conclusion

This paper examines how firms used credit line drawdowns during the COVID-19 shutdown. Drawdowns were strongly associated with increased cash holdings in the short-run, consistent with the interpretation that firms sought to reduce future liquidity risk. We do not find strong evidence that firms used credit line drawdowns to maintain physical investment or employment during the pandemic. Instead, drawdowns were associated with an increase in the equity to assets ratio as the economy stabilized from 2020Q1 to 2020Q3, which suggests firms were repaying their drawdowns. However, there is some evidence that firms in industries that were relatively unexposed to the economic restrictions associated with the shutdown were relatively more likely to use their credit lines to maintain investment during the shutdown, especially if they drew a modest amount of funds.

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A Figures

Figure 1: The top panel shows the median net income to assets ratio. The bottom panel shows the median net income to assets ratio relative to the 2019Q4 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

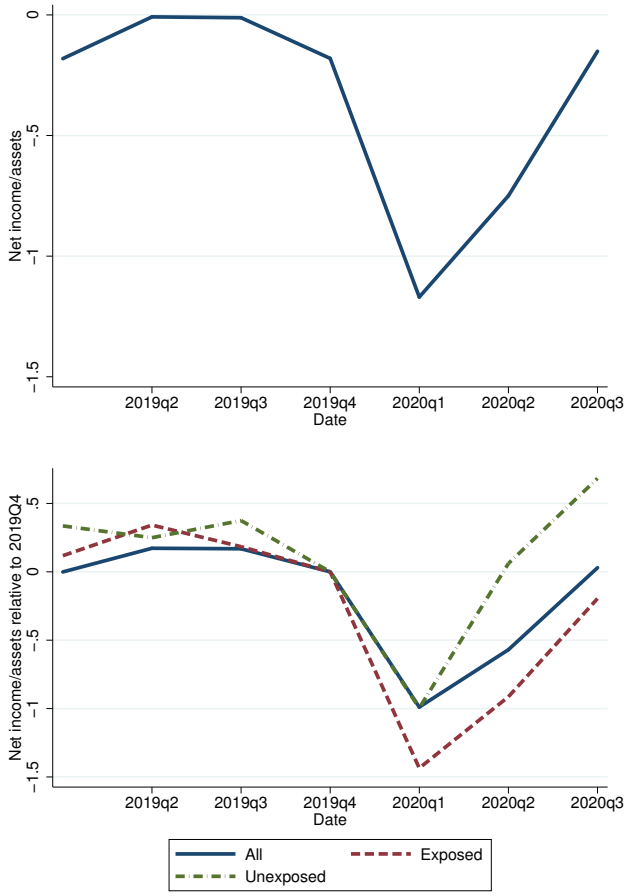


Figure 2: The top panel shows the mean of liquidity stress. The bottom panel shows the mean of liquidity stress relative to the 2019Q4 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

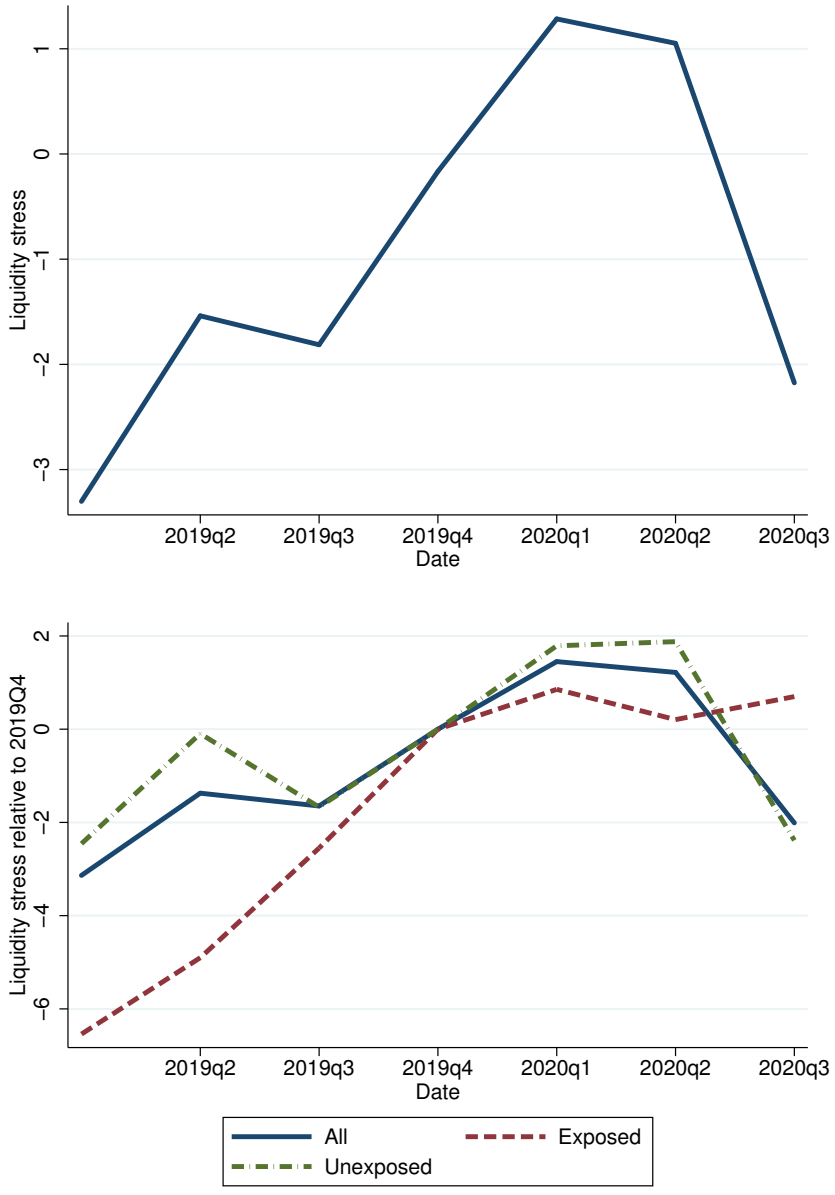


Figure 3: The top panel shows the fraction of firms that have drawn down a credit line as of March 1, 2020. The bottom panel shows the fraction of firms that have drawn down a credit line for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

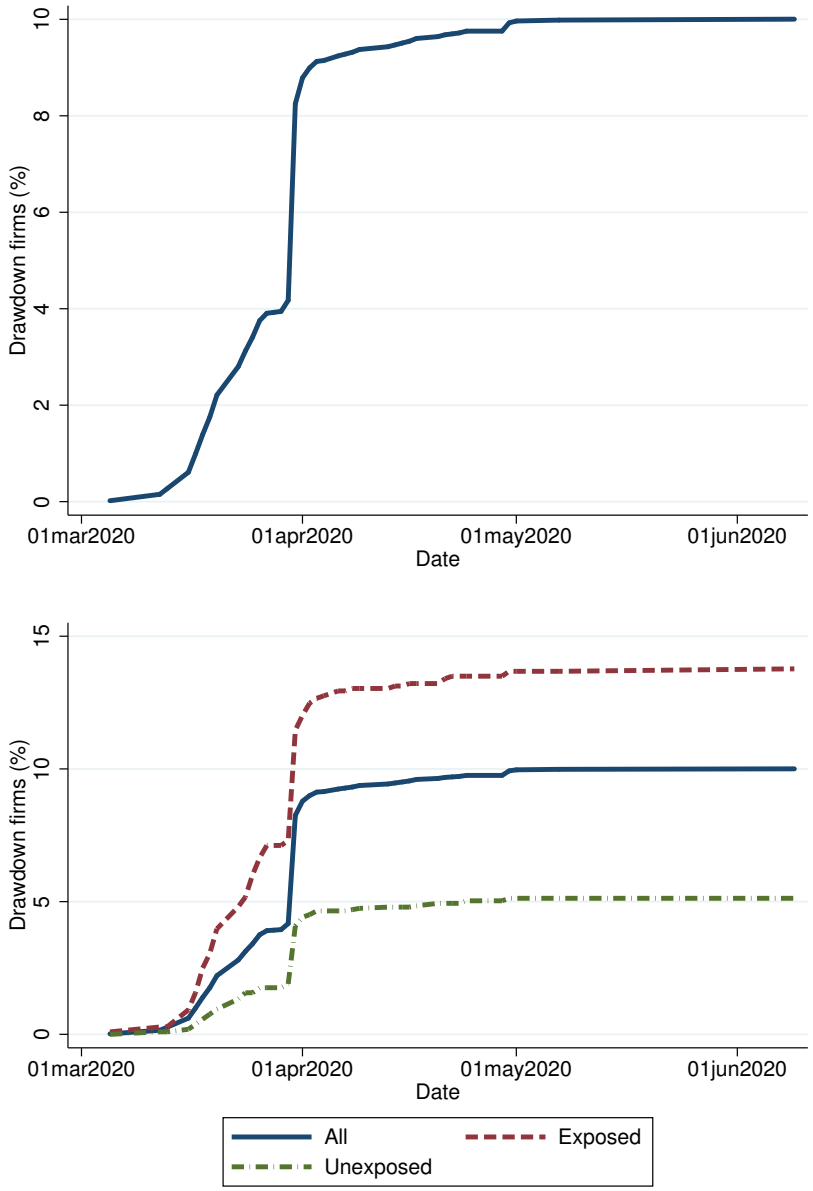


Figure 4: The top panel shows the mean credit line drawdown among all firms that have drawn down as of March 1, 2020. The bottom panel shows the mean drawdown for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

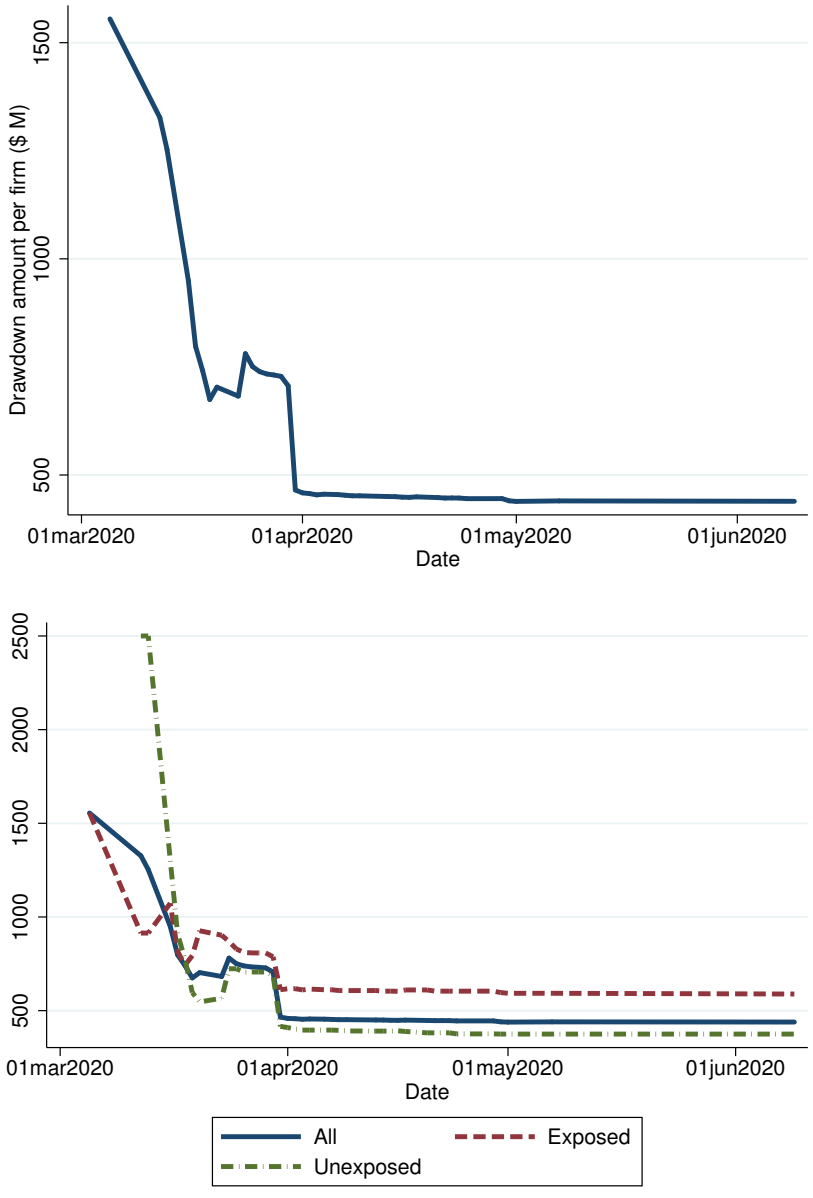


Figure 5: The top panel shows the mean of liquid assets (cash and short-term investments) to total assets. The bottom panel shows the mean of liquid assets to total assets relative to the 2019Q4 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

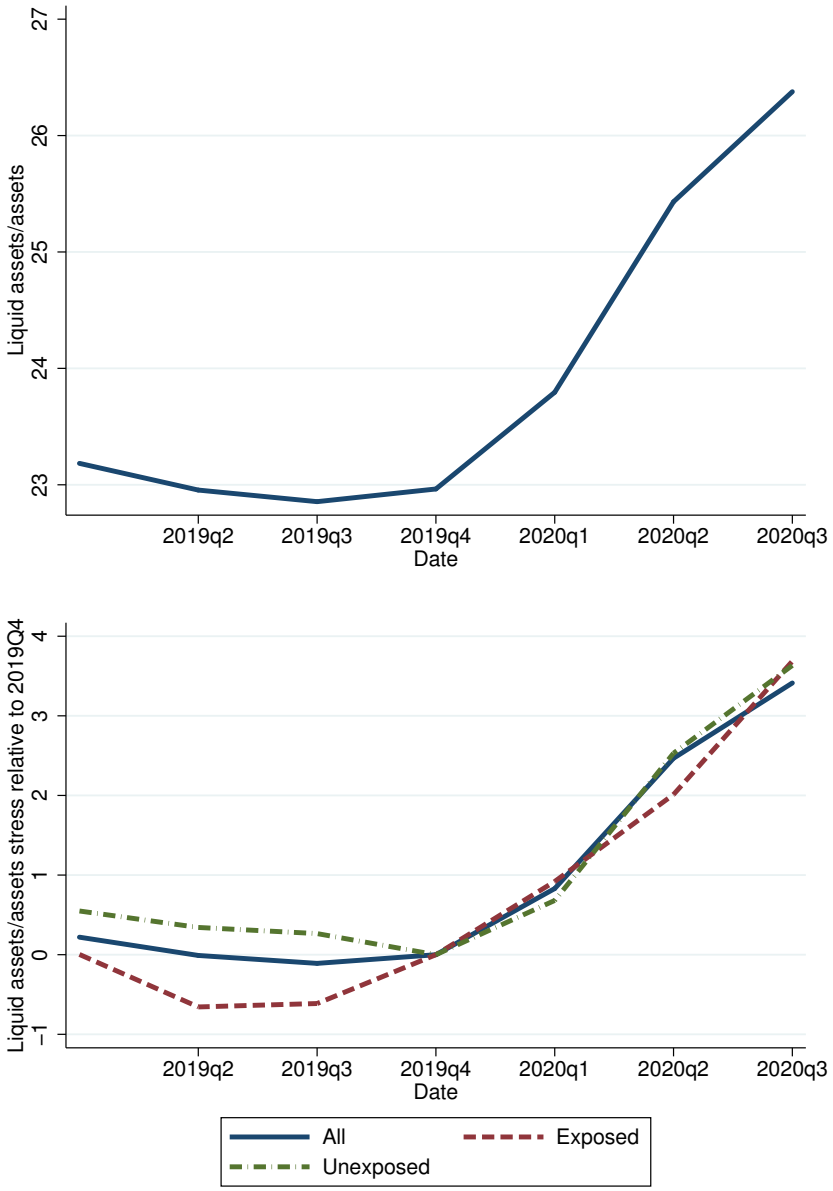


Figure 6: The top panel shows the mean of capital expenditure to assets. The bottom panel shows the mean of capital expenditure to assets relative to the 2019Q4 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

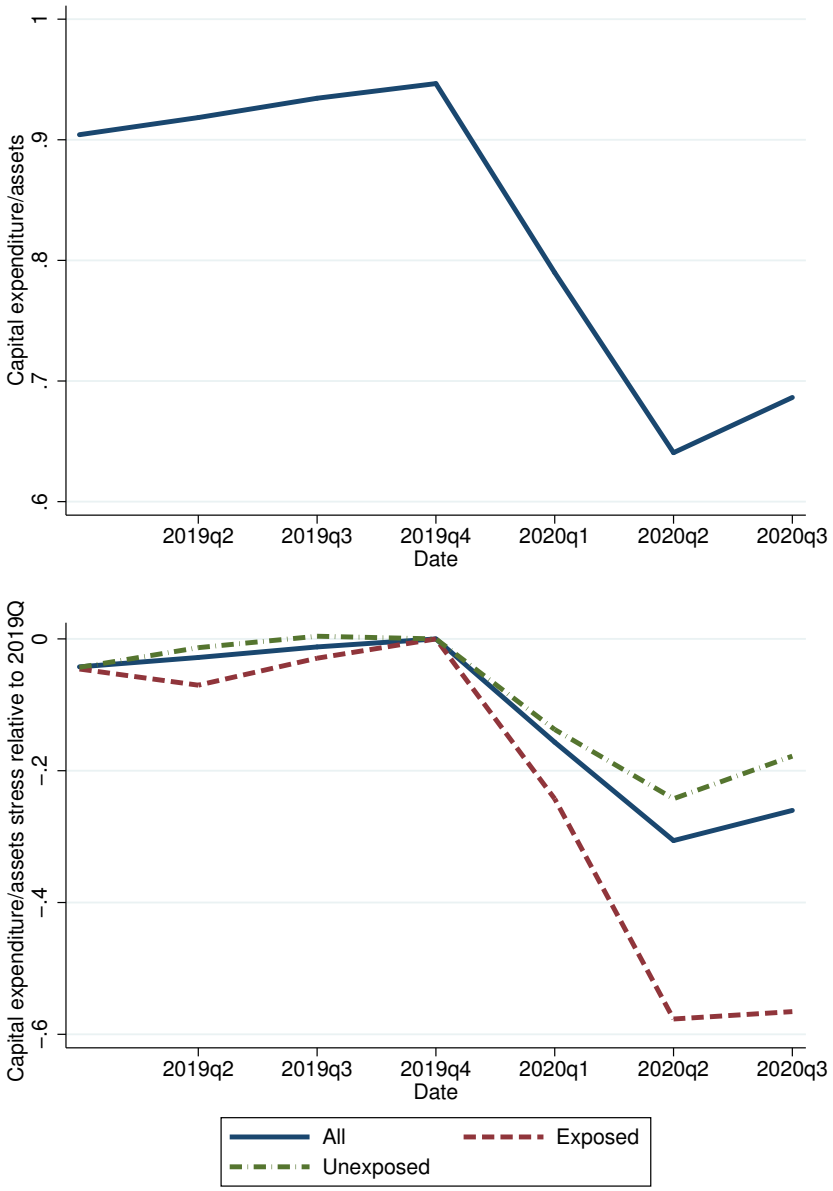


Figure 7: The top panel shows the mean of the logarithm of the number of employees. The bottom panel shows the mean of the logarithm of the number of employees relative to the 2019 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

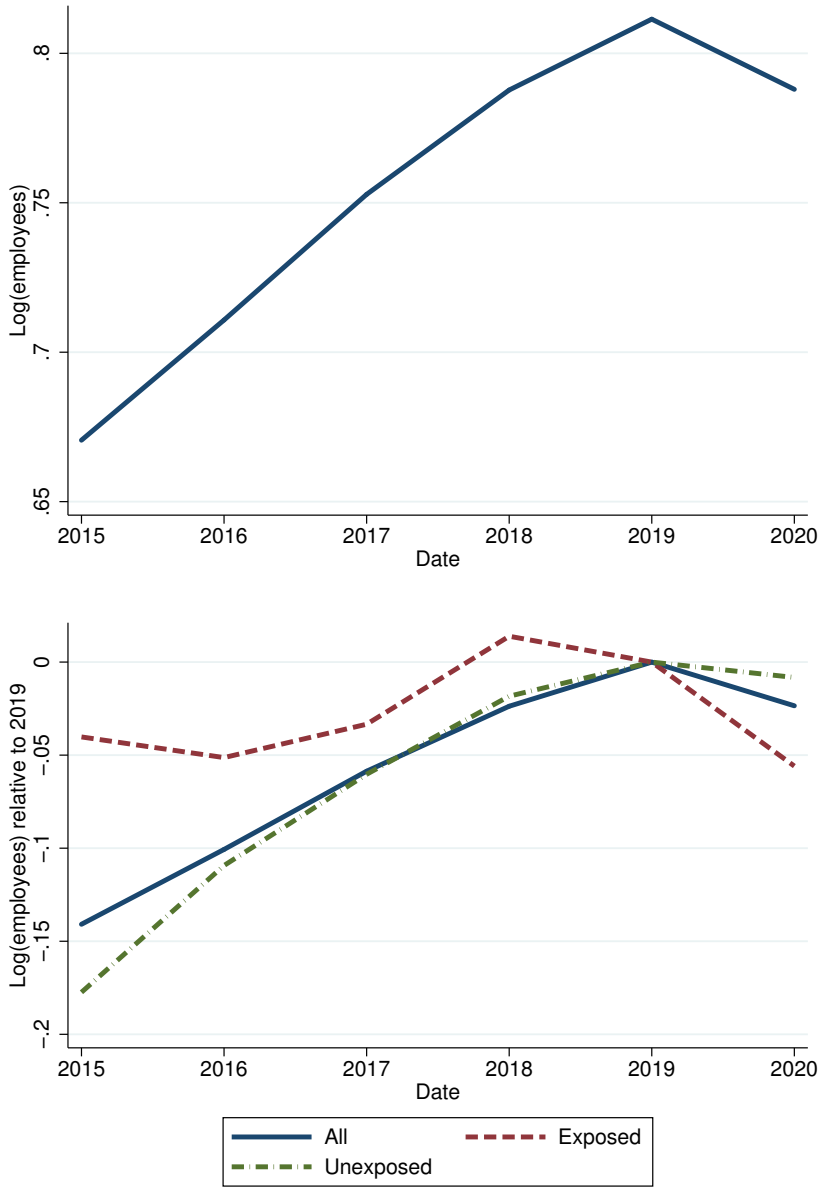


Figure 8: The top panel shows the mean of equity to assets. The bottom panel shows the mean of equity to assets relative to the 2019Q4 level for three industry groups: all firms, firms in industries that were relatively exposed to the COVID-19 shutdown, and firms in industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

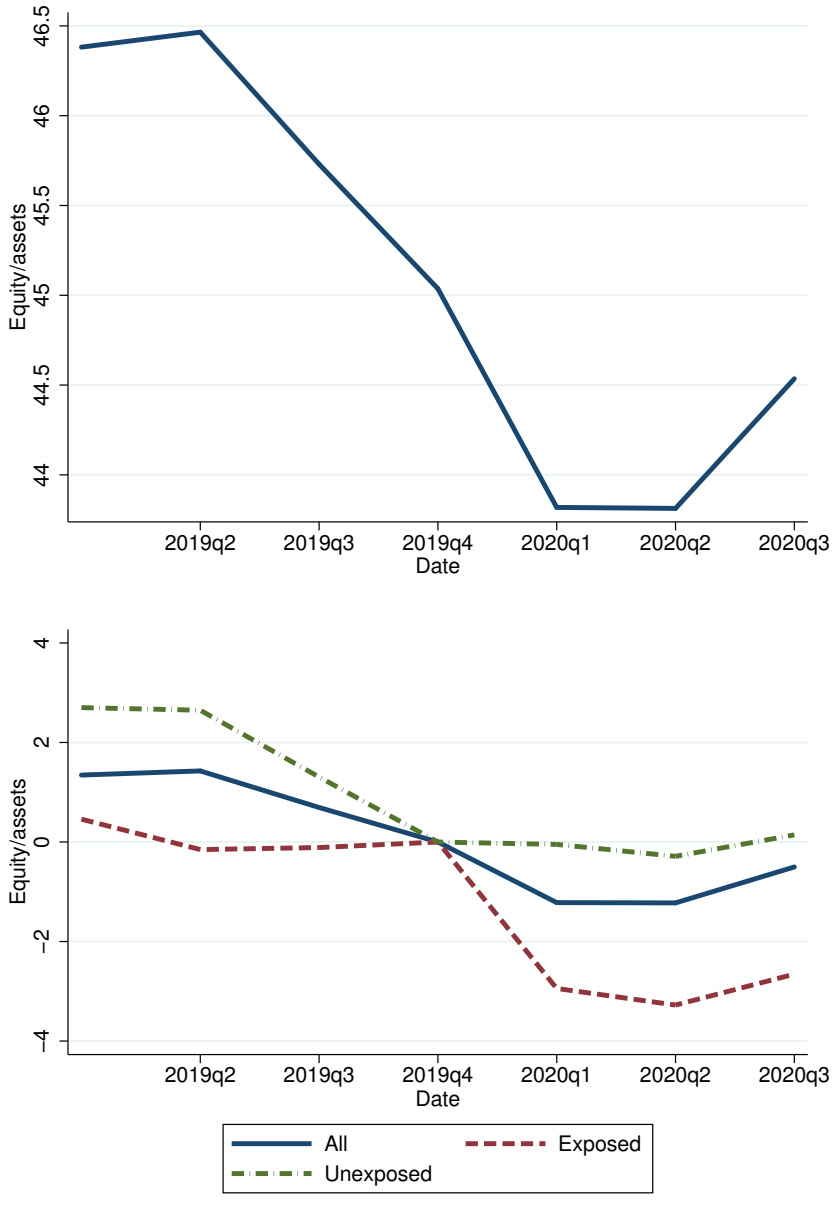


Figure 9: The left panel shows the mean ratio of liquid assets (cash and short-term investments) to total assets relative to the 2019Q4 level for firms that drew funds from a credit line and for firms that did not. The middle panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown. The right panel shows the same within the subset of industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

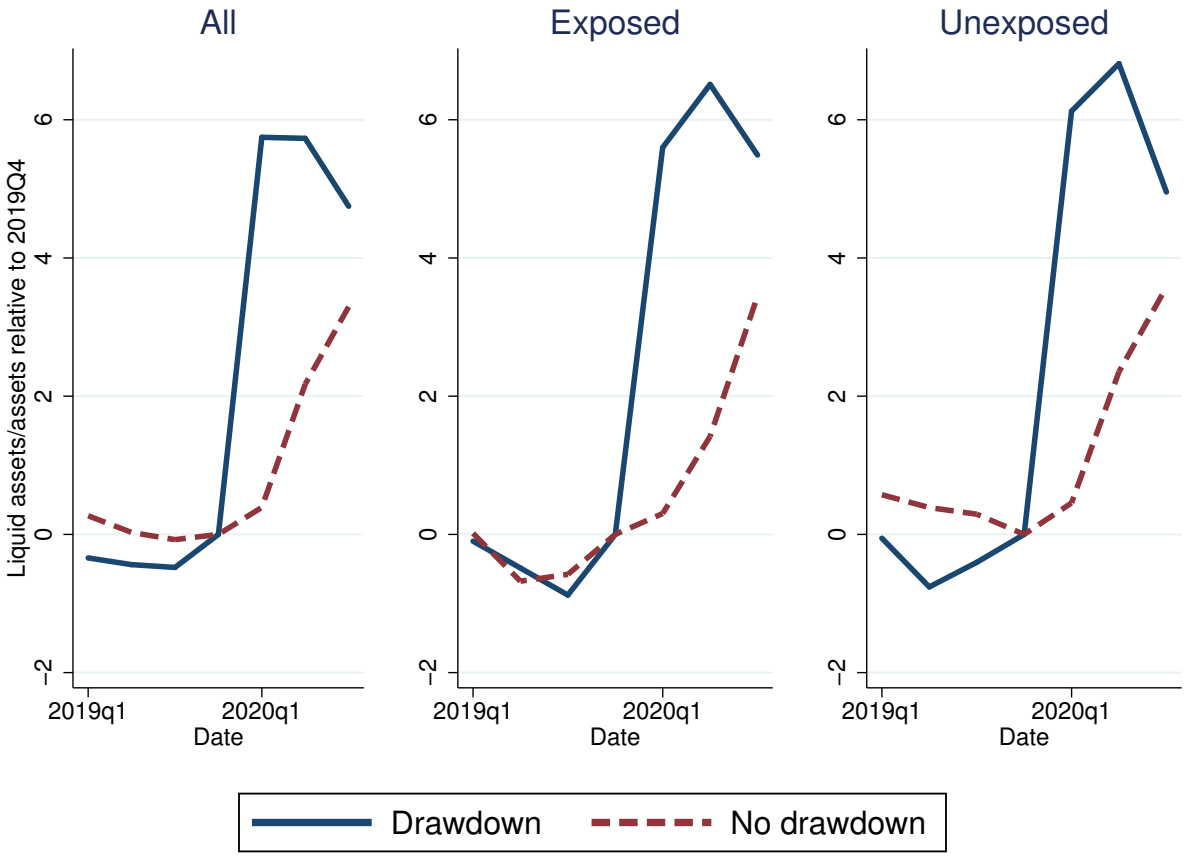


Figure 10: The left panel shows a binned scatterplot of the difference in the ratio of liquid assets (cash and short-term investments) to total assets and short-term investments) to assets from 2019Q4 to 2020Q1 for firms that drew from a credit line on the y-axis and the logarithm of total funds acquired through a credit line drawdown during March 2020 on the x-axis. The right panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown and the subset of industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

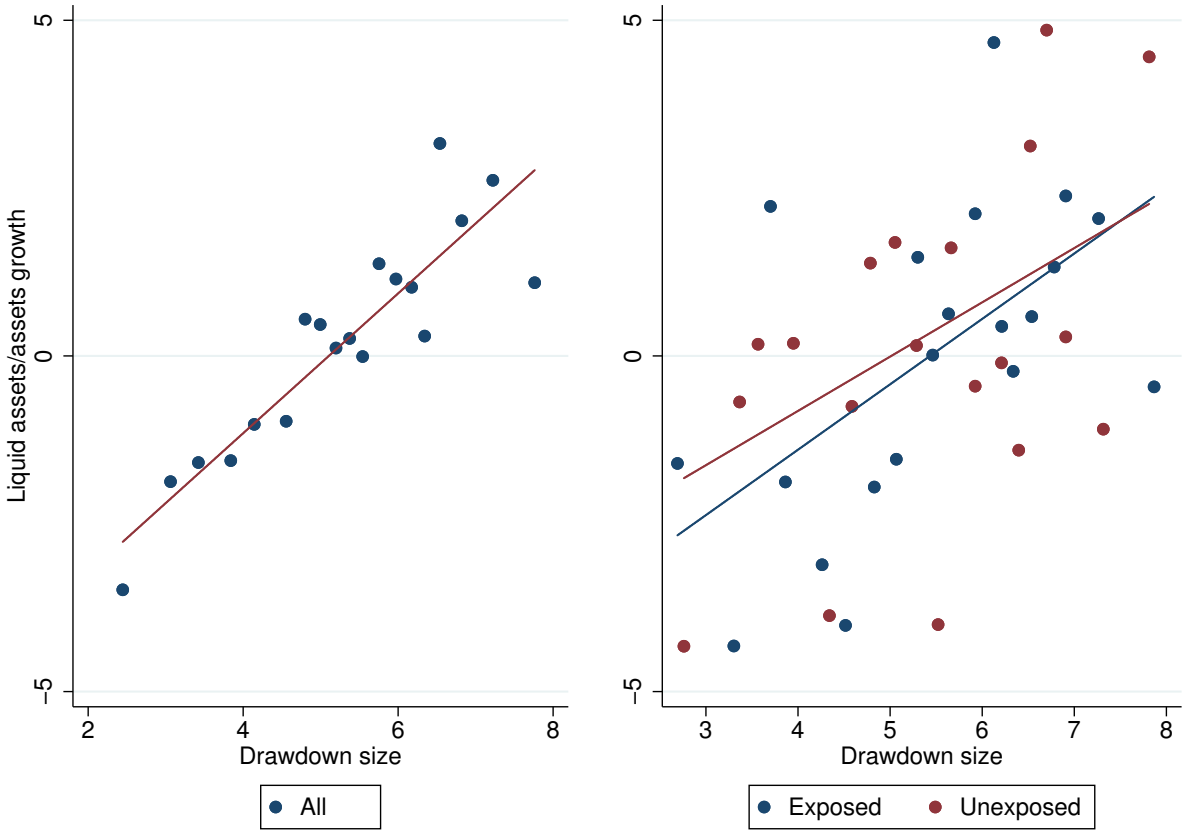


Figure 11: The left panel shows the mean ratio of capital expenditure to assets relative to the 2019Q4 level for firms that drew funds from a credit line and for firms that did not. The middle panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown. The right panel shows the same within the subset of industries that were less exposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

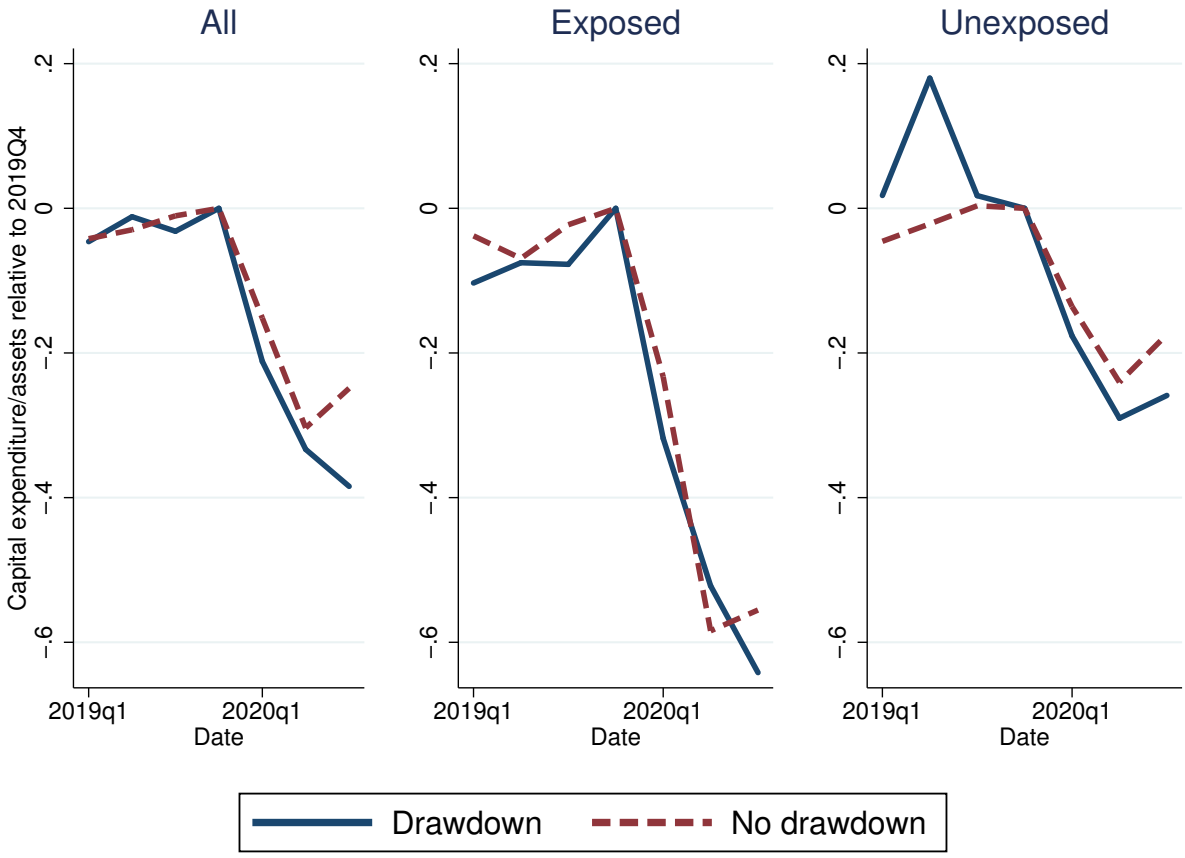


Figure 12: The left panel shows a binned scatterplot of the difference in the ratio of capital expenditure to assets from 2019Q4 to 2020Q1 for firms that drew from a credit line on the y-axis and the logarithm of total funds acquired through a credit line drawdown during March 2020 on the x-axis. The right panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown and industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

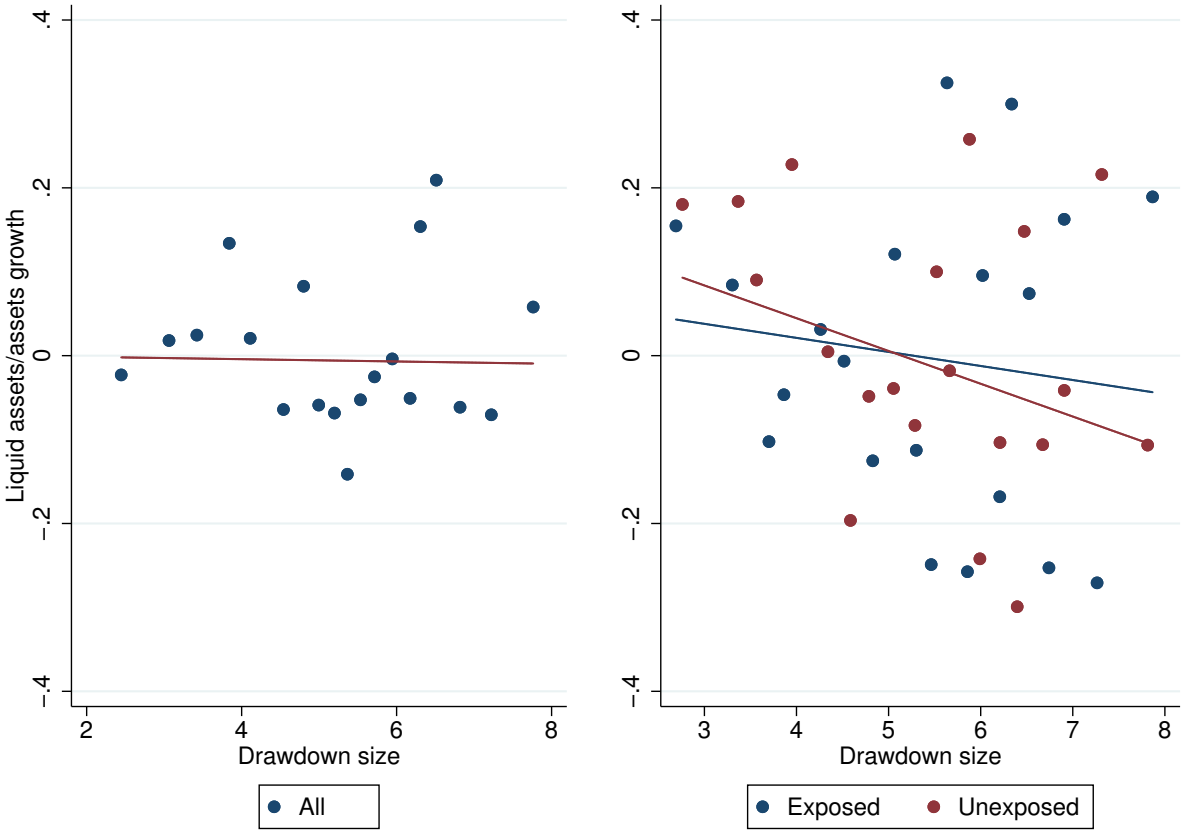


Figure 13: The left panel shows the mean of the logarithm of employees assets relative to the 2019 level for firms that drew funds from a credit line and for firms that did not. The middle panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown. The right panel shows the same within the subset of industries that were less exposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

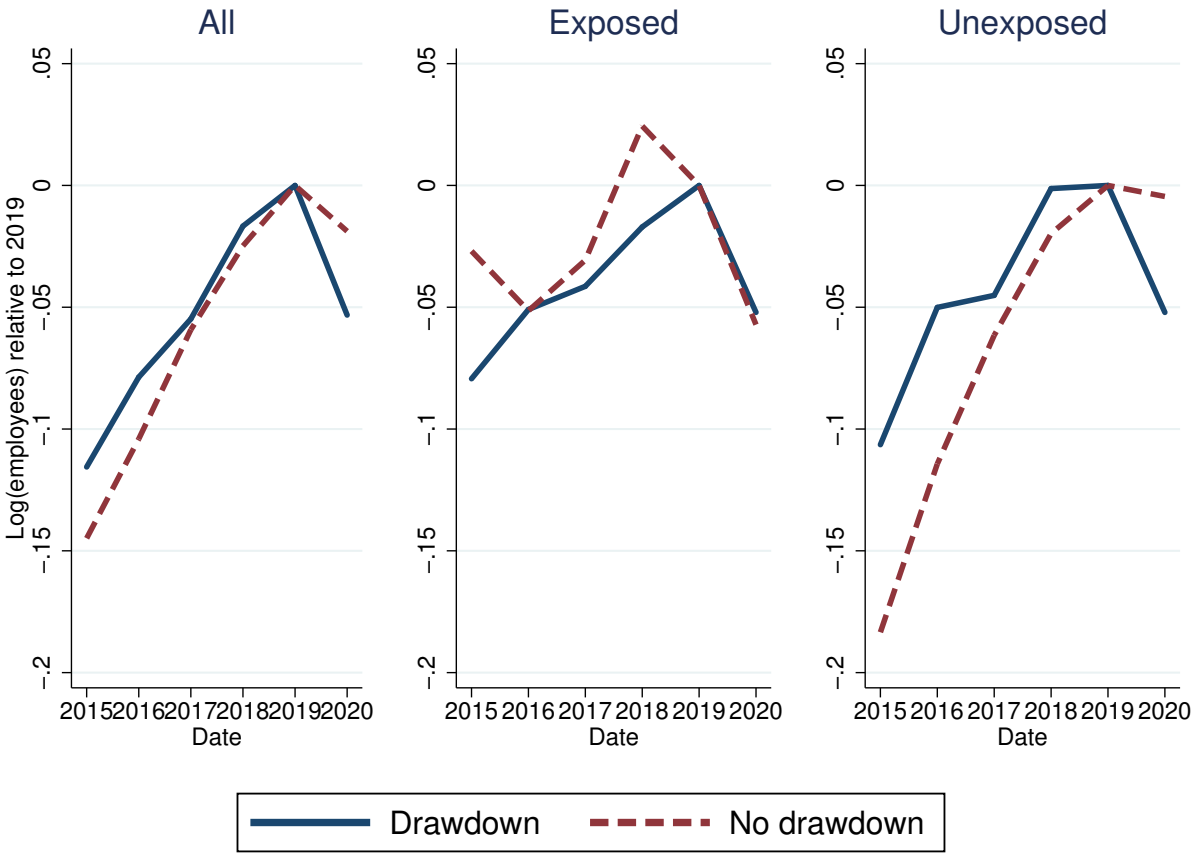


Figure 14: The left panel shows a binned scatterplot of the difference in the logarithm of the number of employees from 2019 to 2020 for firms that drew from a credit line on the y-axis and the logarithm of total funds acquired through a credit line drawdown during March 2020 on the x-axis. The right panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown and industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

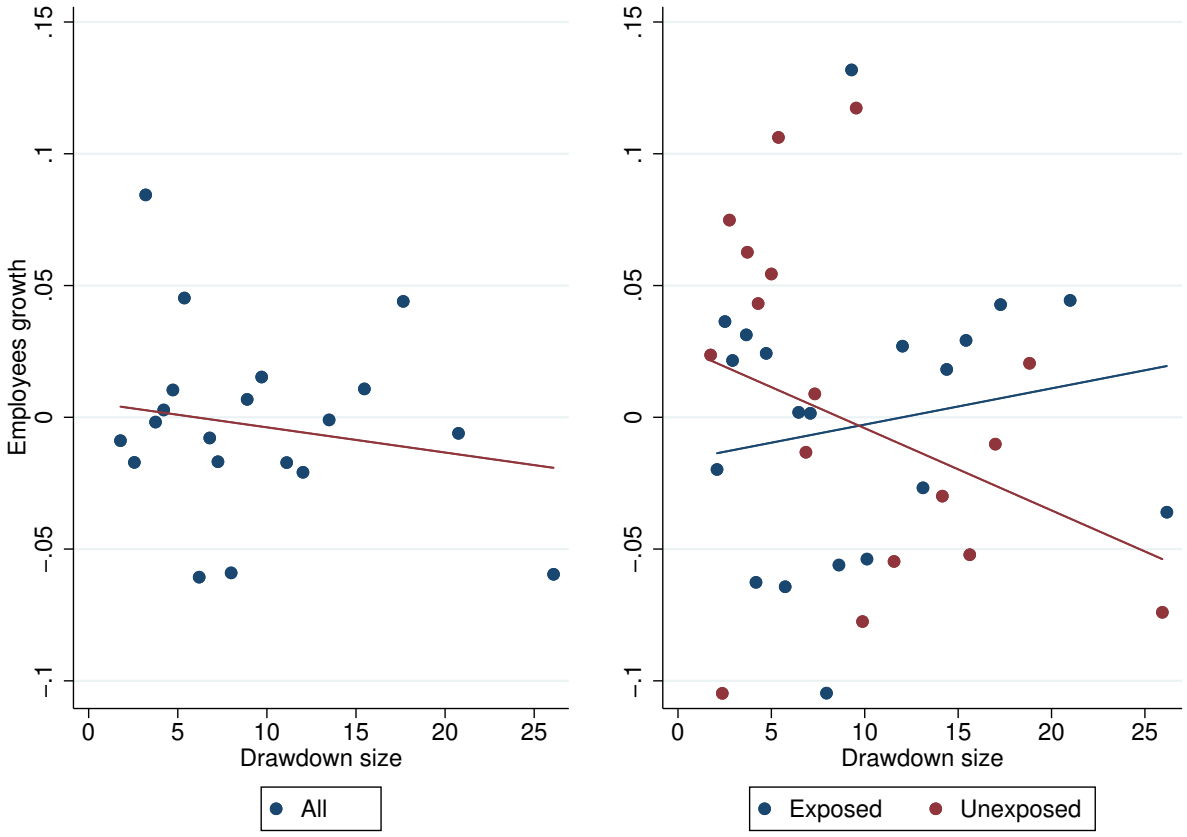


Figure 15: The left panel shows the mean of equity to assets relative to the 2019 level for firms that drew funds from a credit line and for firms that did not. The middle panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown. The right panel shows the same within the subset of industries that were less exposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).

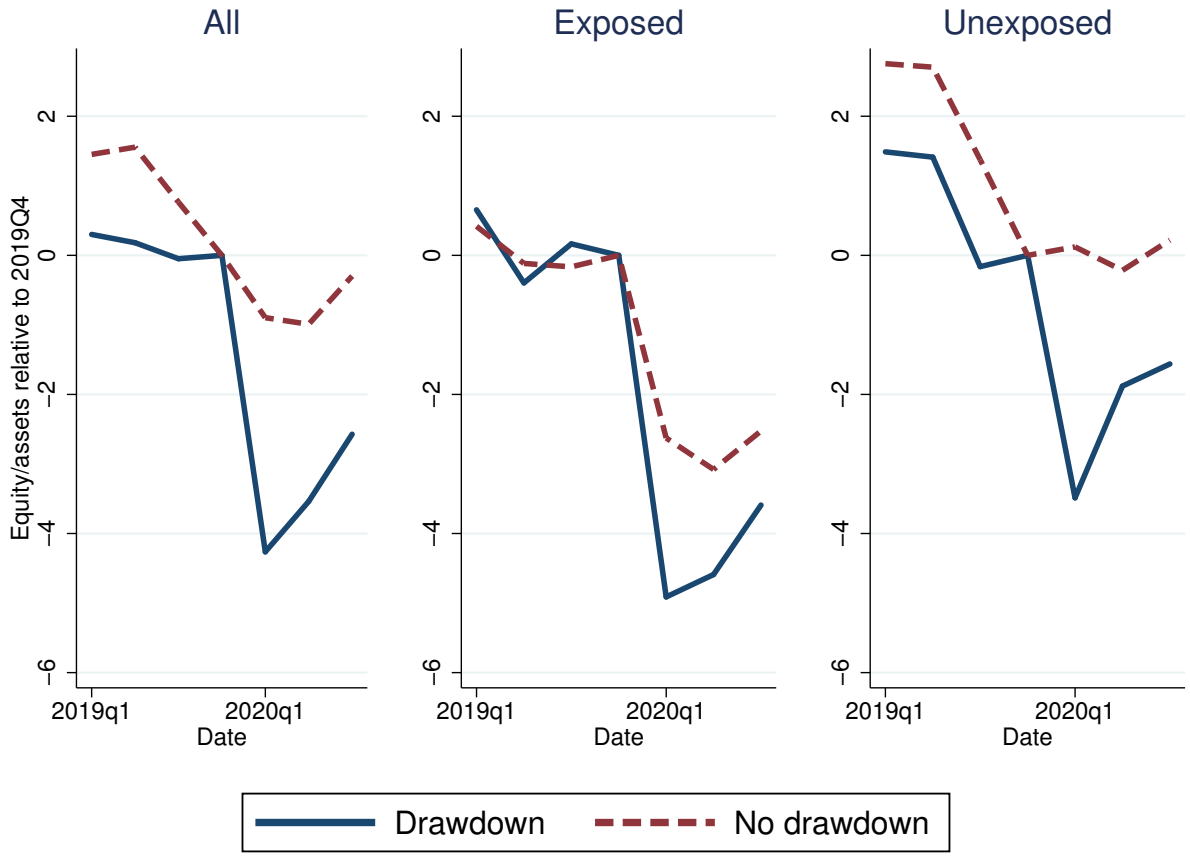
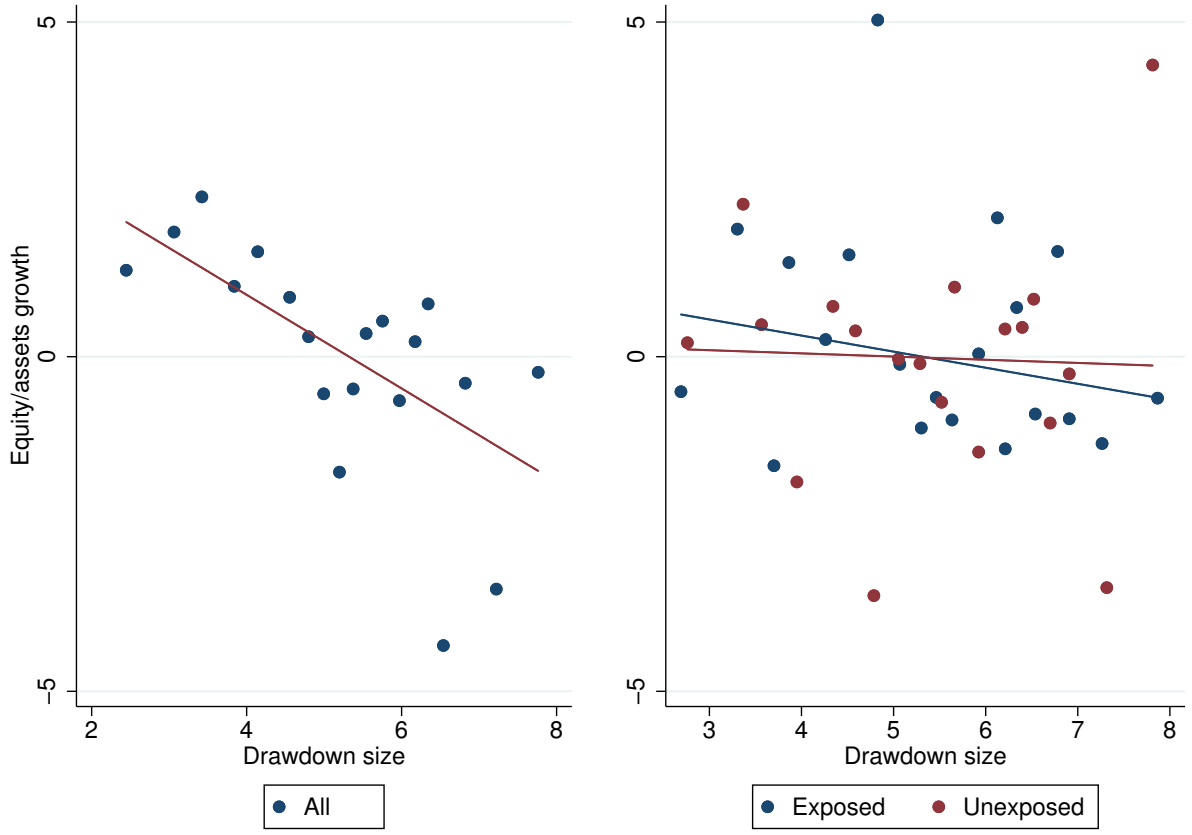


Figure 16: The left panel shows a binned scatterplot of the difference in the ratio of equity to assets from 2019 to 2020 for firms that drew from a credit line on the y-axis and the logarithm of total funds acquired through a credit line drawdown during March 2020 on the x-axis. The right panel shows the same within the subset of industries that were relatively exposed to the COVID-19 shutdown and industries that were relatively unexposed to the COVID-19 shutdown (see Section 3 for a more detailed description of the industry groups).



B Tables

Table 1: Summary statistics. Drawdown is a dummy indicating whether a firm drew funds from a credit line in March 2020, Drawdown size is the sum of drawdowns during March 2020 in millions of USD for firms that drew funds from a credit line, Exposed is a dummy indicating whether a firm was in an industry that was relatively exposed to the COVID-19 shutdown, Unexposed is a dummy indicating wheth a firm was in an industry that relatively unexposed to the shutdown (see Section 3 for a more detailed description of the industry groups), Log(assets) is the logarithm of total assets in millions of USD in 2019Q4, Stress is liquidity stress as defined in equation (1) in 2020Q1, Liquid assets/assets is the percentage of cash and short-term investments to total assets in 2020Q4, Capex/assets is the percentage of capital expenditure to total assets in 2020Q4, Log(employees) is the logarithm of the number of employees in thousands in 2019, and Equity/assets is the percentage of book equity to assets in 2019Q4.

	N	Mean	SD	P25	P75
Drawdown	5312	0.08	0.27	0.00	0.00
Drawdown size ($ m)	424	401.23	546.60	75.00	500.00
Exposed	5312	0.21	0.40	0.00	0.00
Unexposed	5312	0.40	0.49	0.00	1.00
Log(assets)	5240	5.63	3.00	3.64	7.89
Stress (%)	5097	1.20	69.84	-23.73	3.67
Liquid assets/assets (%)	5239	22.95	27.45	3.01	33.34
Capex/assets (%)	5086	0.91	1.29	0.03	1.18
Log(employees)	1561	0.86	2.69	-0.89	2.84
teqqatq 19Q4	4508	43.37	49.79	29.23	67.88

Table 2: This table compares firms that drew funds from a credit line to firms with no recorded drawdowns. The first row presents the number of observations in each group, and the remaining rows present the respective means as well as the t-statistic from a difference in means test.

	Drawdown	No drawdown	T-statistic
N	428	4,651	
Upon impact			
Exposed (2019Q4)	0.297	0.198	4.375
Unexposed (2019Q4)	0.194	0.420	-11.17
Log(assets) (2019Q4)	7.895	5.431	31.52
Stress (2020Q1)	–3.515	1.613	-4.246
Liquid assets/assets (2019Q4)	8.560	24.25	-26.991
Capex/assets (2019Q4)	0.949	0.907	.853
Log(employees) (2019)	2.296	0.630	11.977
Equity/assets (2019Q4)	35.70	44.18	-6.19
Initial response (2019Q4–2020Q1)			
Δ Liquid assets/assets	5.671	0.449	20.594
Δ Capex/assets	–0.212	–0.144	-2.548
Δ Equity/assets	–4.261	–3.346	-2.435
Later response (2020Q1–2020Q3)			
Δ Liquid assets/assets	–0.876	2.754	-10.307
Δ Capex/assets	–0.165	–0.106	-1.932
Δ Equity/assets	1.689	1.147	1.174
Annual response (2019–2020)			
Δ Log(employees)	–0.0535	–0.0152	-3.629

Table 3: This table compares firms that drew funds from a credit line to firms with no recorded drawdowns for firms in industries that were relatively exposed to the COVID-19 shutdown. The first row presents the number of observations in each group, and the remaining rows present the respective means as well as the t-statistic from a difference in means test.

	Drawdown	No drawdown	T-statistic
N	125	937	
Upon impact			
Exposed (2019Q4)	1	1	
Unexposed (2019Q4)	0	0	
Log(assets) (2019Q4)	8.197	5.452	16.739
Stress (2020Q1)	0.0943	13.55	-5.277
Liquid assets/assets (2019Q4)	7.798	13.86	-6.767
Capex/assets (2019Q4)	1.167	1.486	-3.267
Log(employees) (2019)	2.817	0.671	8.877
Equity/assets (2019Q4)	32.01	40.29	-2.716
Initial response (2019Q4–2020Q1)			
Δ Liquid assets/assets	5.596	0.353	10.709
Δ Capex/assets	–0.318	–0.210	-1.808
Δ Equity/assets	–4.912	–5.414	.63
Later response (2020Q1–2020Q3)			
Δ Liquid assets/assets	–0.0544	2.599	-3.996
Δ Capex/assets	–0.331	–0.285	-.65
Δ Equity/assets	1.321	2.023	-.639
Annual response (2019–2020)			
Δ Log(employees)	–0.0583	–0.0556	-.148

Table 4: This table compares firms that drew funds from a credit line to firms with no recorded drawdowns for firms in industries that were relatively unexposed to the COVID-19 shutdown. The first row presents the number of observations in each group, and the remaining rows present the respective means as well as the t-statistic from a difference in means test.

	Drawdown	No drawdown	T-statistic
N	84	1,961	
Upon impact			
Exposed (2019Q4)	0	0	
Unexposed (2019Q4)	1	1	
Log(assets) (2019Q4)	7.862	4.994	17.219
Stress (2020Q1)	–4.692	–2.974	-.821
Liquid assets/assets (2019Q4)	8.342	31.76	-19.81
Capex/assets (2019Q4)	1.031	0.849	1.739
Log(employees) (2019)	2.811	0.409	7.96
Equity/assets (2019Q4)	36.98	45.70	-2.953
Initial response (2019Q4–2020Q1)			
Δ Liquid assets/assets	5.816	0.405	11.17
Δ Capex/assets	–0.176	–0.134	-.954
Δ Equity/assets	–3.479	–2.731	-1.263
Later response (2020Q1–2020Q3)			
Δ Liquid assets/assets	–0.858	3.042	-4.796
Δ Capex/assets	–0.0854	–0.0696	-.267
Δ Equity/assets	1.915	0.910	1.2
Annual response (2019–2020)			
Δ Log(employees)	–0.0446	0.000589	-1.968

Table 5: Predictors of credit line drawdowns (extensive margin). This table presents results from estimating variations of the logistic model $Drawdown_{ij} = \beta X_{ij} + \alpha_j + \epsilon_{ij}$, where $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, α_j represents industry fixed effects, and X_{ij} is a set of predictors. Note that liquidity stress is as of 2020Q1 and the remaining predictors are as of 2019Q4. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from a baseline set of predictors. Column (2) shows the results when liquidity stress is replaced with its components as shown in equation (1).

	(1) Baseline	(2) Components
Stress	0.002*	
	(1.79)	
Capex/assets	0.018	0.006
	(0.35)	(0.11)
Log (assets)	0.330***	0.239***
	(12.09)	(6.69)
Exposed	-0.228	-0.378
	(-0.43)	(-0.68)
Unexposed	-1.141***	-1.203***
	(-4.18)	(-4.19)
Net income/assets		0.005
		(0.91)
Short-term debt/assets		-0.042***
		(-4.22)
Liquid assets/assets		-0.031***
		(-4.59)
Observations	4943	4940
Pseudo R^2	0.094	0.121
Industry FE	Yes	Yes

Table 6: Predictors of credit line drawdowns (extensive margin, industry exposure subsets). This table presents results from estimating variations of the logistic model $Drawdown_{ij} = \beta X_{ij} + \alpha_j + \epsilon_{ij}$ for subsets corresponding to firms that were relatively exposed or relatively unexposed to the COVID-19 pandemic, where $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, α_j represents industry fixed effects, and X_{ij} is a set of predictors. Note that liquidity stress is as of 2020Q1 and the remaining predictors are as of 2019Q4. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from a baseline set of predictors. Column (2) shows the results when liquidity stress is replaced with its components as shown in equation (1).

	(1) Exposed	(2) Exposed	(3) Unexposed	(4) Unexposed
Stress	-0.004		0.001	
	(-0.46)		(0.39)	
Capex/assets	0.010	0.020	-0.015	-0.071
	(0.11)	(0.23)	(-0.16)	(-0.68)
Log (assets)	0.390***	0.380***	0.359***	0.245***
	(5.27)	(3.94)	(6.09)	(3.60)
Net income/assets		-0.032**		0.053***
		(-2.52)		(2.62)
Short-term debt/assets		-0.052***		-0.034
		(-4.69)		(-1.31)
Liquid assets/assets		-0.010		-0.031***
		(-0.74)		(-2.64)
Observations	1047	1047	1984	1983
Pseudo R^2	0.084	0.110	0.093	0.129
Industry FE	Yes	Yes	Yes	Yes

Table 7: Predictors of credit line drawdowns (intensive margin). This table presents results from estimating variations of the logistic model $DrawdownSize_{ij} = \beta X_{ij} + \alpha_j + \epsilon_{ij}$, where $DrawdownSize_{ij}$ is the logarithm of total credit line drawdowns during March 2020 , α_j represents industry fixed effects, and X_{ij} is a set of predictors. Note that liquidity stress is as of 2020Q1 and the remaining predictors are as of 2019Q4. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from a baseline set of predictors. Column (2) shows the results when liquidity stress is replaced with components as show in equation (1).

	(1) Baseline	(2) Components
Stress	-0.004	
	(-1.13)	
Capex/assets	0.026	0.027
	(0.55)	(0.57)
Log (assets)	0.904***	0.906***
	(32.87)	(32.32)
Exposed	0.016	0.024
	(0.06)	(0.09)
Unexposed	-0.140	-0.122
	(-0.66)	(-0.57)
Net income/assets		0.004
		(0.69)
Short-term debt/assets		0.006
		(0.63)
Liquid assets/assets		0.006
		(1.22)
Observations	395	395
R^2	0.756	0.757
Industry FE	Yes	Yes

Table 8: Predictors of credit line drawdowns (intensive margin, industry exposure subsets). This table presents results from estimating variations of the model $DrawdownSize_{ij} = \beta X_{ij} + \alpha_j + \epsilon_{ij}$ one subsets corresponding to firms that were relatively exposed or relatively unexposed to the COVID-19 pandemic, where $DrawdownSize_{ij}$ is the logarithm of total credit line drawdowns during March 2020 , α_j represents industry fixed effects, and X_{ij} is a set of predictors. Note that liquidity stress is as of 2020Q1 and the remaining predictors are as of 2019Q4. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from a baseline set of predictors. Column (2) shows the results when liquidity stress is replaced with components as show in equation (1).

	(1)	(2)	(3)	(4)
	Exposed	Exposed	Unexposed	Unexposed
Stress	0.008		-0.004	
	(1.38)		(-0.59)	
Capex/assets	0.149*	0.162**	0.099	0.073
	(1.92)	(2.00)	(0.99)	(0.75)
Log (assets)	0.933***	0.923***	0.790***	0.793***
	(17.87)	(17.32)	(15.18)	(15.40)
Net income/assets		0.018		0.027
		(1.08)		(1.14)
Short-term debt/assets		-0.001		0.048***
		(-0.13)		(3.45)
Liquid assets/assets		-0.025***		0.022**
		(-2.79)		(2.47)
Observations	118	118	80	80
R^2	0.789	0.799	0.789	0.825
Industry FE	Yes	Yes	Yes	Yes

Table 9: First stage. This table presents results from estimating the equation $Y_{ij} = \beta Undrawn_{ij} + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where Y_{ij} is either a dummy indicating whether firm i in 2-digit NAICS industry j drew funds from a credit line in March 2020 (Column (1)) or the logarithm of total credit line drawdowns during March 2020 (Column (2)), $Undrawn_{ij}$ is the logarithm of undrawn revolving credit commitments as of the end of 2019, X_{ij} is a set of controls that the logarithm of total assets in 2019Q4 and liquidity stress in 2020Q1, and α_j represents industry fixed effects. Column (2) restricts to the subset of a firms with a positive drawdown.

	(1) Drawdown	(2) Drawdown size
Undrawn credit	0.016***	0.264***
	(3.97)	(4.97)
Observations	2827	395
R^2	0.070	0.784
Controls	Yes	Yes
Industry FE	Yes	Yes

Table 10: This table presents the coefficient and t-statistic from regressing each variable on the logarithm of undrawn revolving credit commitments as of the end of 2019 and computing heteroskedasticity-robust standard errors.

	Coefficient	T-statistic
Exposed (2019Q4)	.012	4.237
Unexposed (2019Q4)	-.012	-3.535
Log(assets) (2019Q4)	.714	49.771
Stress (2020Q1)	-1.293	-3.187
Liquid assets/assets (2019Q4)	-1.561	-12.106
Capex/assets (2019Q4)	.026	2.969
Log(employees) (2019)	.645	26.162
Equity/assets (2019Q4)	2.667	3.298

Table 11: Effect of credit line drawdowns on liquid assets to total assets (extensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t Drawdown_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is liquid assets to total assets for firm i in quarter t, α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $Drawdown_i$ is a dummy representing whether a firm drew funds from a credit line in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using firm-clustered standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results for all firms in the sample. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1) All	(2) Exposed	(3) Unexposed
Drawdown x 2019Q2	-0.456	0.069	-1.187**
	(-1.45)	(0.15)	(-2.07)
Drawdown x 2019Q3	-0.446*	-0.313	-0.643
	(-1.75)	(-0.65)	(-1.38)
Drawdown x 2020Q1	5.230***	5.376***	5.531***
	(16.52)	(9.52)	(7.90)
Drawdown x 2020Q2	3.832***	5.457***	4.223***
	(9.57)	(8.06)	(4.73)
Drawdown x 2020Q3	1.488***	2.189***	1.034
	(3.75)	(2.90)	(1.36)
Observations	29455	6281	12267
R^2	0.920	0.858	0.931
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 12: Effect of credit line drawdowns on liquid assets to total assets (extensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in liquid assets to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown	4.705***	4.680***	-2.514***	-2.866***
	(18.07)	(12.62)	(-6.85)	(-5.73)
Drawdown x Exposed		-0.186		1.688**
		(-0.29)		(1.99)
Drawdown x Unexposed		0.349		-0.456
		(0.57)		(-0.46)
Observations	5092	5092	5090	5090
R^2	0.061	0.063	0.042	0.044
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 13: Effect of credit line drawdowns on liquid assets to total assets (extensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in liquid assets to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	20Q1-20Q3 IV
Drawdown	4.690***	17.521***	-2.553***	-15.954**
	(17.93)	(3.15)	(-7.06)	(-2.36)
Observations	2826	2826	2825	2825
R^2	0.135	-0.643	0.040	-0.451
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 14: Effect of credit line drawdowns on liquid assets to total assets (intensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t DrawdownSize_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is liquid assets to total assets for firm i in quarter t, α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $DrawdownSize_i$ represents the magnitude of total credit line drawdowns in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using firm-clustered standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results for all firms in the sample. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1)	(2)	(3)
	All	Exposed	Unexposed
Drawdown Size x 2019Q2	-0.054	-0.329*	0.746*
	(-0.29)	(-1.83)	(1.76)
Drawdown Size x 2019Q3	0.035	-0.358	0.165
	(0.24)	(-1.42)	(0.55)
Drawdown Size x 2020Q1	0.932***	0.920***	1.048
	(4.36)	(2.81)	(1.36)
Drawdown Size x 2020Q2	0.872***	1.118***	0.754
	(3.43)	(3.01)	(0.96)
Drawdown Size x 2020Q3	0.398*	1.164***	-0.070
	(1.66)	(2.78)	(-0.13)
Observations	2171	703	477
R^2	0.851	0.802	0.857
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 15: Effect of credit line drawdowns on liquid assets to total assets (intensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in liquid assets to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown size	4.103***	4.132***	-2.509***	-2.648***
	(13.01)	(9.37)	(-5.10)	(-4.21)
Drawdown size x Exposed		0.643		0.512
		(0.86)		(0.47)
Drawdown size x Unexposed		-0.298		-0.253
		(-0.36)		(-0.16)
Observations	397	397	397	397
R^2	0.443	0.492	0.192	0.225
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 16: Effect of credit line drawdowns on liquid assets to total assets (intensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in liquid assets to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	20Q1-20Q3 IV
Drawdown size	4.095***	5.066***	-2.586***	-2.727***
	(12.94)	(7.87)	(-5.26)	(-2.72)
Observations	395	395	395	395
R^2	0.443	0.401	0.201	0.115
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 17: Effect of credit line drawdowns on capital expenditure to total assets (extensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t Drawdown_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is capital expenditure to total assets for firm i in quarter t, α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $Drawdown_i$ is a dummy representing whether a firm drew funds from a credit line in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using firm-clustered standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results for all firms in the sample. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1)	(2)	(3)
	All	Exposed	Unexposed
Drawdown x 2019Q2	0.011	-0.013	0.202*
	(0.23)	(-0.13)	(1.77)
Drawdown x 2019Q3	-0.027	-0.056	0.013
	(-0.70)	(-0.61)	(0.25)
Drawdown x 2020Q1	-0.084**	-0.105	-0.050
	(-2.43)	(-1.41)	(-1.01)
Drawdown x 2020Q2	-0.074*	0.025	-0.067
	(-1.70)	(0.22)	(-1.13)
Drawdown x 2020Q3	-0.177***	-0.115	-0.096
	(-4.13)	(-1.14)	(-1.41)
Observations	28668	6194	11941
R^2	0.640	0.603	0.655
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 18: Effect of credit line drawdowns on capital expenditure to total assets (extensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in capital expenditure to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown	-0.035	-0.027	-0.000	-0.028
	(-1.20)	(-0.67)	(-0.00)	(-0.64)
Drawdown x Exposed		-0.050		0.099
		(-0.67)		(1.15)
Drawdown x Unexposed		0.022		0.074
		(0.35)		(0.94)
Observations	4941	4941	4942	4942
R^2	0.010	0.011	0.038	0.058
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 19: Effect of credit line drawdowns on capital expenditure to total assets (extensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in capital expenditure to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	20Q1-20Q3 IV
Drawdown	-0.034	-0.138	-0.019	-0.615
	(-1.15)	(-0.21)	(-0.55)	(-0.97)
Observations	2770	2770	2772	2772
R^2	0.021	-0.000	0.115	-0.076
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 20: Effect of credit line drawdowns on capital expenditure to total assets (intensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t DrawdownSize_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is capital expenditure to total assets for firm i in quarter t, α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $DrawdownSize_i$ represents the magnitude of total credit line drawdowns in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using firm-clustered standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results for all firms in the sample. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1)	(2)	(3)
	All	Exposed	Unexposed
Drawdown Size x 2019Q2	-0.036	-0.047	-0.147
	(-0.83)	(-0.56)	(-1.36)
Drawdown Size x 2019Q3	-0.058*	-0.121	-0.006
	(-1.72)	(-1.44)	(-0.14)
Drawdown Size x 2020Q1	-0.038	0.002	-0.036
	(-1.55)	(0.06)	(-1.43)
Drawdown Size x 2020Q2	-0.066**	-0.070	-0.053
	(-2.01)	(-1.03)	(-1.23)
Drawdown Size x 2020Q3	-0.060*	-0.104	-0.018
	(-1.69)	(-1.39)	(-0.43)
Observations	2171	703	477
R^2	0.736	0.586	0.803
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 21: Effect of credit line drawdowns on capital expenditure to total assets (intensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in capital expenditure to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown size	-0.027	0.034	-0.054	-0.006
	(-0.71)	(0.65)	(-1.13)	(-0.13)
Drawdown size x Exposed		-0.120		-0.148
		(-1.39)		(-1.16)
Drawdown size x Unexposed		-0.181**		0.012
		(-2.09)		(0.10)
Observations	395	395	395	395
R^2	0.090	0.114	0.130	0.170
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 22: Effect of credit line drawdowns on capital expenditure to total assets (intensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in capital expenditure to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	20Q1-20Q3 IV
Drawdown size	-0.028	-0.159**	-0.055	-0.008
	(-0.72)	(-2.03)	(-1.15)	(-0.05)
Observations	393	393	393	393
R^2	0.090	-0.030	0.130	0.002
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 23: Effect of credit line drawdowns on the logarithm of employees (extensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t Drawdown_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is the logarithm of employees for firm i in year t, α_i represents firm fixed effects, ψ_t represents year fixed effects, $Drawdown_i$ is a dummy representing whether a firm drew funds from a credit line in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1)	(2)	(3)
	All	Exposed	Unexposed
Drawdown x 2016	0.005	-0.025	0.063
	(0.26)	(-0.63)	(1.61)
Drawdown x 2017	-0.010	-0.043	0.014
	(-0.64)	(-1.23)	(0.50)
Drawdown x 2018	0.008	-0.050*	0.029
	(0.62)	(-1.84)	(1.03)
Drawdown x 2020	-0.029**	-0.015	-0.035
	(-2.29)	(-0.64)	(-1.31)
Observations	7805	1560	2430
R^2	0.994	0.993	0.995
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 24: Effect of credit line drawdowns on the logarithm of the number of employees (extensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in logarithm of the number of employees for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019 and liquidity stress as of 2020, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019 to 2020. Column (2) shows the results when the difference in the dependent variable is taken from 2019 to 2020 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1) 19-20	(2) Interactions
Drawdown	-0.041***	-0.033**
	(-4.08)	(-2.11)
Drawdown x Exposed		0.001
		(0.06)
Drawdown x Unexposed		-0.027
		(-1.00)
Observations	1561	1561
R^2	0.097	0.106
Controls	Yes	Yes
Industry FE	Yes	Yes

Table 25: Effect of credit line drawdowns on the logarithm of employees (extensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in the logarithm of the number of employees for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019 and liquidity stress as of 2020, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019 to 2020. Column (2) shows the results when the difference in the dependent variable is taken from 2019 to 2020 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)
	19-20	19-20 IV
Drawdown	-0.040***	-0.173
	(-3.92)	(-1.22)
Observations	1210	1210
R^2	0.156	-0.033
Controls	Yes	Yes
Industry FE	Yes	Yes

Table 26: Effect of credit line drawdowns on the logarithm of employees (intensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t DrawdownSize_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is the logarithm of employees for firm i in year t, α_i represents firm fixed effects, ψ_t represents year fixed effects, $DrawdownSize_i$ is the logarithm of total credit line drawdowns during March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1) All	(2) Exposed	(3) Unexposed
Drawdown Size x 2016	0.030**	0.029	0.023
	(2.34)	(1.50)	(1.02)
Drawdown Size x 2017	0.027***	0.019	0.026
	(2.94)	(1.38)	(1.55)
Drawdown Size x 2018	0.003	0.019	0.012
	(0.46)	(1.63)	(0.91)
Drawdown Size x 2020	0.015*	-0.005	0.017
	(1.82)	(-0.43)	(1.32)
Observations	1045	390	190
R^2	0.995	0.995	0.995
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 27: Effect of credit line drawdowns on the logarithm of the number of employees (intensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in the logarithm of the number of employees for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019 and liquidity stress as of 2020, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019 to 2020. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)
	19-20	Interactions
Drawdown size	-0.009	-0.030
	(-0.62)	(-1.36)
Drawdown size x Exposed		0.064*
		(1.84)
Drawdown size x Unexposed		0.018
		(0.54)
Observations	208	208
R^2	0.264	0.309
Controls	Yes	Yes
Industry FE	Yes	Yes

Table 28: Effect of credit line drawdowns on the logarithm of employees (intensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in the logarithm of the number of employees for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019 and liquidity stress as of 2020, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019 to 2020. Column (2) shows the results when the difference in the dependent variable is taken from 2019 to 2020 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)
	19-20	19-20 IV
Drawdown size	-0.010	-0.016
	(-0.62)	(-0.53)
Observations	207	207
R^2	0.264	0.105
Controls	Yes	Yes
Industry FE	Yes	Yes

Table 29: Effect of credit line drawdowns on equity to total assets (extensive margin, panel). This table presents results from estimating variations of the equation $Y_{it} = \alpha_i + \psi_t + \sum_{t \neq 2019Q4} \beta_t Drawdown_i \times \psi_t + \gamma X_{it} + \epsilon_{it}$, where Y_{ij} is equity to total assets for firm i in quarter t, α_i represents firm fixed effects, ψ_t represents quarter fixed effects, $Drawdown_i$ is a dummy representing whether a firm drew funds from a credit line in March 2020, and X_{it} includes the lag of the logarithm of assets and liquidity stress. T-statistics computed using firm-clustered standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results for all firms in the sample. Column (2) restricts to firms that were relatively exposed to the COVID-19 shutdown. Column (3) restricts to firms that were relatively unexposed to the COVID-19 shutdown.

	(1) All	(2) Exposed	(3) Unexposed
Drawdown x 2019Q2	-1.727***	-1.092	-1.540**
	(-3.14)	(-0.86)	(-2.03)
Drawdown x 2019Q3	-1.110***	-0.458	-1.716***
	(-4.18)	(-0.92)	(-3.56)
Drawdown x 2020Q1	-3.221***	-2.191***	-3.754***
	(-9.59)	(-4.08)	(-7.35)
Drawdown x 2020Q2	-3.302***	-2.535***	-3.037***
	(-7.14)	(-3.21)	(-4.51)
Drawdown x 2020Q3	-2.545***	-2.756***	-2.548***
	(-5.73)	(-3.16)	(-3.32)
Observations	25037	5148	10246
R^2	0.947	0.958	0.947
Controls	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 30: Effect of credit line drawdowns on equity to total assets (extensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in equity to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown	-2.671***	-2.285***	1.333***	0.708
	(-7.73)	(-4.42)	(3.17)	(1.31)
Drawdown x Exposed		-0.429		1.893*
		(-0.52)		(1.74)
Drawdown x Unexposed		-0.657		0.430
		(-0.86)		(0.44)
Observations	5094	5094	5092	5092
R^2	0.138	0.151	0.011	0.017
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 31: Effect of credit line drawdowns on equity to total assets (extensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta Drawdown_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in equity to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is a dummy indicating whether a firm drew funds from a credit line in March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	20Q1-20Q3 IV
Drawdown	-2.637***	-29.931**	1.072***	24.047
	(-8.12)	(-2.37)	(2.88)	(1.27)
Observations	2827	2827	2827	2827
R^2	0.119	-1.010	0.037	-0.370
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 32: Effect of credit line drawdowns on equity to total assets (intensive margin, cross-section, interactions). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in equity to total assets for firm i in 2-digit NAICS industry j, $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and adding dummies for relatively exposed and unexposed industries as well as their interactions with the regressors in the baseline specification.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	Interactions	20Q1-20Q3	Interactions
Drawdown size	-1.732***	-2.006***	0.800*	0.685
	(-4.31)	(-3.74)	(1.88)	(1.24)
Drawdown size x Exposed		0.938		-0.284
		(1.09)		(-0.35)
Drawdown size x Unexposed		1.356		0.197
		(1.02)		(0.14)
Observations	397	397	397	397
R^2	0.193	0.268	0.142	0.181
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Table 33: Effect of credit line drawdowns on equity to total assets (intensive margin, cross-section, instrument). This table presents results from estimating variations of the equation $\Delta Y_{ij} = \beta DrawdownSize_i + \gamma X_{ij} + \alpha_j + \epsilon_{ij}$, where ΔY_{ij} is the difference in liquid assets to total assets for firm i in 2-digit NAICS industry j $Drawdown_{ij}$ is the logarithm of total credit line drawdowns during March 2020, X_{ij} includes the logarithm of assets as of 2019Q4 and liquidity stress as of 2020Q1, and α_j represents 2-digit NAICS industry fixed effects. T-statistics computed using heteroskedasticity-robust standard errors are reported in parentheses. * indicates statistical significance at the 10% level, ** indicates significance at the 5% level, and *** indicates significance at the 1% level. We restrict to observations with data on the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (1) shows the results from the baseline specification when the difference in the dependent variable is taken from 2019Q4 to 2020Q1. Column (2) shows the results when the difference in the dependent variable is taken from 2019Q4 to 2020Q1 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019. Column (3) shows the results from the baseline specification when the difference in the dependent variable is taken from 2020Q1 to 2020Q3. Column (4) shows the results when the difference in the dependent variable is taken from 2020Q1 to 2020Q3 and $Drawdown_{ij}$ is instrumented by the logarithm of undrawn revolving credit commitments as of the end of 2019.

	(1)	(2)	(3)	(4)
	19Q4-20Q1	19Q4-20Q1 IV	20Q1-20Q3	19Q4-20Q3 IV
Drawdown size	-1.755***	-2.272***	0.840*	2.315**
	(-4.35)	(-3.18)	(1.96)	(1.97)
Observations	395	395	395	395
R^2	0.197	0.144	0.149	0.022
Controls	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes