

Is a Friend in Need a Friend Indeed? How Relationship Borrowers Fare during the COVID-19 Crisis*

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Abstract

We investigate how relationship borrowers fare relative to others in loan contract terms (spread, collateral, maturity, amount) during times of need using the COVID-19 quasi-natural experiment. COVID-19 is superior for such analysis because it primarily affects borrowers rather than banks. Our Y-14Q loan-level dataset has broader representation than other datasets. We find the dark side of relationships dominates across relationship measures, COVID-19 shocks, and PPP participation. Additional bank-level analysis suggests dark-side dominance for contract terms at the intensive margin is not offset by increased credit access at the extensive margin. Limited bright-side findings hold for smaller firms and smaller banks.

Keywords: Banks, bank loans, relationship lending, loan contract terms, financial crises, COVID-19, Paycheck Protection Program (PPP)

JEL Classification: G01, G21, G28

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“A friend in need is a friend indeed.” – Proverb

“A banker is a fellow who lends you his umbrella when the sun is shining, but wants it back the minute it begins to rain.” – Mark Twain

Over the last three decades, substantial research attention has been paid to relationship lending. Much of the theory (e.g., Sharpe, 1990; Rajan, 1992; Boot and Thakor, 1994, 2000; Petersen and Rajan, 1995) and empirical work (reviewed in Section 1) focuses on whether relationship borrowers fare better or worse in their loan contract terms – interest rate spread, collateral, maturity, and loan amount – than other borrowers. Put another way, the extant research investigates whether borrowers enjoy the bright side versus suffer the dark side of their banking relationships.

Theories disagree on this issue. Relationship borrowers may obtain relatively favorable terms because banks share the benefits of private information garnered over the course of the relationships to help retain these borrowers (e.g., Boot and Thakor, 1994). Alternatively, relationship borrowers may endure harsher terms as banks exercise market power over this private information and “hold up” their relationship customers (e.g., Sharpe, 1990; Rajan, 1992). Despite the conflicting theories, most of the empirical literature supports the bright side, finding relatively favorable loan terms for relationship borrowers (see Section 1 review).

The extant research focuses primarily on normal times. However, it is also important to study the benefits and costs to relationship borrowers during crises, when borrowers are particularly in need. At these times, the soft information behind relationship lending may be more valuable relative to the hard information underlying other lending technologies that may not work as well when markets are less functional and prices are less informative (e.g., Liberti and Petersen, 2019). For example, the value of a mostly empty movie theater or restaurant building pledged as collateral may be difficult to evaluate during the COVID-19 crisis, whereas soft information on the character of the business owner may largely retain its value. Consistent with these arguments,

Grunert, Norden, and Weber (2005) find that soft information better retains its value and informativeness than hard information over the economic cycle.

We ask whether relationship borrowers fare better or worse in their loan contract terms than other borrowers during the COVID-19 crisis that puts both relationship and non-relationship borrowers in need. Using the proverb above, we explore whether banks are friends indeed to their relationship borrower friends in need. Alternatively, banks may effectively pull the umbrella away from their relationship customers the minute it starts to rain, as suggested by Mark Twain.

Theoretical research on the effects of relationships during crises is sparse and emphasizes the bright side. Bolton, Freixas, Gambacorta, and Mistrulli (2016) show that banks may insulate relationship borrowers from crises through intertemporal smoothing – granting relationship borrowers relatively easy loan contract terms during crises, compensating with tougher terms during normal times.¹ Empirical research on relationship lending during prior crises such as the Global Financial Crisis (GFC) mostly supports the bright-side argument, consistent with the normal-times research (see Section 1).

We argue that COVID-19 is a better quasi-natural experiment than the GFC and other prior crises to address this question for two main reasons. First, prior crises were often caused in part by banking excesses (e.g., Rajan, 1994; Berger and Udell, 2004; Thakor 2005, 2015). They generally directly harmed the banks, which in turn reduced credit supply that negatively impacted their borrowers. Thus, research using these prior crises *de facto* addresses how relationship borrowers fare when *banks* are in need. In contrast, COVID-19 shocks are plausibly exogenous to both the banking industry and the borrowers. Thus, COVID-19 allows us to address whether relationship borrowers fare better or worse than others when *borrowers* (rather than banks) are in need. Second,

¹ Banks may also smooth loan rates over the business cycle and in response to changing market interest rates (e.g., Fried and Howitt, 1980; Berlin and Mester, 1999).

prior crises were often predictable to some degree and thus were not plausibly exogenous shocks (e.g., Acharya and Naqvi, 2012; Berger and Bouwman, 2017). In contrast, neither the banks nor the borrowers were able to predict or react in advance to the COVID-19 shocks. Thus, COVID-19 allows us to address the question at hand and provides plausibly exogenous shocks for this purpose.

In sharp contrast to prior crisis findings, our results are mostly consistent with the dark side of relationship lending during the COVID-19 crisis – relationship borrowers tend to suffer harsher loan contract terms than other borrowers in this time of need. However, we note some limited pockets of support for the bright side of relationships for smaller firms and smaller banks.

We offer several alternative explanations of why our main finding deviates from earlier crisis findings. First, it may be the case that the hold-up problem from the relationship lending literature empirically dominates when borrowers are in significant need. Banks may exercise their market power over private information rather than sharing the benefits of this information with their relationship borrowers during such a time. The results from the literature on the GFC and other prior crises may apply more when banks are in need than when borrowers are in need.

Second, relationship banks may try to accumulate profits in the short run to bolster their capital in the expectation of future credit losses later in the crisis. These extra earnings may be more easily raised from higher spreads and other harsher credit terms from relationship borrowers than from non-relationship borrowers without ties to the banks.

Finally, our findings of relatively unfavorable terms for relationship borrowers may partly reflect relatively favorable terms offered to non-relationship borrowers to gain market share during a time of crisis. This would be consistent with extant research suggesting that banks with higher capital used their advantages to gain market share in prior crises (Berger and Bouwman, 2013).

Turning to specifics, we employ public health problems and government activity

restrictions during the COVID-19 crisis as exogenous shocks to firms. We construct 14 COVID-19 shocks. The public health shocks include national and state (new and total) COVID-19 cases and deaths. The government activity restrictions indices include totals of stay-at-home orders, business shutdown orders or limitations, quarantines, and similar restrictions at the national or state levels. The COVID-19 shocks vary in intensity both over time and across individual U.S. states. This rich variation allows us to ensure the robustness of our findings to the effects of public health versus government activity restriction shocks, more versus less intense shocks, and variations in effects over time.² Studies of earlier crises often just compare effects during a crisis versus normal times. Importantly, we avoid specifying crisis measures that reflect economic activity – such as abnormal changes in industry employment used in some prior literature (e.g., Chodorow-Reich, Darmouni, Luck, and Plosser, 2020) – because they may be affected by or simultaneously determined with bank credit supply. However, in untabulated results, we find that our results are robust to such measures as well.

We assemble supervisory data from Schedule H.1 of the Federal Reserve’s Y-14Q, which covers U.S. bank holding companies and intermediate holding companies of foreign banking organizations operating in the U.S., hereafter called “banks” for brevity, with over \$100 billion in assets. As of 2019:Q4, these banks covered more than 60% of the balances of all commercial and industrial (C&I) loans reported in the Federal Reserve’s Y-9C. These banks report quarterly on their commercial loans of at least \$1 million. We use new loans to nonfinancial firms originated by these banks. We add Y-9C data on banks’ participation in the Paycheck Protection Program (PPP), which may affect relationship lending. We focus on four loan contract terms – interest rate spread, collateral, maturity, and loan amount – to address our question. We perform all analyses

² Using national and state measures also addresses the issue that some firms operate in multiple locations.

separately for term loans (loans of fixed amounts and maturities) and revolvers (commitments allowing borrowers to draw and repay funds up to a limit until maturity) because they are fundamentally different products with contract terms that may not be comparable.

Our sample has over 50,000 loans issued from April 2018 – June 2020. This covers the period in which financial markets were most in turmoil. While the public health of the U.S. population became much worse after this time, financial markets largely recovered. This was also the interval over which the fastest and most intense economic decline and most rapid rise in unemployment occurred in recorded U.S. history, so bank credit was most critical during this time. This was the period over which there was the most fear that the public health and economic crisis could also become a financial crisis, although this seeming eventuality did not come to pass.

Our Y-14Q dataset well represents syndicated and non-syndicated loans and small and large firms, unlike other loan datasets employed in relationship lending research such as DealScan. Syndicated and non-syndicated loans have contract terms that differ significantly from one another (Berger, Bouwman, and Wang, 2020), so including both loan types ensures that our findings are robust. It is also important to include small firms that are generally more dependent on relationship lending using soft information. This is because they have relatively little quality hard information such as certified audited financial statements, market prices for traded securities, and public bond ratings, needed for other lending technologies (e.g., Liberti and Petersen, 2019). Our results indeed confirm that results differ for smaller firms.

We employ a difference-in-difference (DID) framework, regressing loan contract terms on the existence, intensity, or length of the bank-borrower relationship; a COVID-19 public health condition or government activity restrictions shock; and their interactions (the DID terms). Exploiting the unusual quality of our data we deploy a rich menu of loan, firm, bank, and firm-

county controls, and include bank and industry fixed effects to account for other credit demand and supply factors. These control variables are essential to our identification strategy to minimize selection concerns related to our relationship variables.

The DID interaction term between the relationship variable and the COVID-19 shock can reasonably be interpreted as the effect of the crisis shock on how relationship borrowers fare relative to other borrowers in their time of need. The relationship variable is based on past loans made by the same bank to the same borrower and is essentially unaffected by the COVID-19 public health or government restrictions shocks. Given that the pandemic was not predicted, these past loans could not have been made in anticipation of the shocks, yielding a relatively clean interpretation of the coefficient on the interaction term.

One potential concern is selection: relationships may have been formed or broken in anticipation of the crisis. It is unlikely that this affects our results. As discussed above, COVID-19 shocks are plausibly exogenous to both banks and borrowers and neither group had much time to prepare for the shock. Nonetheless, we perform a robustness check in which we drop all loans for which the relationship started in 2020 and find very similar results (untabulated).

Another concern is that while relationship borrowers and non-relationship borrowers generally face the same COVID-19 shocks, the shocks may affect them differently because of variations in their fundamentals. We address this potential challenge three ways. First, we deploy a rich set of controls, including the bank's internal loan rating, many firm characteristics, and industry fixed effects. Second, we compare summary statistics on firm characteristics between relationship borrowers and non-relationship borrowers and find little in the way of differences. Third, we conduct a robustness test matching each relationship borrower with a matched non-relationship borrower using propensity score matching (PSM) and obtain similar results.

We distinguish between bank credit at the intensive and extensive margins. The extensive margin refers to the ability to obtain credit and the intensive margin refers to the terms of that credit conditional on receiving funds. In this paper, we focus on the terms of the credit (spread, collateral, maturity, and amount), for which we have quality information on an individual loan basis. We do not have quality data on the likelihood of obtaining credit at the extensive margin because we do not have information about credit applications and their outcomes.

Nonetheless, we take a “rough cut” at the data on bank-level credit quantities to assess whether greater credit availability at the extensive margin for relationship customers during the COVID-19 crisis may have offset the unfavorable loan contract terms at the intensive margin. We use DID analyses in which the dependent variable is bank-level credit in a given month, and the key independent variables are the percent of loans to relationship borrowers, a COVID-19 shock, and their DID interaction term. The findings do not suggest any such offset of the dark side of relationships at the intensive margin by increased access to credit at the extensive margin during COVID-19, leaving our main conclusion intact.

Our approach to relationship lending is considerably broader than the typical application in the literature. Much of the extant relationship lending research focuses on intertemporal smoothing on a single loan contract term, such as the interest rate spread. Banks may charge a lower spread at certain times and make up for it at other times with higher spreads. Consistent with the literature, we test whether banks smooth intertemporally between normal times and the COVID-19 crisis. However, unlike other studies, we also investigate whether banks engage in multiple dimensions of cross-sectional smoothing across two different loan types (term loans and revolvers); four different loan contract terms (interest rate spread, collateral, maturity, and loan amount); two different borrower types (relationship and non-relationship); and two different firm

types (smaller and larger). Our results support intertemporal smoothing, but in the opposite direction to most of the normal times and crisis literature, with harsher loan contract for relationship borrowers in their time of need. We find no cross-sectional smoothing between loan types and among loan contract terms, but there is some cross-sectional smoothing from relationship to non-relationship borrowers and to a lesser extent from larger to smaller firms.

The remainder of the paper is organized as follows. Section 1 reviews empirical research on relationship lending during normal times and past crises and on bank lending during the COVID-19 crisis. Section 2 describes the data. Section 3 presents our methodology and regression variables. Section 4 shows our main results for contract terms of new loans to relationship versus non-relationship borrowers at the intensive margin during COVID-19. Section 5 provides numerous robustness checks. Section 6 examines how the findings differ by firm and bank sizes and other firm, loan, and bank characteristics. Section 7 shows our PPP analysis. Section 8 shows our “rough cut” at the data to assess credit availability at the extensive margin. Section 9 concludes.

1. Review of Empirical Research on Relationship Lending

1.1. Research on Relationship Lending during Normal Times

Many papers find that businesses benefit from their banking relationships on loan contract terms such as the interest rate spread during normal times (e.g., Petersen and Rajan, 1994; Berger and Udell, 1995; Cole, 1998; Elsas and Krahn, 1998; Harhoff and Körting, 1998; Degryse and Ongena, 2005). Some papers, however, find that relationships lead to less favorable terms (e.g., Angelini, Di Salvo, and Ferri, 1998; Degryse and Van Cayseele, 2000). For reviews of this literature, see Boot (2000), Degryse and Ongena (2008), and the meta-analysis by Kysucky and Norden (2016).

Much of the literature suggests that small businesses are relatively informationally opaque

and more dependent on relationship lending than large businesses (e.g., Gopalan, Udell, and Yerramilli, 2011) and that small banks and those that are better capitalized have comparative advantages over large banks and less well capitalized banks in relationship lending, respectively (e.g., Cole, Goldberg, and White, 2004; Berger, Miller, Petersen, Rajan, and Stein, 2005; Berger, Bouwman, and Kim, 2017; Schwert, 2018). However, some use DealScan, which includes mostly syndicated loans by large banks to large firms and also generally find benefits to relationship borrowers (e.g., Dennis and Mullineaux, 2000; Drucker and Puri, 2005; Bharath, Dahiya, Saunders, and Srinivasan, 2007, 2011; Sufi, 2007).

1.2. Research on Relationship Lending during Financial Crises

Most studies on relationship lending during crises focus on the GFC and often find evidence supporting the bright side of relationships. Some studies provide “indirect” evidence on relationship lending because they cannot directly connect the borrower to its bank. Exploiting bank-level survey data from Central and Eastern Europe to classify relationship and transactions banks, Beck, Degryse, De Haas, and van Horen (2018) find positive effects of relationships in the early parts of the GFC. Using U.S. firm-level survey data, Berger, Bouwman, and Kim (2017) document that a greater local market presence of small banks strongly mitigates small business financial constraints during the GFC. Viewing small banks with high shares of commercial lending to be relationship lenders, DeYoung, Gron, Torna, and Winton (2015) also find that small relationship lenders cushioned credit crunch problems for small businesses during the GFC.

Others provide “direct” evidence using European credit registry data on relationships between banks and small business borrowers during the GFC. Using various relationship lending proxies, these papers generally find that relationships helped to secure more funding at lower rates, buffering relationship borrowers against credit crunches (e.g., Jimenez, Ongena, Peydro, and

Saurina, 2012; Sette and Gobbi, 2015; Bolton, Freixas, Gambacorta, and Mistrulli, 2016; Banerjee, Gambacorta, and Sette, 2021).

Using DealScan data on syndicated lending to large firms in the U.S., Karolyi (2018) finds similar results. In contrast, also using syndicated loans from DealScan, Chodorow-Reich (2014) finds that stronger relationships with banks in poor financial health reduce the likelihood of obtaining a loan and increase rates after the Lehman Brothers failure. This provides some support for the dark side of relationship lending, although this study excludes non-relationship borrowers.

Our approach to relationship lending is considerably broader than both the normal times and crisis studies, which typically focus on intertemporal smoothing on a single loan contract term, such as the interest rate spread. We specify a number of loan contract terms and assess how banks may engage in both intertemporal smoothing on these terms as well as cross-sectional smoothing across loan types, loan contract terms, and borrowers.

1.3. Empirical Research on Bank Lending during the COVID-19 Crisis

The literature on bank lending during the COVID-19 crisis is growing rapidly. Near the start of the crisis in March 2020, there was a massive drawdown of existing credit lines, dubbed “dash for cash” (e.g., Acharya and Steffen, 2020; Chodorow-Reich, Darmouni, Luck, and Plosser, 2020; Li, Strahan, and Zhang, 2020). Most of the drawdown was by large firms from large banks.

Some studies find that borrowers generally did not fare as well during the crisis. Greenwald, Krainer, and Paul (2020) find that banks with larger drawdowns from large firms restrict term lending more. Kapan and Minoiu (2020) find that banks with larger exposure to revolver drawdown risk tighten standards and limit the supply of new large syndicated loans, and that banks with greater exposures to industries most affected by the COVID-19 crisis display lower loan growth. International studies also find reduced loan growth (Colak and Oztekin, 2020) and

higher interest rate spreads (Hasan, Politsidis, and Sharma, 2020).

A number of studies investigate how the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which includes the Paycheck Protection Program (PPP), affects bank lending. Banks were encouraged to prioritize existing customers when issuing such loans,³ and PPP credit is indeed higher for relationship borrowers (e.g., Amiram and Rabetti, 2020; Bartik, Cullen, Glaeser, Luca, Stanton and Sunderam, 2020; Li and Strahan, 2020). Other studies find that small banks play important roles in the provision of PPP loans (e.g., James and Lu, 2020; Levine, Lin, and Xie, 2020), banks participating in PPP increase their other small business lending (Karakaplan, 2020), PPP recipients reduce their non-PPP borrowings (Chodorow-Reich, Darmouni, Luck, and Plosser, 2020), and some PPP funds were not employed as intended (Granja, Makridis, Yannelis and Zwick, 2020).⁴

These PPP findings are not directly comparable to ours. Banks issue PPP loans as distribution agents for subsidized government lending that is not intended to be repaid. This is quite different from the financial intermediation that we study, although we test whether PPP affects traditional lending to relationship and non-relationship borrowers.

2. Data and Sample Period

Our data are mainly from the Y-14Q, covering commercial loans of \$1 million or more extended by U.S. banking organizations with over \$100 billion in assets. Banks with over \$50 billion in assets were required to report from 2011:Q3 onward, but the 2018 Economic Growth, Regulatory Relief, and Consumer Protection Act increased the reporting size threshold to \$100 billion starting

³ A report from the House Select Subcommittee on the Coronavirus Crisis found that the “Treasury Department privately encouraged banks to prioritize existing customers when issuing [PPP] loans.” (*Wall Street Journal*, Omeokwe and Tracy, October 16, 2020, available at: <https://www.wsj.com/articles/treasury-department-encouraged-banks-to-prioritize-existing-customers-for-ppp-loans-democratic-report-says-11602861336>).

⁴ For additional details on the distribution of PPP funds, see Balyuk, Prabhala, and Puri (2020).

in 2019:Q4. For consistency, we focus on banks with assets over \$100 billion.

Y-14Q Schedule H.1 has quarterly information on the loan contract terms used in the paper: interest rate spread, collateral, maturity, and loan amount. Y-14Q also has detailed information on other loan characteristics, such as loan type (term loan versus revolver), and the bank's internal private risk rating on the loan, reflecting the bank's assessment of credit quality. The Federal Reserve uses concordance tables provided by the banks to map the raw private ratings of banks to a standardized rating scale (AAA, AA, A, BBB, BB, B, etc.), making these ratings reasonably comparable across banks.⁵ The Y-14Q also includes firm characteristics (e.g., size, listing status, public debt rating, industry) and loan purpose (e.g., acquisitions, capital expenditures). We add bank characteristics from the Y-9C and local market economic indicators for the county of the borrower from BLS/Haver Analytics, U.S. Census Bureau, and CoreLogic Solutions.

We obtain COVID-19 shock data from the Economic Tracker of Chetty, Friedman, Hendren, and Stepner (2020); the Johns Hopkins Coronavirus Resource Center; and the University of Washington COVID-19 Policies Database from Adolph, Amano, Bang-Jensen, Fullman, and Wilkerson (2020). We alternatively view the COVID-19 shock to be a public health or government activity restrictions shock.⁶ The public health shocks started on January 21, 2020, when the first COVID-19 case was identified in the U.S. The government activity restrictions shocks started on February 29, 2020, the first date on which a government official in the U.S. (Governor of Washington) declared a state of emergency.

Our sample period begins on April 1, 2018, and ends on June 30, 2020. The starting date ensures that we use a relatively short pre-crisis period, which is important for comparability with

⁵ Importantly, while these ratings use the S&P rating scale, they are the bank's private ratings, not those of S&P.

⁶ Goel and Thakor (2021) show that the prospects of borrowers depend not only on the severity of the health shock but also on the policy responses of the government.

our relatively short COVID-19 shock period. Our public health-shock regressions use April 1, 2018 – January 20, 2020 as the pre-shock period and January 21, 2020 – June 30, 2020 as the shock period. Our government activity restrictions shock regressions use April 1, 2018 – February 28, 2020 as the pre-shock period and February 29, 2020 – June 30, 2020 as the shock period.

We focus on newly issued loans and apply the following filters to provide clear answers to our questions. We eliminate loans to other financial institutions and governments. We also drop loans with a committed exposure below \$1 million, the official minimum size requirement to be included in the Y-14Q. Schedule H.1 explicitly excludes “small business loans” – loans that are evaluated based on borrower credit scores or rated on a different scale than other corporate loans. For consistency, we drop all loans reported with a small business “line of business.” Observations are deleted as well if the total size of the loan package is larger than the size of the firm, or if the maturity of the loan is negative.⁷ We focus on pure term loans and pure revolvers for comparability of loan contract terms, leaving out mixed cases.⁸

Our final term loan and revolver regression samples contain 27,153 and 26,184 loan-firm-bank observations, respectively, for between 27 and 30 unique banks per quarter with complete information on loan, firm, bank, and county characteristics. Regressions lose some additional observations due to dropping singletons (groups with only one observation) and/or data availability

⁷ We use the median value for firm’s financial variables, obtained over all loan facilities that report the firm’s financials across all BHCs in that quarter. Since the firm financial data should be the same across facilities and across banks, taking the median observed value helps eliminate reporting errors from filing an extreme value and from not filing any values for firm financial characteristics. We are able to do this despite the fact that the Y-14Q does not include firm identifiers that are common across banks: we construct common identifiers ourselves based on the combination of tax identifiers, firm name, ticker, cusip, and banks’ internal obligor names. We also winsorize the financial variables at the 1 and 99 percentile levels.

⁸ To ensure a homogeneous sample, we discard the following term loan types: asset-based term loans (term loans secured by accounts receivable and inventory in a non-standard asset-based loan contract); and debtor-in-possession term loans (loans obtained while in Chapter 11 bankruptcy). We also exclude several specialized revolver types: revolvers converting to term loans; debtor-in-possession revolvers; non-revolving lines of credit; and non-revolving lines of credit that convert to term loans. Finally, we exclude other facility types (capitalized lease obligation, standby letters of credit, other real estate owned, other asset fronting exposure, commitment to commit, and others).

issues for the interest rate spread variable.⁹

3. Methodology and Regression Variables

We explain our empirical methodology in Section 3.1 and discuss the regression variables in Section 3.2 and in Table 1.

3.1. Methodology

We specify the following DID setup:

$$\begin{aligned}
Y_{i,b,j,t} = & \beta_0 + \beta_1 Relationship_{i,b,j,t-3y\ to\ t} + \beta_2 COVID-19\ Shock_{j,t} \\
& + \beta_3 Relationship_{i,b,j,t-3y\ to\ t} \times COVID-19\ Shock_{j,t} \\
& + \beta_4 Loan\ Controls_{i,t} + \beta_5 Firm\ Controls_{i,b,j,t} \\
& + \beta_6 Bank\ Controls_{b,t=mr} + \beta_7 County\ Controls_{j,t=mr} \\
& + \beta_8 Bank\ FE_b + \beta_9 Industry\ FE_i + \varepsilon_{i,b,j,t}
\end{aligned} \tag{1}$$

$Y_{i,b,j,t}$ is the outcome, one of four alternative loan contract terms – interest rate spread, collateral, loan maturity, or loan amount to customer i by bank b , in borrower local market j at time t . The subscript mr on some of the variables indicates the most recent date. $Relationship_{i,b,j,t-3y\ to\ t}$ is alternatively defined as relationship existence (main definition), relationship intensity, or relationship length calculated based on prior Y-14Q loans.¹⁰ Some tests use relationship existence variables based on past term loans and revolvers separately. $COVID-19\ Shock$ is the exogenous public health or government restrictions shock. $Relationship \times COVID-19\ Shock$ is the quasi DID term and key variable of interest, which shows how the marginal effect of the COVID-19 shocks on loan contract terms varies with the existence, intensity, or length of the relationship. The

⁹ Maintaining singleton groups in linear regressions where fixed effects are nested within clusters can overstate statistical significance and lead to incorrect inference. To avoid this problem, we use the `reghdfe` package that automatically drops singletons (e.g., Correia, 2015, 2017).

¹⁰ We are unable to include information on non-credit products, which are also part of relationships (e.g., Petersen and Rajan, 1994; Mester, Nakamura, and Renault, 2007; Norden and Weber, 2010).

coefficient signs on *Relationship* \times *COVID-19 Shock* indicate whether relationship borrowers fare better or worse than other borrowers in response to the shocks.

We saturate the model with control variables and fixed effects to account for other credit demand and supply factors. Controls include *Loan*, *Firm*, and *Bank Controls*, all measured at the end of the quarter in which the loan is issued, and *County Controls* measured at the most recent month end (except for most recent year end for population density). We include bank fixed effects and industry fixed effects (2-digit NAICS) to capture unobserved time-invariant heterogeneity across banks and industries, respectively.¹¹ We cluster standard errors at the bank \times industry level to account for any within bank \times industry correlations (banks and firms could respond to shocks in a similar fashion) and for the level of variation in loan terms across bank-industries.

3.2. Regression Variables

3.2.1. Dependent Variables

Interest Rate Spread is the interest rate spread over the constant rate of U.S. Treasury securities with a similar maturity. *Collateral* is a dummy equal to one if the loan is secured. *Ln(Maturity)* is the natural log of one plus the maturity of the loan in years, where maturity is the total years from origination to maturity date. *Ln(Loan Amount)* is the natural log of one plus the total loan amount that a borrower can contractually borrow. Loan covenant data are not available in Y-14Q.

3.2.2. Relationship Variables

We use a number of definitions of *Relationship*. *Rel Exist* captures the existence of a relationship, a dummy that equals 1 if the firm has borrowed from the bank over the past three years. *Rel Intens* measures relationship intensity, the loan amounts received from the bank normalized by the total loan amounts received from any sample bank over the past three years. *Rel Length* indicates

¹¹ Our main results are robust to using bank plus borrower state plus year-week fixed effects, or alternatively, state plus industry plus bank \times year fixed effects. Not shown for brevity.

relationship length, the natural log of one plus the number of years from the date the bank first lent to the firm.¹² *Rel Main Bank* identifies the bank from which the firm borrowed the most over the past three years. Finally, *TL Rel Exist* and *RV Rel Exist* are indicators for the existence of a prior term loan and revolver, respectively, from the current bank in the past three years.

3.2.3. COVID-19 Shock Variables

We construct four main COVID-19 shock measures (plotted over time in Figure 1), and 10 more in the robustness checks. Two main measures focus on the severity of the public health crisis. *US New Cases/100K Pop* and *State New Cases/100K Pop* are the number of new COVID-19 cases per 100,000 population in the U.S. and in the state of the borrower, respectively. Cases are 0 before the start of the public health crisis (January 21, 2020). Two other main measures focus on the intensity of the government activity restrictions: *US Restrict Index*, a national restrictions index, and *State Restrict Index*, a state restrictions index. The latter is created by us using raw data on states' start and end (or expiry) dates on 10 possible mandated statewide COVID-19 restrictions with potential impact on economic activity: (1) Emergency declaration; (2) Stay at home; (3) Non-essential business close; (4) Other business close; (5) Restaurant restrictions; (6) Bar restrictions; (7) School close; (8) Gathering restrictions; (9) Travel restrictions; and (10) Quarantine/case isolation orders. For each state, we add 1 for each government activity restriction that is present in a state. Thus, index values range from 0 to 10, with 10 being the most restrictive. The number of restrictions is 0 before the start of the crisis (February 29, 2020). The national index is a state-population weighted average of the individual state restrictions.

3.2.4. Control Variables

We use controls for loan, firm, bank, the firm's county, plus bank and industry (2-digit NAICS)

¹² Lopez-Espinosa, Mayordomo, and Moreno (2017) and others document that relationship length matters.

fixed effects. The loan controls include four dummies reflecting the private information of the bank: high investment grade HIG (the bank internally rates the loan in the A range or above; the left-out or excluded category in regressions), low investment grade LIG (BBB), high sub-investment grade HSG (BB), and low sub-investment grade LSG (B or below). Also included are a non-syndicated loan dummy; floating rate and mixed rate loan dummies (fixed rate is the left-out category); loan purpose dummies (mergers and acquisitions or capital expenditures (ACQ/CAPEX), general purpose (General), and commercial real estate (CRE), while miscellaneous is the left-out category); and two dummies indicating if the loan package has at least one additional term loan or revolver.

The firm controls are composed of firm size dummies for smaller (total assets \$1 million to \$25 million; the left-out category); medium (\$25 million to \$250 million); and large ($>$ \$250 million) firms, and an indicator for firms with missing total assets; a dummy for past delinquency indicating whether the firm was at least 90 days past due on any of its loans in the last five years; ROA, net income scaled by total assets, and an indicator for firms with missing ROA; leverage ratio, total debt scaled by total assets, and an indicator for firms with missing leverage; a private firm dummy; and a public bond rating availability dummy.

The bank controls consist of bank size, the natural log of one plus bank total assets; the capital ratio, total equity scaled by total assets; the nonperforming loans (NPL) ratio, loans at least 90 days past due or in non-accrual status scaled by total assets; liquidity ratio, cash plus marketable securities scaled by total assets; and ROA, net income scaled by total assets.

The county controls are the unemployment rate; the house price index (HPI); the one-month change in the HPI; and population density where the firm is headquartered.

3.2.5. Summary Statistics

Table 1 shows the definitions and means of all of our regression variables, overall and sliced by pre- and during public health and government activity restrictions shock periods. All statistics are shown separately for term loans and revolvers.

Term loans in our sample on average have a spread of 2.091% over U.S. Treasuries with similar maturity; 82.6% of these loans are collateralized; the average loan maturity is 5.665 years; and the average loan amount is \$33.653 million. The average revolver has a spread of 2.346%; a 73.6% collateralization rate; average loan maturity of 1.642 years; and average loan amount of \$63.742 million. For both term loans and revolvers, loan spreads tend to be higher and loan maturity tends to be lower during the COVID-19 shock periods, while the results for the other terms are mixed.

Our main relationship variable, *Rel Exist*, equals one for 40.7% of term loans and 43.2% of revolvers. These proportions remain relatively constant before and after the COVID-19 shocks.

Turning to our four main shock variables, their full-sample averages are not insightful, given that they are 0 before COVID-19. During the public health shock period, the average *US New Cases/100K Pop* are 4.881 and 5.351 for term loans and revolvers, respectively, and the average *State New Cases/100K Pop* are 4.452 and 5.042, respectively. During the government activity restrictions shock period, for term loans and revolvers, the average *US Restrict Index* are 6.029 and 6.247, respectively, while the average *State Restrict Index* are 5.349 and 5.663, respectively. Figure 1 Panels A – D show our main COVID-19 intensity measures at different points in time of the crisis. It suggests few to no cases and restrictions in January and February, but a sudden large increase in restrictions in a majority of U.S. states starting with March 2020 and generally further intensification in the following months, although there are decreases in restrictions in some states in May and June. Figure 1 Panels E – F show some auxiliary graphs.

We do not discuss statistics for loan, firm, and bank controls here for brevity.

4. Main Results

Table 2 Panels A and B present our main results for term loans and revolvers, respectively. Each panel shows 16 regressions, one each for four different loan contract terms – *Interest Rate Spread*, *Collateral*, *Ln(Maturity)*, and *Ln(Loan Amount)* – employing four different COVID-19 shocks – *US New Cases/100K Pop*, *State New Cases/100K Pop*, *US Restrict Index*, and *State Restrict Index*. The *Relationship* variable here is *Rel Exist* – we demonstrate robustness using other relationship and shock measures in Section 5.3. In each regression, the interaction term *Relationship* \times *COVID-19 Shock* is the variable of interest, addressing our main question of “friends in need,” or how relationship borrowers fare relative to others in response to the shocks. Our discussions focus almost entirely on these interaction terms. All regressions include a large set of loan, firm, bank, and local market (borrower county) controls, plus bank and industry fixed effects.

In Panel A, the coefficients of the interaction terms are positive and statistically significant in the *Interest Rate Spread* regressions in columns (1)-(4). These suggest spread increases on new term loans for relationship borrowers relative to other borrowers in response to the COVID-19 shocks. To determine economic significance, we multiply the coefficients of these *Rel Exist* \times *COVID-19 Shock* interaction terms by the means of the *COVID-19 Shock* variables over the period when these shocks were in effect from Table 1 Panel C. Thus, for the first shock, *US New Cases/100K Pop*, the interaction coefficient of 0.025 times the mean of the shock over the public health shock period of 4.881 yields 0.122 or about 12.2 basis points. For the four different shocks, the magnitudes range between 5.8 and 14.6 basis points.¹³ While the magnitudes are somewhat modest from an economic significance standard, they are nonetheless all statistically significant

¹³ Calculations for Col. (2) – (4): $(0.013 \times 4.452 =)$ 5.8 bps; $(0.024 \times 6.029 =)$ 14.6 bps; and $(0.018 \times 5.349 =)$ 9.6 bps.

and point to harsher terms for relationship borrowers in response to the COVID-19 shocks.

The other statistically significant interaction term coefficients in Panel A are also unfavorable for relationship borrowers – one positive effect on *Collateral* in columns (5)-(8) and four negative effects for $\ln(\text{Maturity})$ in columns (9)-(12). To evaluate the magnitudes of the shorter maturities, we multiply the interaction term coefficients by the means of the shock variables over the relevant time periods and exponentiate to convert natural logs to levels. For the four shocks, loan maturity decreases range between 0.14 and 0.35 years (1.68 to 4.2 months) when evaluated at the means of $\ln(\text{Maturity})$ for each of the corresponding shocks.¹⁴

Thus, relationship borrowers fare worse than other borrowers on their term loans during the crisis, suggesting an empirical domination of the dark side of relationships and exacerbation of the hold-up problem. There are no significant benefits for relationship borrowers for any of the loan terms. These findings are in sharp contrast to the shared benefits and intertemporal smoothing of loan interest rates found in most of the extant research on earlier crises. In terms of the main question of the paper, the results suggest that the banks are **not** friends indeed when their term loan relationship borrowers are in need during the crisis. Rather, the banks charge their relationship borrowers more, may require collateral more frequently, give them shorter maturities during the crisis, and do not share loan amount benefits either.

The revolver results in Panel B also suggest that relationship borrowers fare worse than other borrowers during the crisis. Of the 16 interaction coefficients, nine are statistically significant, including four suggesting higher collateral, three indicating shorter maturity, and two

¹⁴ Calculations for $\ln(\text{Maturity})$ in Col. (9)-(12) are $(-0.014 \times 4.881 =) -0.068$; $(-0.007 \times 4.452 =) -0.035$; $(-0.015 \times 6.029 =) -0.090$; and $(-0.018 \times 5.349 =) -0.101$. These translate into reduced $\ln(\text{Maturity})$ at its means of $(1.299 - 0.068 =) 1.229$, $(1.299 - 0.035 =) 1.264$, $(1.267 - 0.090 =) 1.177$, and $(1.267 - 0.101 =) 1.166$. Exponentiating both mean $\ln(\text{Maturity})$ and the reduced $\ln(\text{Maturity})$ and subtracting one to obtain the levels of maturity in the shock periods, yields declines in maturity in years of $(3.666 - 3.418 =) 0.248$, $(3.666 - 3.525 =) 0.141$, $(3.550 - 3.243 =) 0.31$, and $(3.550 - 3.209 =) 0.35$.

signifying lower loan amounts, all pointing toward relationship borrowers faring worse than other borrowers.¹⁵ To estimate economic magnitudes, we apply similar methodology to that applied to term loans above and focus on collateral and maturity given these are all or almost all statistically significant. We find that the collateral likelihood increase ranges between 1.0% and 3.4% for the four shocks, when evaluated at the means for each of the corresponding shocks.¹⁶ For three out of four shocks significant, loan maturity decreases range between 0.04 and 0.06 years (0.50 to 0.73 months) when evaluated at the means of $Ln(Maturity)$ for each of the corresponding shocks, which is relatively modest relative to the average loan maturity for revolvers which is about 1.4 years.¹⁷

To ease interpretation of the results, Figure 2 presents the coefficients on the DID terms graphically. Panels A and B focus on term loans and revolvers, respectively. Each panel has four subpanels, showing how relationships affect the four loan contract terms during the COVID-19 crisis, measured using one of four COVID-19 shock variables. Black arrows show the magnitudes of coefficients that are statistically significant at the 10 percent level. As shown, nine of the 16 coefficients each for both term loans and revolvers are significant and point to worse loan contract terms for relationship borrowers relative to others during the crisis. Effects are greatest for interest rate spreads and maturities of term loans and for loan amounts of revolvers. Only one of the 32 overall coefficients point to relatively better contract terms for relationship borrowers, and it is very small in magnitude and far from statistically significant.

Overall, despite results appearing to be only modestly economically significant at times for

¹⁵ In unreported analyses, we control for recent credit line drawdowns. Our main results remain materially unchanged.

¹⁶ Calculations for Collateral in Col. (5)-(8): $(0.003 \times 5.352 =) 1.6\%$; $(0.002 \times 5.042 =) 1.0\%$; $(0.004 \times 6.247 =) 2.5\%$; and $(0.006 \times 5.663 =) 3.4\%$.

¹⁷ Calculations for $Ln(Maturity)$ in Col. (9), (11), and (12) are $(-0.007 \times 5.351 =) -0.037$; $(-0.009 \times 6.247 =) -0.056$; and $(-0.010 \times 5.663 =) -0.057$. These translate into reduced $Ln(Maturity)$ at its means of $(0.116 - 0.037 =) 0.079$, $(0.095 - 0.056 =) 0.039$, and $(0.095 - 0.057 =) 0.038$. Exponentiating both mean $Ln(Maturity)$ and the reduced $Ln(Maturity)$ and subtracting one to obtain the levels of maturity in the shock periods, yields declines in maturity in years of $(1.123 - 1.079 =) 0.04$, $(1.100 - 1.039 =) 0.06$, and $(1.100 - 1.038 =) 0.06$.

some individual cases, results on credit terms taken together as a group overwhelmingly support the dark side of relationship lending. The effects are more economically pronounced at different months of the crisis as discussed in our dynamic analysis in Section 5.1 below. The overall conclusions of empirical domination of the dark side of relationships, exacerbation of the hold-up problem, no benefits for relationship borrowers relative to others during the COVID-19 crisis, and lack of friendship indeed for relationship borrowers in need contrast sharply with findings for earlier crises such as the GFC.

In terms of smoothing behavior, our main results support intertemporal smoothing in the opposite direction to most of the literature – harsher loan contract terms for relationship borrowers in times of crisis than in normal times. The main results also support cross-sectional smoothing from relationship borrowers to non-relationship borrowers during the crisis. The findings for term loans and revolvers and for the four loan contract terms are all in agreement about the unfavorable loan contract terms, yielding no evidence of cross-sectional smoothing between loan types and among loan contract terms.

Turning briefly to the other coefficients in Table 2, the uninteracted *Relationship* and *COVID-19 Shock* variables do not give consistent guidance. As noted above, the uninteracted *Relationship* coefficient cannot be cleanly interpreted as a causal effect, while the uninteracted *COVID-19 Shock* coefficients combine credit demand and supply effects.

For the control variables, we simply review here some of the significant findings in the *Interest Rate Spread* regressions to conserve space. Lower-rated loans based on the banks' private information are associated with higher spreads, as are loans to more highly leveraged firms, consistent with higher loan risk resulting in greater risk premiums, as expected. Larger firms and those with public debt ratings obtain lower spreads, consistent with their greater transparency. The

coefficients of some of the bank characteristics are statistically significant, but with opposing signs for term loans and revolvers, making them difficult to interpret.

5. Robustness Checks

This section examines dynamic effects of the COVID-19 shocks on relationship borrowers; performs falsification tests; uses alternative relationship measures and COVID-19 shocks; employs alternative fixed effects; and reports results using Propensity Score Matching.

5.1. Dynamic Effects over the Months of the Crisis

Table 3 presents dynamic effects of the *COVID-19 Shocks* on relationship borrowers' loan contract terms over the months of the crisis for term loans (Panel A) and revolvers (Panel B). Instead of the *COVID-19 Shock* variables employed in Table 2, we now use dummies for each month of the crisis from March to June 2020, the end of our sample period, and interact these four months with *Rel Exist*. The interaction terms indicate how relationship borrowers fare relative to other borrowers at different stages of the crisis.

The proportions of statistically significant interaction coefficients are considerably smaller than in Table 2, likely due to low test power – there are fewer loans in individual months than in the full sample period. Nonetheless, some inferences may be drawn from Table 3. First, the main conclusion from Table 2 remains largely robust – all but two of the significant interaction terms in Table 3 are unfavorable for relationship borrowers. Second, as the crisis deepens for the first few months, relationship borrowers fare worse and worse. Third, some of the coefficients are quite economically significant. Starting with Panel A for term loans, the April and May interaction terms in the *Interest Rate Spread* regression in column (1) suggest that relationship borrowers suffer increases in spreads of 19 to 27 basis points; the May interaction term in the *Collateral* regression in column (2) show a 4% higher likelihood of collateral being requested; the June interaction term

in the $\ln(\text{Maturity})$ regression in column (3) shows a 38% decline in loan maturity; while the May and June interaction terms in the $\ln(\text{Loan Amount})$ in column (4) suggest a 12%-14% decline in loan amount, all relative to other borrowers in these months.

Moving to Panel B for revolvers, the May interaction term in the *Collateral* regression in column (2) shows a 7% higher likelihood of collateral being requested for relationship borrowers relative to other borrowers; the March interaction terms in the $\ln(\text{Maturity})$ regression in column (3) show a 11% decline in loan maturity; while the May and June interaction terms in the $\ln(\text{Loan Amount})$ in column (4) suggest a 17%-33% decline in loan amount, again all relative to other borrowers in these months.

5.2. Falsification Tests

Table 4 Panels A and B give results of falsification tests for term loans and revolvers, respectively, to address concerns that contemporaneous shocks or preexisting trends may drive our main results. We move our sample period one year backward to April 1, 2017 – June 30, 2019, and employ *Fake COVID-19 Shocks*, which are the 2020 COVID-19 shocks reassigned to the same calendar days one year earlier. That is, we act as if the public health shocks started on January 21, 2019, instead of January 21, 2020, and the government activity restrictions shocks started on March 1, 2019, instead of February 29, 2020 (i.e., we adjust for no leap day in 2019).

The coefficients on the interaction terms between *Rel Exist* and *Fake COVID-19 Shock* are mostly insignificant, which generally supports that our main findings for the real crisis are not by driven by contemporaneous shocks or preexisting trends.¹⁸

5.3. Alternative Relationship Measures

Table 5 shows findings using alternative measures of *Relationship*. We re-estimate our main

¹⁸ We find significance in only five out of 32 cases: once for *Interest Rate Spread* and four times for *Collateral*. In unreported results, we assume the COVID-19 crisis occurred two years before the true crisis and obtain similar results.

regressions replacing relationship existence (*Rel Exist*) with relationship intensity (*Rel Intens*), relationship length (*Rel Length*), and main relationship bank (*Rel Main Bank*). In every panel, subpanels 1 and 2 show results for term loans and revolvers, respectively.

The *Rel Intens* results in Panels A1 and A2 show unfavorable significant results for relationship borrowers relative to other borrowers in response to the COVID-19 shocks, with somewhat different loan contract terms having statistically significant coefficients for term loans and revolvers. The *Rel Length* coefficients in Panels B1 and B2 paint a similar picture, with the exception of loan amounts for term loans. For *Rel Main Bank* in Panels C1 and C2, the statistically significant coefficients suggest relatively unfavorable terms from the main bank. These findings again largely support the dark side of relationships.

Table 6 shows an additional analysis in which we re-estimate our main results after splitting *Rel Exist* into *TL Rel Exist* and *RV Rel Exist*. These are indicators for the existence of one or more prior term loans and revolvers, respectively, from the current bank in the past three years. Both variables may equal one simultaneously if the borrower has both types of recent loans from this bank. Prior research suggests that revolvers may more often be associated with private information acquisition through relationship lending than term loans, which are more frequently transactions-based (Berger and Udell, 1995; Mester, Nakamura, and Renault, 2007; Norden and Weber, 2010). To our knowledge, inclusion of and comparison between the two types of bank-firm relationships in the same analysis are novel to the literature, although one paper examines different types of bank-consumer relationships (Puri, Rocholl, and Steffen, 2017).

Table 6 Panels A and B show results for term loans and revolvers, respectively. Our main finding that relationship borrowers fare poorly relative to other borrowers in response to the COVID-19 shocks is upheld for both term loans and revolvers. For term loans, this finding is

primarily driven by revolver relationships, consistent with the research suggesting that revolvers are more associated with relationship lending. However, for revolvers, both types of relationships lead to unfavorable outcomes for relationship borrowers during the crisis.¹⁹

5.4. Alternative COVID-19 Shocks

Table 7 Panels A-D provide results for replacing the four main COVID-19 public health and government activity restrictions shocks with an additional 10 shocks (all described in Table 1). Each panel shows results for a different loan contract term, and the “1” and “2” subpanels give findings for term loans and revolvers, respectively.

All statistically significant findings for the interaction terms in Table 7 suggest relationship borrowers fare relatively poorly in response to the COVID-19 shocks. These results again support our main finding of the empirical dominance of the dark side of relationships in times of need.

5.5. Propensity Score Matching (PSM)

We also conduct a propensity score matched analysis (PSM) (Rosenbaum and Rubin, 1983). We identify pairs of new originations to relationship and non-relationship borrowers that are similar along key dimensions discussed below but not whether the borrower had a lending relationship with the bank. Similar to Chava and Purnanandam (2011), we estimate a logit model using relationship existence as the binary dependent variable. We model a loan as belonging to one of the two groups based on the borrower’s size, industry, as well as its bank’s size. For every new loan to a relationship borrower, we find three neighboring loans to non-relationship borrowers granted in the same pre- and post-COVID-19 shock periods with the closest propensity scores.²⁰

¹⁹ An additional concern is that the results could be driven by firms in a few states with particularly low or high proportions of relationship loans. To address this, we conduct robustness checks in which we discard observations from states with the lowest and highest *REL_EXIST* proportions in our sample (<0.3 and ≥ 0.7 , respectively). After removing these potential outliers, our main findings remain materially unchanged. Not tabulated for brevity.

²⁰ We obtain similar results using four or five neighboring loans.

This allows us to find close matches between loans to relationship and non-relationship firms while maximizing the number of observations in our matched sample (e.g., Dahejia and Wahba, 2002; Smith and Todd, 2005; Chava and Purnanandam, 2011). We then apply the main regression model to the matched sample with similar firms in the control and treatment groups.

Table 8 shows that during the crisis, relationship borrowers fare worse relative to other borrowers on both their term loans (Panel A) and on their revolvers (Panel B). The coefficients of the DID interactions between *Rel Exist* and *COVID-19 Shock* are positive for interest rate spread and negative for maturity in Panel A, and positive for collateral and negative for loan amount in Panel B, again supporting the dark side of relationships during the COVID-19 crisis.

6. Differences by Firm and Bank Sizes and Other Firm, Loan, and Bank Characteristics

As discussed, the empirical literature generally suggests that small firms are more likely to benefit from relationship lending and small banks are more likely to deliver such benefits. Here we test these predictions to see whether there may be pockets of bright-side findings for smaller firms and smaller banks within our overall results.

We acknowledge that we do not have data on the smallest firms or the smallest banks. The Y-14Q explicitly excludes loans below \$1 million and “small business loans.” The dataset also explicitly excludes banks with under \$100 billion in assets. Nonetheless, we test whether the literature’s predictions apply to firms with total assets under \$25 million versus larger firms and Non-Top 4 versus Top 4 banks, the latter of which have roughly half of industry total assets.

We construct triple DID terms: *Rel Exist* \times *COVID-19 Shock* \times *Smaller Firm* captures the differential effects on loan contract terms for smaller relationship borrowers versus larger ones during the COVID-19 crisis, while *Rel Exist* \times *COVID-19 Shock* \times *Smaller Bank* captures the differential effects on loan contact terms for relationship borrowers at smaller banks versus larger

ones during such times. Every regression also includes all three double interaction terms and the uninteracted terms.

Table 9 Panels A1 and A2 show the findings for term loans and revolvers for smaller firms and B1 and B2 give analogous results for smaller banks. The results provide only limited support for the bright side for smaller firms and smaller banks. Most of the triple interactions are statistically insignificant, but the significant coefficients almost all are in the direction of more favorable terms for smaller relationship borrowers and for relationship borrowers at smaller banks.

We also investigate other dimensions of cross-sectional smoothing based on other firm, loan, and bank characteristics. We construct triple interactions by interacting *Rel Exist* \times *COVID-19 Shock* with dummies for high firm risk (high leverage), high loan risk (non-investment grade risk rating by the bank), and poor bank health (low capital, high nonperforming loans ratios, or low liquidity). We find few consistent results for the triple interaction terms, suggesting that banks do not significantly smooth by firm or loan risk, and that smoothing does not significantly differ between more and less financially healthy banks (results untabulated for brevity).

7. Effects of PPP on Relationship Lending During the COVID-19 Crisis

Our final set of tests considers potential differences in how relationship borrowers fare relative to other borrowers in the COVID-19 crisis when the bank extending the loan is more or less heavily involved in the PPP program. To be clear, all of the Y-14Q banks make PPP loans, but these loans are not included in the Y-14Q, and hence are not in our dataset. Prior research on PPP lending is summarized in Section 1.3. Nonetheless, the extent of PPP involvement of the banks may affect relationship borrowers obtaining traditional bank loans, since banks earn fee income on PPP loans without having to screen or monitor the PPP recipients or suffer exposure to any credit risk. The banks can use their additional PPP fee income to extend more favorable loan contract terms to

their relationship customers. Alternatively, these banks may increase their bargaining power relative to these borrowers due to the extra fee income, resulting in harsher loan contract terms. To address this, we focus on high PPP banks, those with above median PPP loans relative to total assets at the end of 2020:Q2, our only sample quarter during which the program was in effect. To address this, we run regressions in which we interact $Rel\ Exist \times COVID-19\ Shock$ with a *High PPP Bank* dummy, similar to the setup for smaller firms and smaller banks above.

Table 10 Panels 1 and 2 show the results. The coefficients on the triple DID terms show mixed results for term loans (lower spreads, but higher likelihood of collateral) and negative effects for revolvers (higher likelihood of collateral), suggesting somewhat worse overall treatment of relationship borrowers at High PPP banks. Our main findings of empirical dominance of the dark side of relationships during the COVID-19 crisis are generally upheld for both sets of banks.

8. “Rough Cut” at the Data to Assess Credit Availability at the Extensive Margin

To complete our study, we conduct a final analysis to rule out an alternative narrative to our findings of support for the dark side of relationships during the COVID-19 crisis. Specifically, we examine whether our findings of relatively worse credit terms for relationship borrowers at the intensive margin during the crisis might be offset by greater access to credit for these borrowers at the extensive margin. Ideally, we would analyze access to credit at the individual borrower level at each point in time and how it varies with relationship status. This would be represented by the amount that they could get times loan duration. Thus, a borrower with access to a \$2 million loan with a two-year duration would be measured as having four times as much credit access as a borrower who could obtain a \$1 million loan with a one-year duration because the bank is providing twice as much credit for twice as long. A borrower that cannot obtain a loan would be measured as having zero access. We cannot perform such analysis because our dataset only has

information on completed loan contracts – it does not track loan applications that were rejected or discouraged, nor does it have information on firms that did not need credit. However, we can conduct a second-best analysis in which we take a “rough cut” at the data. We focus on levels and changes in quantities of new credit at the bank-month level. We measure quantities as dollar-years obtained by summing the individual loan amounts times the maturity of those individual loans for a given bank in a month (e.g., Berger and Udell, 1992).²¹

We use two alternative dependent variables – $Ln(Dollar-Years)$, the log of the dollar years of credit provided by the bank in a particular month, and $Ln(\Delta Dollar-Years)$, the log of the change in this total, which takes lending trends into account. The key independent variables are the percent of the bank’s loans to its relationship borrowers (calculated using dollar years of credit), one of our four COVID-19 shocks, and their interaction (the DID term). We include bank controls from our main specifications, and weighted averages of the borrower and county controls at the bank level from equation (1), using dollar-years as weights, and bank fixed effects.

Table 11 presents the results. The DID terms are negative in all 16 cases (statistically significant in one case). These findings clearly do not suggest significant increased access to credit at the extensive margin during COVID-19 for relationship borrowers that might offset our main findings of worse loan contract terms for these borrowers at the intensive margin. While we emphasize that this bank-month level analysis is less precise than our main analyses of loan contract terms on the individual loan level, these additional findings clearly do not fundamentally change our main conclusion that the dark side of relationships dominates during the time of need created by the COVID-19 crisis.

9. Conclusions

²¹ We use maturities instead of durations, which cannot be calculated with the available data because they depend on the contract structure, prepayments, delinquencies, and defaults, as well as maturities.

Relationship lending is vital to borrowers in normal times and may be even more important during crises, when borrowers are most in need and the value of the soft information generated by relationship lending may be maximized. We address whether relationship borrowers fare better or worse than other borrowers during the COVID-19 crisis using a DID framework. We regress a number of loan contract terms on several relationship measures, numerous COVID-19 shocks constructed from public health and government activity restrictions data, interactions of the relationship measures and the shocks (the DID terms), and controls.

We find strong, robust results consistent with the empirical dominance of the dark side of relationships during the COVID-19 crisis. The findings hold across loan contract terms, relationship measures, COVID-19 shocks, and loan types. A “rough cut” at the data at the bank-month level suggests that our main findings for loan contract terms at the intensive margin are not offset by any increase in credit access for relationship borrowers at the extensive margin. Banks do not appear to be friends indeed with their relationship borrowers in need. However, there are limited pockets of bright-side findings associated with smaller firms and smaller banks.

Our results differ greatly from those in the literature for earlier crises, likely due to our use of the COVID-19 crisis. The COVID-19 shocks directly harm businesses that impact the banks, rather than the other way around in prior crises, such as the GFC. Thus, we are able to directly investigate whether relationship borrowers fare better or worse when *borrowers* are in need, rather than when *banks* are in need as in prior crises. Unlike shocks from prior crises such as the GFC, these shocks are also essentially exogenous to and unforeseen by the borrowers and banks, mitigating potential estimation biases.

Our findings raise the question of why banks might exploit their market power and hold up relationship borrowers during the COVID-19 crisis. We offer several explanations above. First,

the hold-up problem may primarily arise when borrowers are in need and the value of soft information from relationships is relatively high. Second, relationship banks may try to bolster their capital with earnings from higher spreads and other harsher credit terms on relationship borrowers that they cannot charge non-relationship borrowers. Finally, banks may try to gain market share during the crisis by offering relatively favorable terms to non-relationship borrowers. Unfortunately, our data do not allow us to differentiate among these alternatives.

Our results may have implications for firms, banks, policymakers, and researchers. The findings suggest that firms may not be able to count on relief from their relationship banks during rare exogenous shocks or “black swan” events. Firms with established banking relationships may consider taking out additional backup revolvers to protect themselves from such events or borrow from additional banks to offset the market power of their relationship banks (e.g., Detragiache, Garella, and Guiso, 2000). In contrast, firms without established banking relationships may gain from relatively easier contact terms. Relationship banks that are earning more from the harsh contract terms to their relationship borrowers during the crisis may suffer later to the extent that they lose some relationship customers or endure more credit losses due to aggravation of moral hazard and adverse selection problems. Other banks may gain by recruiting borrowers away from their relationship banks. Policymakers may be worried by financial stability implications of any associated bank credit losses that are not sufficiently buffered by increased bank capital. Policymakers may also be concerned about potential harm to the real economy from reduced hiring or capital expenditures by relationship borrowers. Future research may be able to trace out medium- and long-term effects of the relatively harsh loan contract terms on relationship borrowers and the real economies in their local markets.

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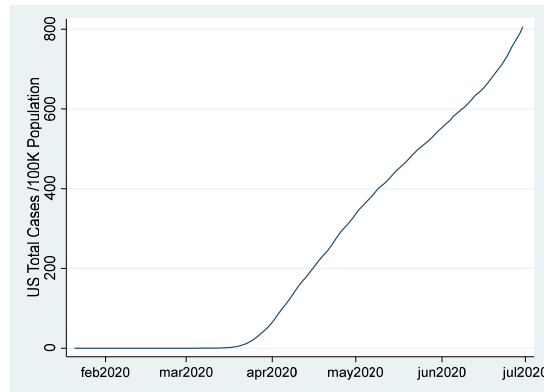
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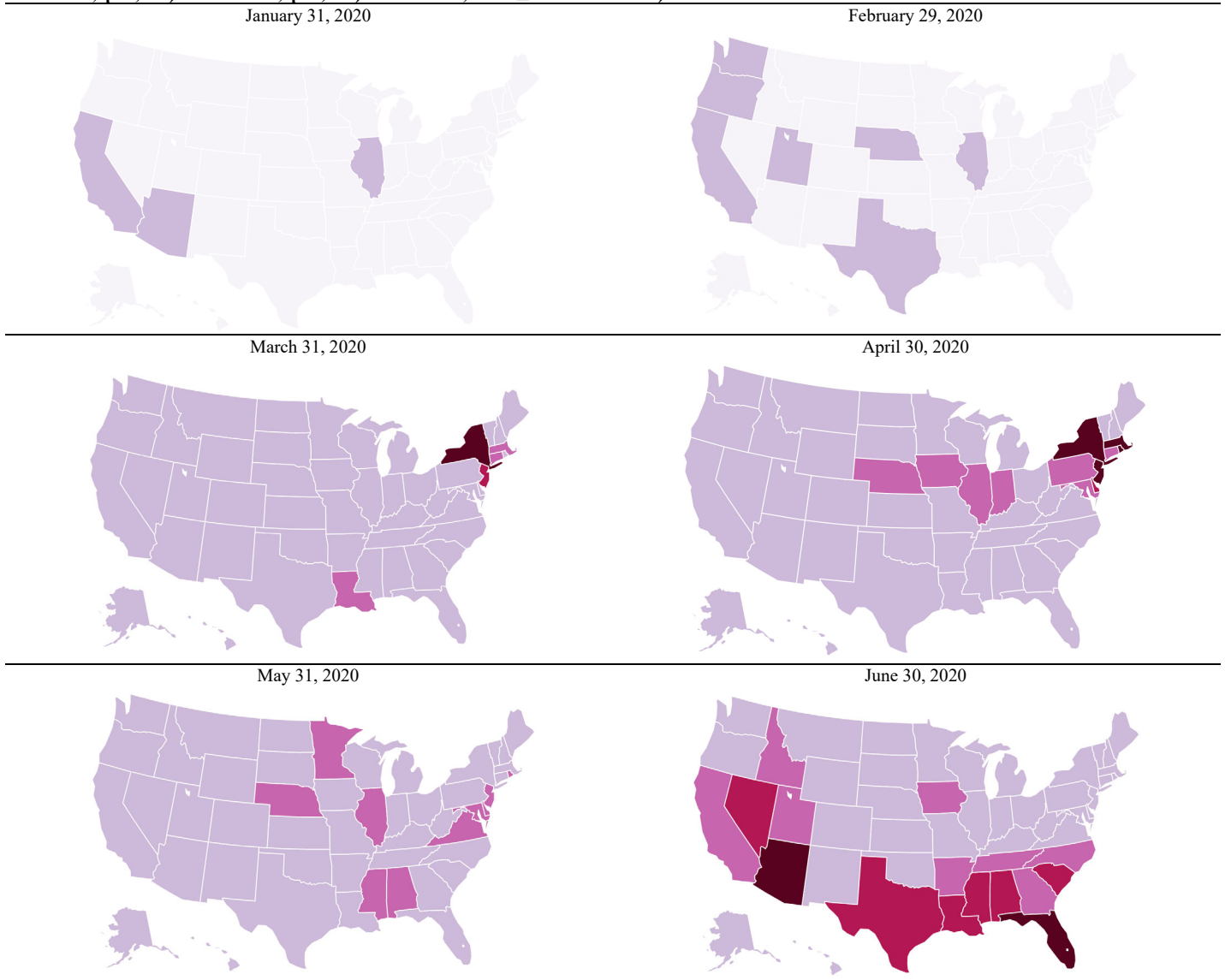
Figure 1. COVID-19 Shock Intensity Measures

Panels A – D show our main COVID-19 intensity measures at different points in time: *US New Cases / 100K Pop* (Panel A); *State New Cases / 100K Pop* (Panel B); *US Restrict Index* (Panel C); and *State Restrict Index* (Panel D). Panels E and F show auxiliary graphs: the evolution of the 10 government activity restrictions included in *US Restrict Index*, aggregated over all the states (Panel E); and *State Restriction Index* in each state (Panel F).

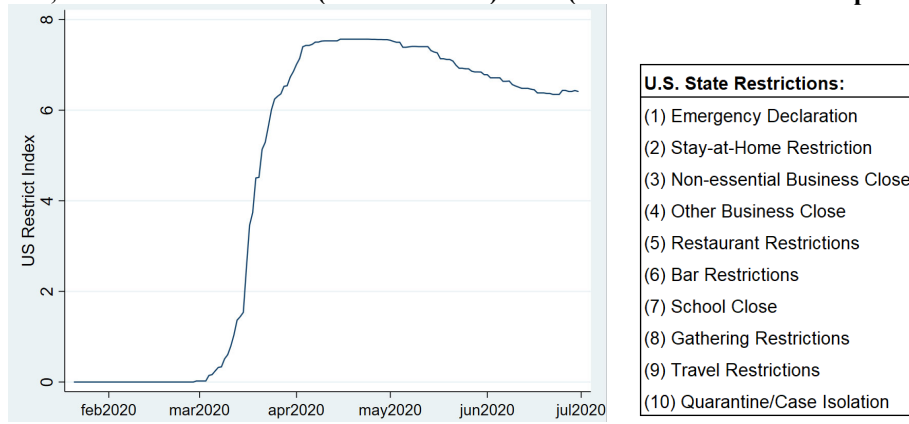
Panel A: US New Cases /100K Pop



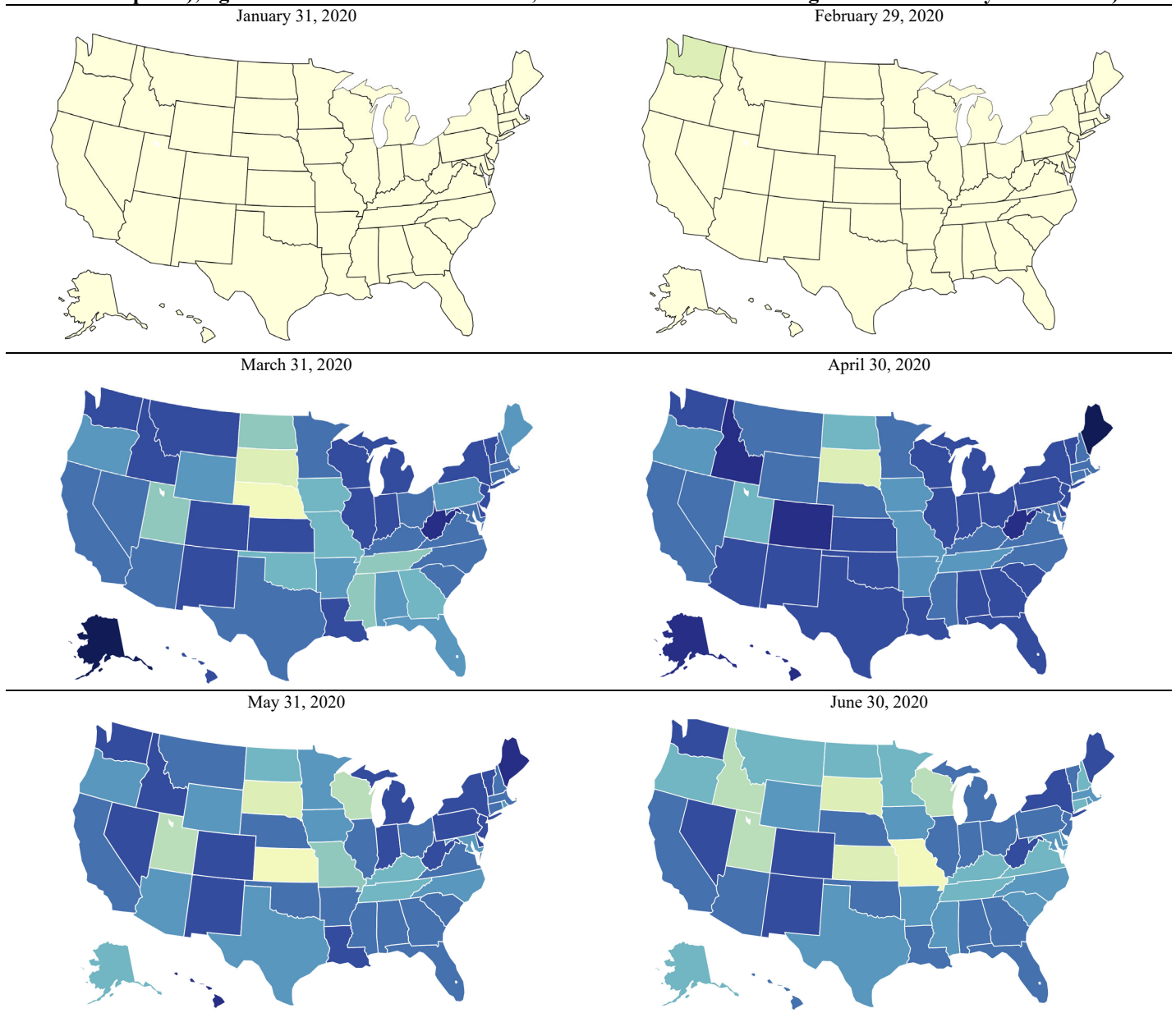
Panel B: State New Cases/100K Pop (Darker colors represent higher new case rates. We present 5 groups: 0 new cases; (0, 10) new cases; [10, 20) new cases; [20, 30) new cases, and ≥ 30 new cases.)



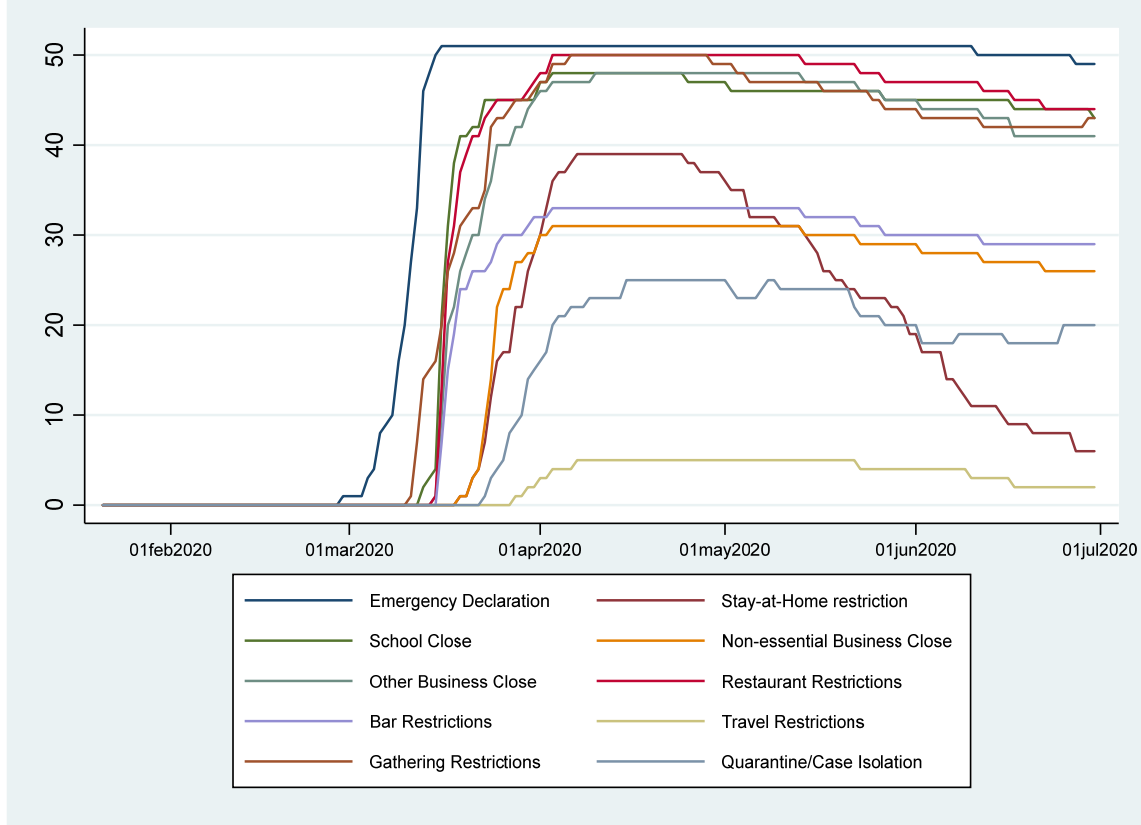
Panel C: US Restrict Index (The Index is a state-population weighted average of 10 individual U.S. state government activity restrictions for COVID-19; the index runs from 0 (no restrictions) to 10 (maximum number of imposed restrictions)).



Panel D: State Restrict Index (The index ranges from 0 (no government activity restrictions) to 10 (maximum number of restrictions imposed); light colors indicate no restrictions; darker colors indicate more government activity restrictions.)



Panel E: Number of U.S. states under individual restrictions over time (includes every contiguous U.S. state plus D.C.).



Panel F: State Restrict Index by state over time (each data point is an average for that state over the entire month)

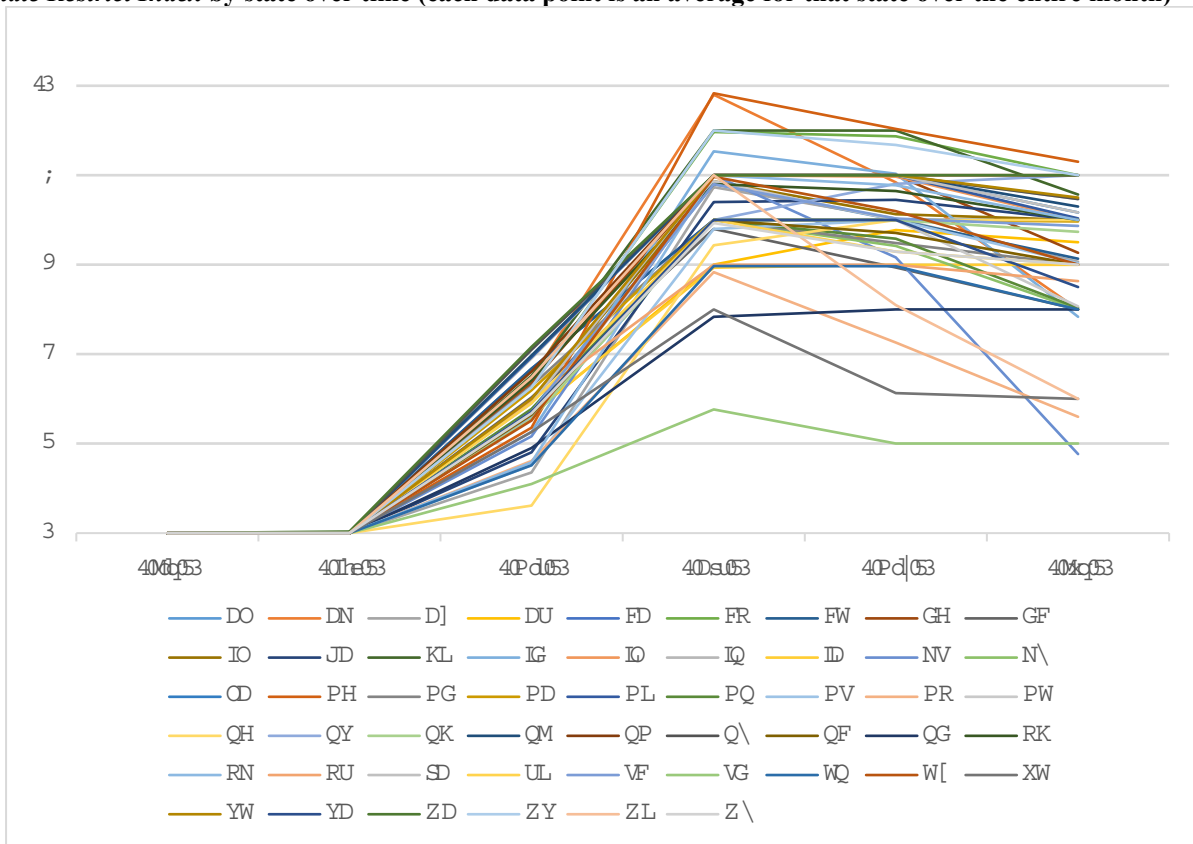
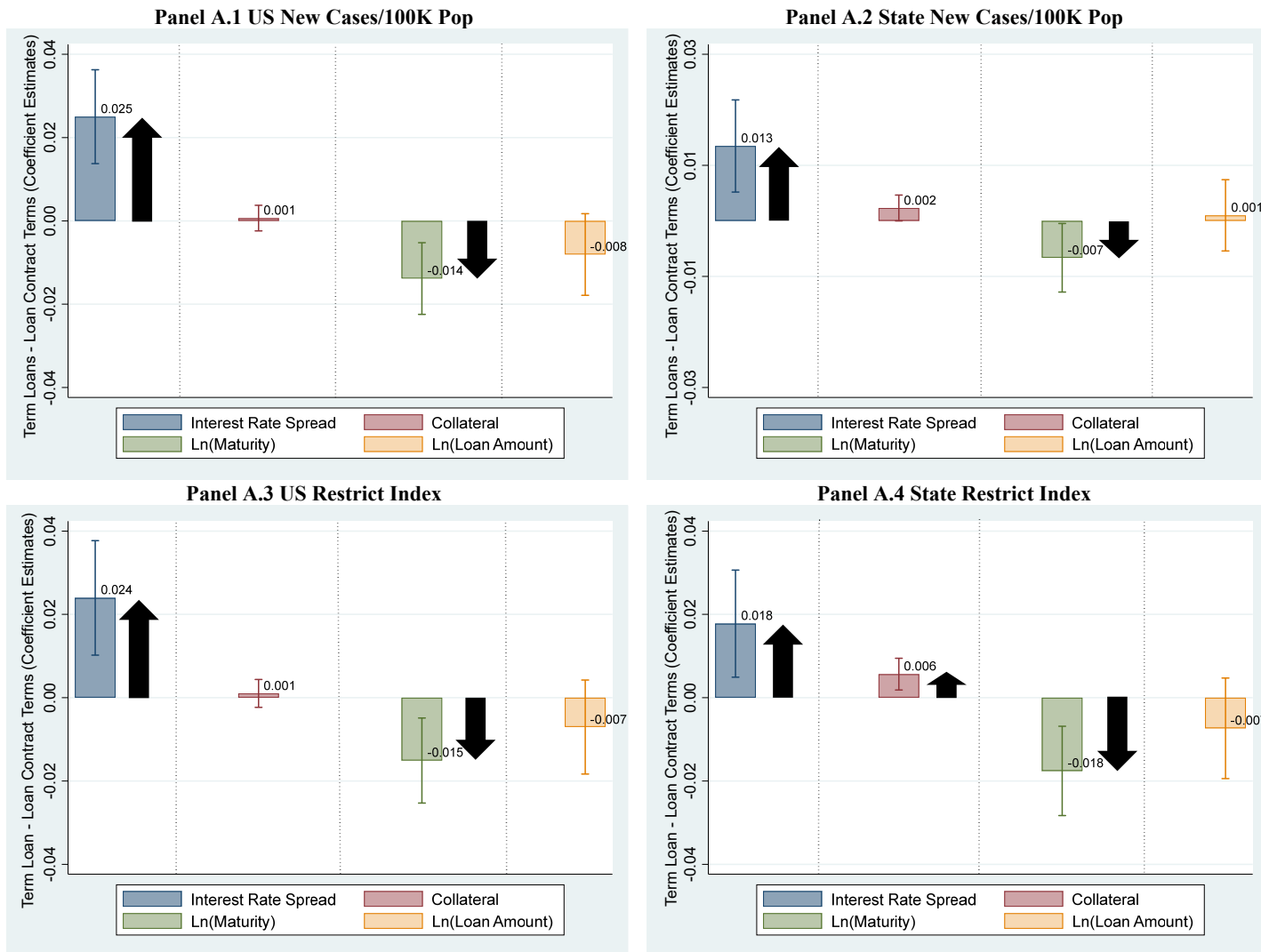


Figure 2. Loan Terms for Relationship versus Non-Relationship Borrowers during COVID-19

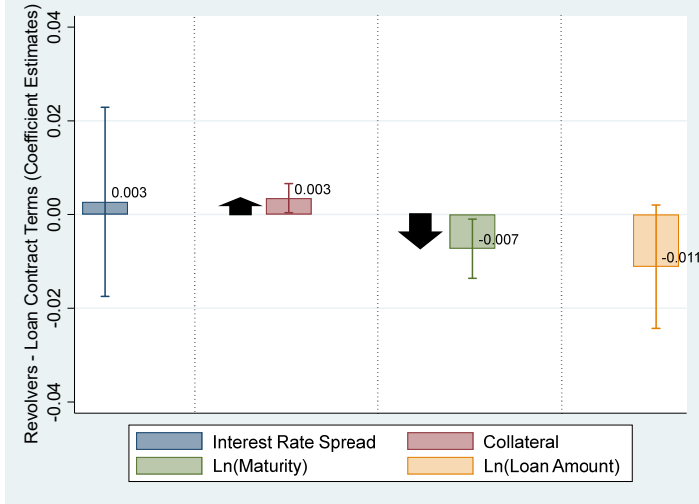
This figure plots regression coefficient estimates for the relationship existence dummy interacted with one of our main four COVID-19 shock variables from Table 2 together with their 90% confidence intervals. Black arrows indicate the size of interaction terms that are statistically significant at the 10% level. Results are shown for term loans in Panel A and for revolvers in Panel B. Each panel has results for four loan contract terms: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. Standard errors are clustered at the bank \times industry level.

Panel A. Term Loans

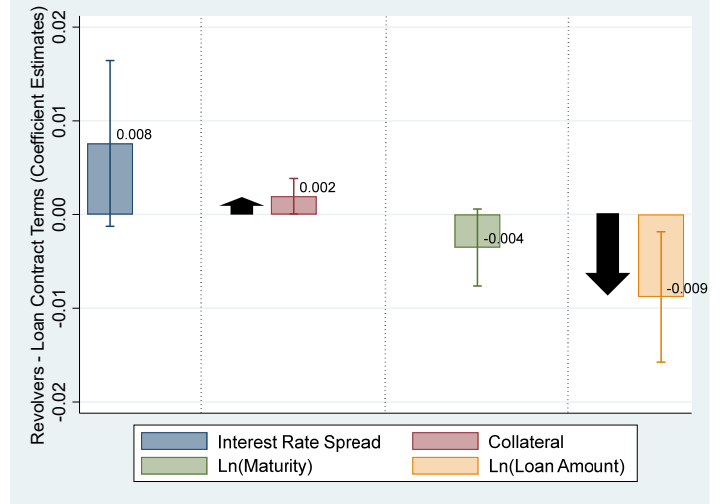


Panel B. Revolvers

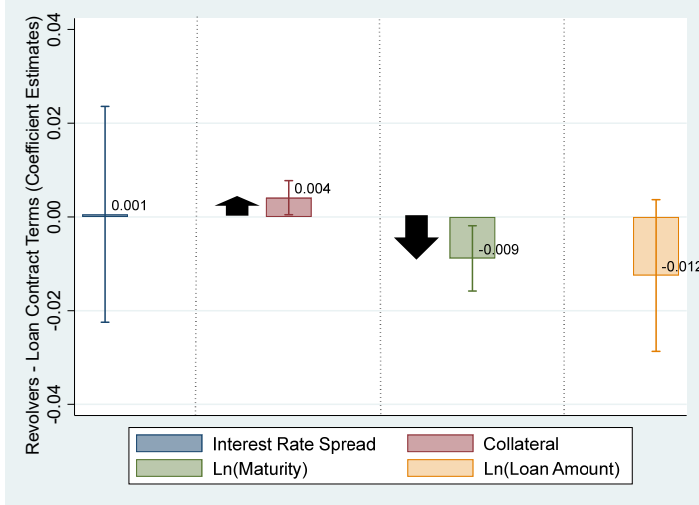
Panel B.1 US New Cases/100K Pop



Panel B.2 State New Cases/100K Pop



Panel B.3 US Restrict Index



Panel B.4 State Restrict Index

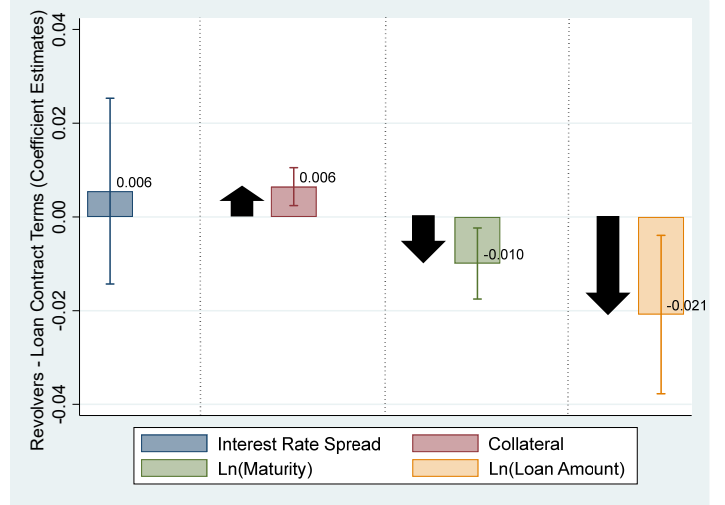


Table 1. Variable Definitions and Summary Statistics

The sample includes new corporate loans reported in the Y-14Q by banks with total assets above \$100 billion. Panel A provides variable descriptions and their sources. The data are merged using their most recent available values. Panels B and C display means of the dependent variables and independent variables plus a few additional variables, respectively. These summary statistics are shown separately for term loans and revolvers for: the whole sample period (April 1, 2018 – June 30, 2020); the pre-health shock period (April 1, 2018 – January 20, 2020), the health-shock period (January 21, 2020 – June 30, 2020), the pre-government activity-restrictions shock period (April 1, 2018 – February 28, 2020), and the government activity restrictions shock period (February 29, 2020 – June 30, 2020). The health shock started on the date when the first COVID-19 case was identified in the U.S., while the restrictions shock started on the date when the first state restrictions due to COVID-19 became active in the U.S. in Washington state.

Panel A. Variable Description and Sources

Variables:	Description:	Source:
MAIN SAMPLE SPLITS		
Term Loans	Includes the following categories: Term Loan, Term Loan A, Term Loan B, and Term Loan C. Excluded are: bridge term loans, asset-based term loans, and debtor-in-possession term loans.	FR Y-14Q Schedule H.1
Revolvers	Revolving lines of credit. Excluded are: revolvers that convert to term loans; debtor-in-possession revolvers; non-revolving lines of credit; and non-revolving lines of credit that convert to term loans.	FR Y-14Q Schedule H.1
DEPENDENT VARIABLES		
Interest Rate Spread	Interest rate spread over the rate of a constant maturity Treasury bond with a similar maturity.	FR Y-14Q Schedule H.1
Collateral	Dummy = 1 if the loan is collateralized.	FR Y-14Q Schedule H.1
Maturity (in years) <i>(excl. from regressions)</i>	Number of years from date of origination to date of maturity.	FR Y-14Q Schedule H.1
Ln(Maturity)	Natural log of one plus maturity, the number of years from date of origination to date of maturity.	FR Y-14Q Schedule H.1
Loan Amount (\$ million) <i>(excl. from regressions)</i>	Loan size in \$ million.	FR Y-14Q Schedule H.1
Ln(Loan Amount)	Natural log of one plus the loan amount, the size of the loan in \$ million.	FR Y-14Q Schedule H.1
INDEPENDENT VARIABLES		
Relationship Variables		
Rel Exist	Dummy = 1 if the borrower had prior loans with the bank over the past three years.	FR Y-14Q Schedule H.1
Rel Intens	Ratio of the dollar value of loans the firm obtained from the lending bank to the total dollar value of loans provided to the firm over the past three years.	FR Y-14Q Schedule H.1
Rel Length	Natural log of one plus the length in years since the first loan the firm got from the bank.	FR Y-14Q Schedule H.1
Rel Main Bank	Dummy = 1 if the borrower received the largest share of loans cumulatively from the bank over the past three years.	FR Y-14Q Schedule H.1
TL Rel Exist	Dummy = 1 if the borrower had prior term loans with the bank over the past three years.	FR Y-14Q Schedule H.1
RV Rel Exist	Dummy = 1 if the borrower had revolvers with the bank over the past three years.	FR Y-14Q Schedule H.1
COVID-19 Variables		
Main Measures		
US New Cases/100K Pop	U.S. newly confirmed COVID-19 cases per 100,000 people, seven day moving avg.	The Economic Tracker
State New Cases/100K Pop	State newly confirmed COVID-19 cases per 100,000 people, seven day moving avg.	The Economic Tracker
US Restrict Index	U.S. government activity restrictions index, constructed as the state-population weighted average of 10 individual U.S. state activity restrictions for COVID-19. The 10 individual activity restrictions are listed below under State Restrict Index.	University of Washington COVID-19 Policies
State Restrict Index	State restrictions index, which captures 10 government mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay At Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state. Thus, index values range from 0 to 10, with 10 being the most restrictive.	University of Washington COVID-19 Policies
Additional Measures		
US Health Crisis (≥ 100 cases)	Dummy = 1 from the date the 100th COVID-19 case was identified in the U.S..	Johns Hopkins Coronavirus Resource Center
State Health Crisis (≥ 100 cases)	Dummy = 1 from the date the 100th COVID-19 case was identified in the state.	Johns Hopkins Coronavirus Resource Center
US New Deaths/100K Pop	U.S. newly confirmed COVID-19 deaths per 100,000 people, seven day moving average.	The Economic Tracker
State New Deaths/100K Pop	State newly confirmed COVID-19 deaths per 100,000 people, seven day moving average.	The Economic Tracker
US Total Cases/100K Pop	U.S. confirmed total number of COVID-19 cases per 100,000 people, seven day moving average.	The Economic Tracker
State Total Cases/100K Pop	State confirmed COVID-19 cases per 100,000 people, seven day moving average.	The Economic Tracker
US Total Deaths/100K Pop	U.S. confirmed COVID-19 deaths per 100,000 people, seven day moving average.	The Economic Tracker
State Total Deaths/100K Pop	State confirmed COVID-19 deaths per 100,000 people, seven day moving average.	The Economic Tracker
US Economic Crisis	Dummy = 1 from Feb 29, 2020 onward (when the first state restrictions due to COVID-19 became active in the U.S. in Washington State).	University of Washington COVID-19 Policies
State GPS Immobility	Google GPS immobility indexed to Jan 3-Feb 6, 2020 showing time spent inside (rather than outside) of residential locations.	The Economic Tracker
Loan Controls		
Rating: HIG <i>(left-out category)</i>	Dummy = 1 if the bank internally rates the loan in the A range or above.	FR Y-14Q Schedule H.1
Rating: LIG	Dummy = 1 if the bank internally rates the loan in the BBB range.	FR Y-14Q Schedule H.1
Rating: HSG	Dummy = 1 if the bank internally rates the loan in the BB range.	FR Y-14Q Schedule H.1
Rating: LSG	Dummy = 1 if the bank internally rates the loan in the B range or below.	FR Y-14Q Schedule H.1

Non-Inv Grade (<i>in sample split only</i>)	Dummy = 1 if the bank internally rates the loan in the BB range or below.	FR Y-14Q Schedule H.1
Non-Syndicated	Dummy = 1 if the loan is not a syndicated loan.	FR Y-14Q Schedule H.1
Floating Rate	Dummy = 1 if the loan is a floating-rate loan.	FR Y-14Q Schedule H.1
Mixed Rate	Dummy = 1 if the loan is a mixed-rate loan.	FR Y-14Q Schedule H.1
Purpose: Miscellaneous (<i>left-out category</i>)	Dummy = 1 if loan purpose is related to activities other than M&A or capital expenditures, general purpose, or commercial real estate.	FR Y-14Q Schedule H.1
Purpose: Acq/Capex	Dummy = 1 if loan purpose is related to M&A or capital expenditures.	FR Y-14Q Schedule H.1
Purpose: General	Dummy = 1 if loan purpose is general purpose.	FR Y-14Q Schedule H.1
Purpose: CRE	Dummy = 1 if loan purpose is related to commercial real estate.	FR Y-14Q Schedule H.1
Multi Facility has RV	Dummy = 1 if there is an additional revolver in the same loan package.	FR Y-14Q Schedule H.1
Multi Facility has TL	Dummy = 1 if there is an additional term loan in the same loan package.	FR Y-14Q Schedule H.1

Firm Controls

Size (<i>excl. from regressions</i>)	Firm size, measured by total assets in \$ million.	FR Y-14Q Schedule H.1
Size: <\$25mil (<i>left-out category</i>)	Dummy = 1 if firm size is up to \$25 million. This group is referred to as small firms.	FR Y-14Q Schedule H.1
Size: [\$25mil, \$250mil)	Dummy = 1 if firm size is between \$25 million and \$250 million.	FR Y-14Q Schedule H.1
Size: ≥\$250mil	Dummy = 1 if firm size exceeds \$250 million.	FR Y-14Q Schedule H.1
Size: Missing	Dummy = 1 if firm size is missing.	FR Y-14Q Schedule H.1
Past Delinquency	Dummy = 1 if the firm had a loan 90 days past due.	FR Y-14Q Schedule H.1
ROA	Return on the assets of the firm, calculated as net income/ total assets.	FR Y-14Q Schedule H.1
ROA Missing	Dummy = 1 if firm ROA is missing.	FR Y-14Q Schedule H.1
Leverage Ratio	Leverage ratio of the firm.	FR Y-14Q Schedule H.1
Leverage Missing	Dummy = 1 if the firm leverage ratio variable is missing.	FR Y-14Q Schedule H.1
Ln(Exposure TL)	Natural log of one plus the total \$ amount of term loans the firm has from this bank.	FR Y-14Q Schedule H.1
Ln(Exposure RV)	Natural log of one plus the total \$ amount of revolvers the firm has from this bank.	FR Y-14Q Schedule H.1
Ln(Unused Exp RV)	Natural log of one plus the total \$ amount of unused lines the firm has from this bank.	FR Y-14Q Schedule H.1
Ln(Unused Exp Other)	Natural log of one plus the total \$ amount of other loans the firm has from this bank.	FR Y-14Q Schedule H.1
Private	Dummy = 1 if the firm is a private firm.	FR Y-14Q Schedule H.1
Public Debt Rating	Dummy = 1 if the firm has a public debt rating.	COMPUSTAT

Bank Controls

Size (\$mil)	Bank total assets in \$ million.	FR Y-9C
Ln(Size)	Natural log of one plus the bank total assets.	FR Y-9C
Capital Ratio	Equity ratio, calculated as total equity/total assets.	FR Y-9C
NPL Ratio	Non-performing loan ratio, calculated as (loans at least 90 days past due or in nonaccrual status)/total assets.	FR Y-9C
Liquidity Ratio	Liquid asset ratio, calculated as (cash + marketable securities)/total assets.	FR Y-9C
ROA	Return on assets, calculated as net income/ total assets.	FR Y-9C

County Controls

Unemployment Rate	County unemployment rate.	U.S. Census / Haver Analytics
HPI	County Housing Price Index.	CoreLogic Solutions
Change HPI	One-month change in county HPI.	CoreLogic Solutions
Population Density	County population density (population over square miles).	U.S. Census Bureau

Other Variable

High Leverage Firm	Dummy = 1 if the firm leverage ratio is higher than the sample median.	FR Y-14Q Schedule H.1
Smaller Bank	Dummy = 1 if bank is not in the top four lenders in terms of bank total assets.	FR Y-9C
Low Capital Bank	Dummy = 1 if the bank capital ratio is lower than the sample median.	FR Y-9C
High NPL Bank	Dummy = 1 if the bank NPL ratio is higher than the sample median.	FR Y-9C
Low Liquidity Bank	Dummy = 1 if the bank liquidity ratio is lower than the sample median.	FR Y-9C
High PPP Bank	Dummy = 1 if bank PPP loans scaled by total assets is higher than the sample median.	FR Y-9C

Panel B. Summary Statistics - Dependent Variables

Sample/Subsample	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Full Sample	Pre-Health Shock	During Health Shock	Pre-Restrict Shock	During Restrict Shock	Full Sample	Pre-Health Shock	During Health Shock	Pre-Restrict Shock	During Restrict Shock
	Term Loans					Revolvers				
Number of Obs.	27,153	21,432	5,721	22,653	4,500	26,184	19,645	6,539	20,868	5,316
Interest Rate Spread	2.091	1.973	2.535	1.980	2.651	2.346	2.224	2.729	2.217	2.900
Collateral	0.826	0.825	0.829	0.827	0.818	0.736	0.728	0.758	0.732	0.752
Maturity (in years) (<i>excl. from regressions</i>)	5.665	5.672	5.639	5.690	5.538	1.642	1.703	1.458	1.698	1.421
Ln(Maturity)	1.334	1.343	1.299	1.347	1.267	0.205	0.234	0.116	0.233	0.095
Loan Amount (\$mill) (<i>excl. from regressions</i>)	33.653	34.507	30.454	34.469	29.545	63.742	64.287	62.105	62.692	67.864
Ln(Loan Amount)	15.231	15.217	15.285	15.217	15.303	15.528	15.496	15.622	15.489	15.679

Panel C. Summary Statistics – Independent Variables

Sample/Subsample	Term Loans					Revolvers				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Full Sample	Pre-Health Shock	During Health Shock	Pre-Restrict Shock	During Restrict Shock	Full Sample	Pre-Health Shock	During Health Shock	Pre-Restrict Shock	During Restrict Shock
Number of Obs.	27,153	21,432	5,721	22,653	4,500	26,184	19,645	6,539	20,868	5,316
Relationship Variables										
Rel Exist	0.407	0.401	0.429	0.400	0.440	0.432	0.433	0.429	0.430	0.441
Rel Intens	0.328	0.323	0.345	0.322	0.357	0.399	0.401	0.390	0.399	0.397

Rel Length	1.730	1.663	1.983	1.668	2.043	2.067	1.993	2.287	1.990	2.365
Rel Main Bank	0.330	0.319	0.348	0.324	0.359	0.400	0.354	0.389	0.402	0.396
TL Rel Exist	0.076	0.074	0.082	0.074	0.086	0.346	0.351	0.331	0.348	0.336
RV Rel Exist	0.304	0.300	0.319	0.300	0.325	0.096	0.095	0.099	0.093	0.108
COVID-19 Shock Variables										
Main Measures										
US New Cases/100K Pop	1.028	0.000	4.881	0.000	n/a	1.336	0.000	5.351	0.000	n/a
State New Cases/100K Pop	0.938	0.000	4.452	0.000	n/a	1.259	0.000	5.042	0.000	n/a
US Restrict Index	0.999	0.000	n/a	0.000	6.029	1.268	0.000	n/a	0.000	6.247
State Restrict Index	0.886	0.000	n/a	0.000	5.349	1.150	0.000	n/a	0.000	5.663
Additional Measures										
US Health Crisis (≥ 100 cases)	0.161	0.000	0.766	0.000	n/a	0.198	0.000	0.793	0.000	n/a
State Health Crisis (≥ 100 cases)	0.128	0.000	0.606	0.000	n/a	0.164	0.000	0.659	0.000	n/a
US New Deaths/100K Pop	0.049	0.000	0.235	0.000	n/a	0.067	0.000	0.268	0.000	n/a
State New Deaths/100K Pop	0.047	0.000	0.225	0.000	n/a	0.065	0.000	0.260	0.000	n/a
US Total Cases/100K Pop	50.539	0.000	239.867	0.000	n/a	66.906	0.000	267.910	0.000	n/a
State Total Cases/100K Pop	46.810	0.000	222.168	0.000	n/a	64.433	0.000	258.010	0.000	n/a
US Total Deaths/100K Pop	2.738	0.000	12.995	0.000	n/a	3.665	0.000	14.674	0.000	n/a
State Total Deaths/100K Pop	2.653	0.000	12.590	0.000	n/a	3.609	0.000	14.450	0.000	n/a
US Economic Crisis	0.166	0.000	n/a	0.000	1.000	0.203	0.000	n/a	0.000	1.000
State GPS Immobility	0.022	0.000	n/a	0.000	0.131	0.028	0.000	n/a	0.000	0.136
Loan Controls										
Rating: HIG (<i>left out category</i>)	0.076	0.070	0.099	0.069	0.109	0.122	0.122	0.123	0.121	0.125
Rating: LIG	0.244	0.250	0.221	0.248	0.220	0.290	0.295	0.276	0.293	0.28
Rating: HSG	0.518	0.525	0.492	0.524	0.487	0.410	0.415	0.394	0.415	0.387
Rating: LSG	0.163	0.156	0.188	0.158	0.184	0.178	0.169	0.207	0.171	0.207
Non-Inv Grade	0.681	0.681	0.680	0.682	0.672	0.588	0.584	0.601	0.586	0.594
Non-Syndicated	0.957	0.959	0.950	0.959	0.948	0.929	0.929	0.930	0.930	0.927
Floating Rate	0.416	0.423	0.388	0.422	0.385	0.522	0.533	0.489	0.536	0.468
Mixed Rate	0.082	0.082	0.083	0.082	0.085	0.417	0.404	0.455	0.401	0.479
Purpose: Miscellaneous (<i>left out category</i>)	0.229	0.219	0.266	0.220	0.275	0.280	0.290	0.248	0.292	0.230
Purpose: Acq/Capex	0.241	0.251	0.203	0.250	0.196	0.020	0.022	0.017	0.022	0.016
Purpose: General	0.292	0.294	0.281	0.294	0.282	0.681	0.667	0.725	0.665	0.744
Purpose: CRE	0.237	0.234	0.25	0.235	0.247	0.019	0.022	0.011	0.021	0.011
Multi Facility has RV	0.061	0.059	0.068	0.061	0.063	0.72	0.839	0.362	0.841	0.245
Multi Facility has TL	0.740	0.824	0.426	0.826	0.308	0.054	0.056	0.047	0.057	0.041
Firm Controls										
Size (<i>excl. from regressions</i>)	2.794	2.720	3.049	2.680	3.320	3.296	3.455	2.878	3.328	3.188
Size: <\$25mil (<i>Small Firm, left-out category</i>)	0.145	0.135	0.183	0.138	0.180	0.216	0.200	0.265	0.203	0.269
Size: [\$25mil, \$250mil)	0.231	0.234	0.219	0.234	0.218	0.162	0.162	0.162	0.162	0.159
Size: \geq \$250mil	0.147	0.144	0.158	0.143	0.165	0.135	0.133	0.141	0.131	0.151
Size: Missing	0.477	0.487	0.440	0.485	0.437	0.486	0.505	0.431	0.503	0.421
Past Delinquency	0.054	0.052	0.062	0.051	0.066	0.052	0.049	0.059	0.048	0.065
ROA	0.048	0.046	0.053	0.046	0.053	0.051	0.046	0.065	0.046	0.067
ROA Missing	0.514	0.521	0.490	0.518	0.493	0.520	0.535	0.472	0.533	0.466
Leverage Ratio	0.404	0.406	0.398	0.406	0.396	0.313	0.313	0.313	0.312	0.316
Leverage Missing	0.491	0.499	0.460	0.498	0.457	0.539	0.554	0.492	0.554	0.481
Private	0.938	0.938	0.935	0.939	0.933	0.920	0.919	0.922	0.920	0.917
Public Debt Rating	0.030	0.029	0.033	0.029	0.036	0.030	0.030	0.031	0.030	0.034
Bank Controls										
Size (\$mil)	1121.613	1120.088	1127.327	1120.469	1127.373	966.576	946.583	1026.641	952.675	1021.144
Ln(Size)	20.163	20.159	20.176	20.162	20.168	19.938	19.901	20.049	19.910	20.047
Capital Ratio	0.115	0.116	0.112	0.116	0.111	0.110	0.111	0.106	0.111	0.106
NPL Ratio	0.010	0.011	0.009	0.010	0.009	0.009	0.009	0.009	0.009	0.009
Liquidity Ratio	0.247	0.247	0.249	0.247	0.251	0.297	0.299	0.292	0.299	0.291
ROA	0.003	0.003	0.002	0.003	0.001	0.003	0.003	0.002	0.003	0.001
County Controls										
Unemployment Rate	3.363	3.105	4.331	3.115	4.614	3.555	3.163	4.736	3.167	5.082
HPI	172.630	170.702	179.852	171.310	179.271	174.370	172.847	178.944	173.308	178.539
Change in HPI	0.003	0.003	0.005	0.003	0.006	0.003	0.003	0.005	0.003	0.007
Population Density	3241.5	3192.7	3424.4	3217.0	3365.2	4039.9	4054.3	3996.5	4071.8	3914.4
Other Variables										
High Leverage Firm	0.295	0.289	0.317	0.291	0.316	0.189	0.179	0.218	0.179	0.226
Smaller Bank	0.581	0.572	0.616	0.573	0.623	0.648	0.646	0.655	0.644	0.665
Low Capital Bank	0.405	0.387	0.474	0.391	0.476	0.522	0.505	0.574	0.512	0.559
High NPL Bank	0.546	0.563	0.479	0.562	0.461	0.429	0.427	0.438	0.429	0.433
Low Liquidity Bank	0.498	0.490	0.528	0.494	0.518	0.486	0.477	0.512	0.481	0.504
PPP Loans Ratio	0.019	0.019	0.020	0.019	0.020	0.017	0.017	0.018	0.017	0.018
High PPP Bank	0.657	0.673	0.597	0.674	0.570	0.562	0.577	0.517	0.575	0.513

Table 2. Loan Terms for Relationship versus Non-Relationship Borrowers during COVID-19

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers. Results are presented separately for term loans (Panel A) and revolving loans (Panel B). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank \times industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist \times COVID-19 Shock	0.025*** (3.66)	0.013*** (2.68)	0.024*** (2.87)	0.018** (2.28)	0.001 (0.35)	0.002 (1.64)	0.001 (0.51)	0.006** (2.44)	-0.014*** (-2.65)	-0.007* (-1.77)	-0.015** (-2.44)	-0.018*** (-2.70)	-0.008 (-1.36)	0.001 (0.26)	-0.007 (-1.03)	-0.007 (-1.00)
Rel Exist	0.003 (0.10)	0.017 (0.57)	0.005 (0.16)	0.015 (0.50)	-0.042*** (-4.60)	-0.044*** (-4.85)	-0.043*** (-4.65)	-0.047*** (-4.97)	-0.189*** (-7.04)	-0.197*** (-7.29)	-0.188*** (-6.94)	-0.186*** (-6.94)	-0.033 (-1.38)	-0.042* (-1.84)	-0.034 (-1.44)	-0.034 (-1.41)
COVID-19 Shock	0.032*** (4.45)	-0.006* (-1.81)	0.062*** (6.89)	0.022*** (2.81)	-0.001 (-0.64)	-0.002* (-1.76)	-0.004* (-1.71)	-0.004* (-1.86)	0.038*** (5.33)	0.013*** (4.80)	0.038*** (4.60)	0.043*** (6.54)	0.009 (1.43)	-0.001 (-0.17)	0.013* (1.87)	0.018** (2.39)
Loan Controls																
Rating: LIG	0.334*** (6.57)	0.333*** (6.56)	0.337*** (6.61)	0.336*** (6.61)	0.044** (2.24)	0.045** (2.26)	0.044** (2.24)	0.044** (2.23)	0.054 (1.07)	0.050 (1.01)	0.053 (1.07)	0.056 (1.12)	-0.418*** (-4.70)	-0.419*** (-4.71)	-0.418*** (-4.70)	-0.416*** (-4.69)
Rating: HSG	0.664*** (11.90)	0.662*** (11.82)	0.665*** (11.90)	0.665*** (11.85)	0.101*** (4.67)	0.102*** (4.69)	0.101*** (4.66)	0.101*** (4.64)	0.057 (1.10)	0.052 (1.02)	0.056 (1.08)	0.058 (1.13)	-0.659*** (-6.80)	-0.661*** (-6.82)	-0.659*** (-6.81)	-0.658*** (-6.79)
Rating: LSG	1.281*** (16.69)	1.282*** (16.69)	1.282*** (16.72)	1.283*** (16.68)	0.123*** (5.36)	0.123*** (5.36)	0.123*** (5.35)	0.122*** (5.31)	-0.112** (-2.09)	-0.117** (-2.20)	-0.113** (-2.11)	-0.111** (-2.07)	-0.830*** (-7.58)	-0.833*** (-7.61)	-0.830*** (-7.59)	-0.829*** (-7.59)
Non-Syndicated	-0.125 (-1.42)	-0.129 (-1.46)	-0.117 (-1.31)	-0.125 (-1.42)	0.120*** (4.65)	0.120*** (4.67)	0.119*** (4.65)	0.120*** (4.66)	-0.277*** (-4.44)	-0.280*** (-4.53)	-0.275*** (-4.42)	-0.275*** (-4.41)	-2.488*** (-22.47)	-2.488*** (-22.51)	-2.487*** (-22.45)	-2.487*** (-22.44)
Floating Rate	0.017 (0.44)	0.015 (0.40)	0.020 (0.52)	0.015 (0.39)	-0.092*** (-7.15)	-0.092*** (-7.16)	-0.092*** (-7.17)	-0.092*** (-7.16)	-0.481*** (-13.27)	-0.483*** (-13.41)	-0.480*** (-13.25)	-0.482*** (-13.30)	0.509*** (12.83)	0.509*** (12.88)	0.510*** (12.82)	0.509*** (12.83)
Mixed Rate	0.532 (1.38)	0.547 (1.41)	0.535 (1.40)	0.553 (1.42)	-0.043** (-2.10)	-0.043** (-2.10)	-0.044** (-2.12)	-0.043** (-2.09)	-0.924*** (-12.37)	-0.925*** (-12.29)	-0.924*** (-12.39)	-0.926*** (-12.48)	0.445*** (10.48)	0.444*** (10.49)	0.445*** (10.52)	0.445*** (10.48)
Purpose: Acq/Capex	0.214*** (3.39)	0.207*** (3.28)	0.217*** (3.44)	0.212*** (3.36)	-0.052** (-2.31)	-0.052** (-2.31)	-0.052** (-2.32)	-0.052** (-2.31)	0.286*** (6.71)	0.285*** (6.72)	0.286*** (6.72)	0.287*** (6.73)	-0.045 (-0.91)	-0.045 (-0.92)	-0.044 (-0.90)	-0.044 (-0.89)
Purpose: General	0.124** (2.17)	0.117** (2.06)	0.126** (2.20)	0.123** (2.15)	-0.126*** (-5.07)	-0.127*** (-5.09)	-0.127*** (-5.07)	-0.126*** (-5.08)	0.028 (0.57)	0.027 (0.56)	0.027 (0.55)	0.028 (0.59)	0.132*** (2.69)	0.132*** (2.69)	0.133*** (2.69)	0.134*** (2.71)
Purpose: CRE	-0.013 (-0.22)	-0.017 (-0.30)	-0.012 (-0.21)	-0.014 (-0.24)	-0.007 (-0.05)	-0.007 (-0.35)	-0.007 (-0.35)	-0.007 (-0.33)	0.462*** (11.17)	0.463*** (11.30)	0.462*** (11.17)	0.462*** (11.19)	-0.011 (-0.22)	-0.011 (-0.22)	-0.011 (-0.21)	-0.011 (-0.21)
Multi Facility has RV	0.163** (2.35)	0.156** (2.27)	0.164** (2.36)	0.159** (2.30)	0.004 (0.21)	0.004 (0.21)	0.004 (0.21)	0.004 (0.23)	0.002 (0.04)	0.001 (0.02)	0.000 (0.01)	0.000 (0.01)	0.208*** (5.04)	0.208*** (5.03)	0.208*** (5.04)	0.209*** (5.04)
Multi Facility has TL	-0.230*** (-5.92)	-0.292*** (-8.32)	-0.203*** (-5.29)	-0.260*** (-7.03)	0.062*** (5.95)	0.061*** (6.27)	0.059*** (5.94)	0.061*** (6.13)	0.488*** (12.75)	0.458*** (13.45)	0.480*** (12.62)	0.480*** (13.40)	0.005 (0.16)	-0.003 (-0.13)	0.009 (0.33)	0.012 (0.44)
Firm Controls																
Size: [\$25mil, \$250mil]	-0.263*** (-8.80)	-0.255*** (-8.59)	-0.265*** (-8.91)	-0.258*** (-8.75)	0.021*** (2.72)	0.021*** (2.69)	0.021*** (2.75)	0.020*** (2.65)	0.046* (1.66)	0.049* (1.78)	0.047* (1.71)	0.049* (1.77)	0.387*** (16.49)	0.386*** (16.51)	0.386*** (16.43)	0.386*** (16.48)
Size: \geq \$250mil	-0.291*** (-4.69)	-0.284*** (-4.62)	-0.291*** (-4.68)	-0.286*** (-4.64)	-0.021 (-1.29)	-0.021 (-1.30)	-0.020 (-1.28)	-0.021 (-1.32)	0.017 (0.36)	0.021 (0.43)	0.019 (0.40)	0.020 (0.43)	0.838*** (17.28)	0.839*** (17.30)	0.838*** (17.27)	0.838*** (17.29)
Size: Missing	-0.208* (-1.96)	-0.216** (-2.02)	-0.195* (-1.83)	-0.207* (-1.94)	-0.029 (-1.17)	-0.029 (-1.15)	-0.030 (-1.17)	-0.030 (-1.18)	0.141 (1.20)	0.138 (1.18)	0.144 (1.22)	0.148 (1.26)	0.375*** (4.21)	0.372*** (4.16)	0.376*** (4.23)	0.379*** (4.27)
Past Delinquency	-0.011 (-0.20)	-0.007 (-0.13)	-0.012 (-0.22)	-0.008 (-0.15)	0.024 (1.45)	0.024 (1.45)	0.024 (1.46)	0.024 (1.45)	-0.094** (-2.22)	-0.092** (-2.16)	-0.093** (-2.19)	-0.093** (-2.18)	0.012 (0.21)	0.013 (0.23)	0.012 (0.21)	0.012 (0.21)

ROA	-0.103 (-1.39)	-0.103 (-1.37)	-0.103 (-1.39)	-0.106 (-1.43)	-0.010 (-0.54)	-0.010 (-0.54)	-0.010 (-0.54)	-0.010 (-0.53)	0.136** (2.51)	0.136** (2.53)	0.136** (2.50)	0.132** (2.44)	-0.151*** (-2.89)	-0.152*** (-2.90)	-0.151*** (-2.89)	-0.153*** (-2.92)
ROA Missing	-0.120 (-1.37)	-0.110 (-1.23)	-0.133 (-1.54)	-0.117 (-1.33)	-0.070*** (-3.07)	-0.070*** (-3.07)	-0.070*** (-3.04)	-0.070*** (-3.06)	-0.123 (-1.06)	-0.118 (-1.01)	-0.125 (-1.07)	-0.124 (-1.07)	0.241*** (3.14)	0.242*** (3.14)	0.239*** (3.12)	0.239*** (3.11)
Leverage Ratio	0.199*** (3.12)	0.196*** (3.04)	0.202*** (3.17)	0.198*** (3.08)	-0.014 (-0.83)	-0.014 (-0.81)	-0.014 (-0.84)	-0.013 (-0.79)	0.047 (0.85)	0.046 (0.83)	0.047 (0.86)	0.047 (0.85)	0.069 (1.14)	0.070 (1.16)	0.070 (1.15)	0.070 (1.15)
Leverage Missing	0.193*** (3.02)	0.193*** (3.02)	0.192*** (2.98)	0.194*** (3.03)	-0.012 (-0.78)	-0.012 (-0.75)	-0.012 (-0.76)	-0.011 (-0.73)	0.057 (1.24)	0.054 (1.18)	0.055 (1.21)	0.053 (1.17)	0.049 (1.07)	0.049 (1.09)	0.048 (1.06)	0.048 (1.05)
Ln(Exposure TL)	-0.003* (-1.91)	-0.003* (-1.71)	-0.004** (-2.06)	-0.003* (-1.81)	-0.002*** (-2.79)	-0.002*** (-2.80)	-0.002*** (-2.77)	-0.002*** (-2.76)	-0.004** (-2.38)	-0.004** (-2.23)	-0.004** (-2.39)	-0.004** (-2.40)	0.010*** (5.99)	0.010*** (6.06)	0.010*** (5.99)	0.010*** (6.01)
Ln(Exposure RV)	0.032** (2.43)	0.032** (2.42)	0.031** (2.38)	0.031** (2.37)	0.001 (0.69)	0.001 (0.72)	0.001 (0.73)	0.001 (0.71)	-0.018*** (-3.21)	-0.019*** (-3.20)	-0.019*** (-3.23)	-0.019*** (-3.30)	-0.002 (-0.46)	-0.002 (-0.44)	-0.002 (-0.49)	-0.003 (-0.50)
Ln(Unused Exp RV)	-0.032** (-2.45)	-0.031** (-2.44)	-0.031** (-2.41)	-0.031** (-2.40)	-0.006*** (-3.46)	-0.006*** (-3.49)	-0.006*** (-3.49)	-0.006*** (-3.49)	0.017*** (2.89)	0.017*** (2.88)	0.017*** (2.90)	0.017*** (2.95)	0.022*** (3.94)	0.022*** (3.91)	0.022*** (3.95)	0.022*** (3.97)
Private	-0.213* (-1.88)	-0.211* (-1.87)	-0.214* (-1.89)	-0.211* (-1.87)	0.098*** (4.61)	0.098*** (4.63)	0.098*** (4.63)	0.098*** (4.65)	0.176*** (3.01)	0.177*** (3.01)	0.176*** (3.00)	0.177*** (3.00)	-0.545*** (-5.77)	-0.544*** (-5.76)	-0.545*** (-5.78)	-0.544*** (-5.76)
Public Debt Rating	-0.209* (-1.92)	-0.210* (-1.94)	-0.208* (-1.93)	-0.211* (-1.95)	-0.003 (-0.13)	-0.003 (-0.13)	-0.003 (-0.13)	-0.003 (-0.13)	-0.133** (-2.33)	-0.135** (-2.35)	-0.135** (-2.35)	-0.135** (-2.34)	-0.061 (-0.60)	-0.061 (-0.60)	-0.061 (-0.60)	-0.061 (-0.60)
Bank Controls																
Ln(Size)	0.445*** (4.77)	0.628*** (6.59)	0.329*** (3.53)	0.516*** (5.51)	0.037* (1.68)	0.035* (1.68)	0.046** (2.05)	0.037* (1.67)	0.119** (2.15)	0.210*** (3.81)	0.123** (2.14)	0.115** (2.08)	0.093 (1.52)	0.109* (1.88)	0.072 (1.17)	0.059 (0.98)
Capital Ratio	3.095 (1.17)	-1.673 (-0.60)	4.493* (1.70)	0.063 (0.02)	-0.552 (-1.05)	-0.553 (-1.13)	-0.743 (-1.39)	-0.628 (-1.23)	-0.118 (-0.06)	-3.048 (-1.64)	-1.080 (-0.53)	-1.520 (-0.78)	2.203 (1.06)	1.446 (0.74)	2.519 (1.23)	2.552 (1.26)
NPL Ratio	-71.920*** (-7.54)	-74.956*** (-7.67)	-67.537*** (-7.12)	-74.221*** (-7.63)	-2.136 (-1.09)	-2.091 (-1.07)	-2.408 (-1.22)	-2.180 (-1.11)	7.699 (1.30)	5.865 (0.99)	8.851 (1.50)	7.141 (1.20)	-19.918*** (-2.82)	-20.201*** (-2.84)	-19.205*** (-2.72)	-19.641*** (-2.78)
Liquidity Ratio	-1.740* (-1.81)	-0.575 (-0.56)	-2.240** (-2.32)	-0.944 (-0.93)	-0.417** (-2.01)	-0.415** (-2.01)	-0.368* (-1.78)	-0.397* (-1.93)	-1.341** (-2.24)	-0.689 (-1.15)	-1.192** (-1.97)	-0.979 (-1.61)	0.546 (0.88)	0.731 (0.89)	0.461 (0.57)	0.495 (0.61)
ROA	-21.648 (-1.39)	-75.437*** (-5.33)	4.754 (0.28)	-44.005*** (-3.04)	-5.742** (-2.00)	-5.665** (-1.97)	-8.112*** (-2.70)	-6.287** (-2.10)	-15.984 (-1.08)	-45.212*** (-3.97)	-22.678* (-1.69)	-19.530 (-1.51)	-38.702*** (-3.85)	-45.707*** (-4.31)	-34.129*** (-3.31)	-30.267*** (-2.88)
County Controls																
Unemployment Rate	0.001 (0.19)	0.003 (0.87)	-0.004 (-1.02)	-0.001 (-0.23)	0.006*** (4.30)	0.006*** (4.44)	0.006*** (4.44)	0.006*** (4.45)	0.013*** (3.40)	0.013*** (3.54)	0.011*** (2.91)	0.009** (2.47)	-0.011*** (-3.37)	-0.010*** (-3.24)	-0.011*** (-3.53)	-0.012*** (-3.71)
HPI	0.001*** (3.97)	0.001*** (3.94)	0.001*** (4.11)	0.001*** (3.81)	0.001*** (6.38)	0.001*** (6.42)	0.001*** (6.37)	0.001*** (6.42)	0.001*** (5.48)	0.001*** (5.39)	0.001*** (5.59)	0.001*** (5.23)	-0.002*** (-5.89)	-0.002*** (-5.89)	-0.002*** (-5.87)	-0.002*** (-5.94)
Change in HPI	0.941 (0.90)	2.001* (1.96)	0.496 (0.47)	1.260 (1.20)	0.742** (2.21)	0.745** (2.26)	0.787** (2.31)	0.770** (2.28)	-0.775 (-0.86)	-0.210 (-0.24)	-0.628 (-0.70)	-0.860 (-0.95)	-2.570** (-2.29)	-2.412** (-2.15)	-2.652** (-2.32)	-2.792** (-2.43)
Population Density	-0.000 (-1.08)	-0.000 (-1.01)	-0.000 (-1.10)	-0.000 (-1.05)	-0.000*** (-4.06)	-0.000*** (-4.18)	-0.000*** (-4.06)	-0.000*** (-4.08)	-0.000** (-2.54)	-0.000*** (-3.11)	-0.000** (-2.51)	-0.000*** (-2.60)	0.000*** (2.97)	0.000*** (3.09)	0.000*** (2.97)	0.000*** (2.95)
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.224	0.221	0.228	0.222	0.373	0.374	0.373	0.374	0.323	0.322	0.323	0.324	0.475	0.474	0.475	0.475

Panel B. Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock	0.003 (0.22)	0.008 (1.41)	0.001 (0.04)	0.006 (0.46)	0.003* (1.85)	0.002* (1.71)	0.004* (1.86)	0.006*** (2.63)	-0.007* (-1.91)	-0.004 (-1.41)	-0.009** (-2.09)	-0.010** (-2.16)	-0.011 (-1.40)	-0.009** (-2.08)	-0.012 (-1.27)	-0.021** (-2.03)
Rel Exist	-0.154*** (-2.89)	-0.160*** (-3.05)	-0.153*** (-2.87)	-0.156*** (-2.82)	-0.044*** (-4.43)	-0.041*** (-4.30)	-0.044*** (-4.44)	-0.047*** (-4.54)	-0.102*** (-6.65)	-0.107*** (-7.03)	-0.100*** (-6.53)	-0.100*** (-6.58)	0.113*** (4.21)	0.109*** (3.96)	0.114*** (4.22)	0.123*** (4.50)
COVID-19 Shock	0.064*** (5.04)	-0.006 (-1.44)	0.105*** (6.34)	0.010 (0.62)	-0.000 (-0.17)	-0.000 (-0.29)	-0.002 (-1.10)	-0.000 (-0.25)	0.016*** (3.62)	0.003** (2.43)	0.016*** (3.50)	0.017*** (4.09)	0.013* (1.91)	0.008*** (2.67)	0.021*** (2.69)	0.036*** (5.39)
Loan Controls																
Rating: LIG	0.022 (0.34)	0.019 (0.29)	0.022 (0.33)	0.020 (0.31)	0.035 (1.55)	0.036 (1.55)	0.035 (1.55)	0.036 (1.56)	0.023 (1.10)	0.022 (1.07)	0.023 (1.09)	0.024 (1.13)	-0.529*** (-3.39)	-0.529*** (-3.40)	-0.529*** (-3.39)	-0.527*** (-3.39)
Rating: HSG	0.489*** (4.12)	0.487*** (4.12)	0.489*** (4.13)	0.489*** (4.15)	0.135*** (4.73)	0.135*** (4.74)	0.134*** (4.73)	0.135*** (4.73)	-0.016 (-0.71)	-0.017 (-0.76)	-0.016 (-0.72)	-0.015 (-0.66)	-0.780*** (-4.62)	-0.780*** (-4.64)	-0.779*** (-4.62)	-0.776*** (-4.61)
Rating: LSG	0.957*** (5.81)	0.961*** (5.83)	0.952*** (5.82)	0.961*** (5.85)	0.202*** (6.39)	0.203*** (6.39)	0.202*** (6.39)	0.202*** (6.39)	-0.151*** (-4.88)	-0.152*** (-4.90)	-0.151*** (-4.88)	-0.150*** (-4.85)	-0.820*** (-4.71)	-0.820*** (-4.73)	-0.820*** (-4.71)	-0.816*** (-4.70)
Non-Syndicated	-0.049 (-0.37)	-0.053 (-0.40)	-0.052 (-0.40)	-0.052 (-0.39)	-0.060*** (-2.88)	-0.060*** (-2.88)	-0.060*** (-2.87)	-0.059*** (-2.86)	-0.809*** (-13.70)	-0.809*** (-13.78)	-0.810*** (-13.71)	-0.808*** (-13.75)	-2.482*** (-16.30)	-2.482*** (-16.32)	-2.482*** (-16.29)	-2.480*** (-16.32)
Floating Rate	-0.905*** (-3.01)	-0.908*** (-3.01)	-0.902*** (-3.00)	-0.906*** (-3.01)	0.213*** (7.21)	0.212*** (7.21)	0.213*** (7.21)	0.213*** (7.23)	0.251*** (3.43)	0.251*** (3.43)	0.251*** (3.42)	0.251*** (3.42)	0.725*** (10.10)	0.725*** (10.09)	0.725*** (10.12)	0.725*** (10.15)
Mixed Rate	-0.632** (-2.01)	-0.606* (-1.92)	-0.632** (-2.02)	-0.605* (-1.91)	0.138*** (4.71)	0.138*** (4.70)	0.138*** (4.72)	0.138*** (4.73)	0.314*** (4.21)	0.315*** (4.24)	0.314*** (4.21)	0.314*** (4.21)	0.591*** (9.09)	0.592*** (9.12)	0.590*** (9.08)	0.589*** (9.11)
Purpose: Acq/Capex	0.343** (2.45)	0.343** (2.43)	0.345** (2.46)	0.342** (2.43)	-0.146*** (-4.58)	-0.146*** (-4.59)	-0.146*** (-4.59)	-0.145*** (-4.57)	0.282*** (4.78)	0.281*** (4.74)	0.282*** (4.77)	0.282*** (4.77)	0.092 (0.96)	0.091 (0.96)	0.093 (0.97)	0.092 (0.96)
Purpose: General	0.735*** (8.25)	0.736*** (8.16)	0.734*** (8.24)	0.736*** (8.15)	-0.208*** (-10.29)	-0.208*** (-10.30)	-0.208*** (-10.29)	-0.208*** (-10.30)	0.029 (0.91)	0.029 (0.93)	0.029 (0.91)	0.029 (0.91)	0.084 (1.43)	0.084 (1.43)	0.084 (1.43)	0.083 (1.41)
Purpose: CRE	0.512*** (3.75)	0.510*** (3.72)	0.519*** (3.80)	0.510*** (3.73)	-0.296*** (-7.07)	-0.296*** (-7.07)	-0.296*** (-7.07)	-0.296*** (-7.06)	0.197*** (4.08)	0.196*** (4.06)	0.198*** (4.09)	0.198*** (4.09)	0.134 (1.34)	0.132 (1.32)	0.135 (1.35)	0.136 (1.37)
Multi Facility has RV	-0.005 (-0.14)	-0.088** (-2.38)	0.022 (0.54)	-0.073** (-2.05)	0.010 (0.93)	0.009 (0.90)	0.008 (0.70)	0.011 (1.00)	0.268*** (8.89)	0.251*** (9.32)	0.265*** (8.98)	0.264*** (9.25)	-0.202*** (-4.70)	-0.208*** (-5.67)	-0.193*** (-4.48)	-0.182*** (-4.43)
Multi Facility has TL	0.063 (0.83)	0.057 (0.75)	0.063 (0.83)	0.056 (0.74)	0.050*** (4.02)	0.050*** (3.98)	0.050*** (3.96)	0.050*** (4.02)	0.264*** (9.40)	0.264*** (9.23)	0.264*** (9.38)	0.263*** (9.32)	0.012 (0.31)	0.011 (0.30)	0.013 (0.36)	0.014 (0.37)
Firm Controls																
Size: [\$25mil, \$250mil)	-0.333*** (-5.49)	-0.331*** (-5.46)	-0.327*** (-5.32)	-0.329*** (-5.42)	-0.067*** (-6.76)	-0.067*** (-6.75)	-0.067*** (-6.76)	-0.067*** (-6.79)	0.239*** (12.09)	0.240*** (12.17)	0.240*** (12.16)	0.240*** (12.19)	0.900*** (22.29)	0.901*** (22.42)	0.901*** (22.30)	0.902*** (22.33)
Size: ≥\$250mil	-0.159 (-1.42)	-0.159 (-1.42)	-0.153 (-1.37)	-0.155 (-1.40)	-0.310*** (-14.31)	-0.310*** (-14.30)	-0.310*** (-14.33)	-0.310*** (-14.34)	0.384*** (10.94)	0.384*** (10.94)	0.385*** (10.96)	0.385*** (10.98)	1.493*** (20.94)	1.493*** (21.07)	1.493*** (20.90)	1.496*** (20.99)
Size: Missing	-0.356** (-2.04)	-0.378** (-2.21)	-0.347** (-1.97)	-0.368** (-2.13)	-0.164*** (-6.44)	-0.164*** (-6.45)	-0.164*** (-6.45)	-0.164*** (-6.45)	0.169*** (3.04)	0.168*** (3.02)	0.169*** (3.04)	0.171*** (3.08)	0.847*** (9.88)	0.846*** (9.90)	0.848*** (9.89)	0.854*** (10.01)
Past Delinquency	-0.074 (-0.81)	-0.076 (-0.83)	-0.075 (-0.82)	-0.076 (-0.83)	-0.023 (-1.26)	-0.023 (-1.27)	-0.022 (-1.25)	-0.023 (-1.27)	-0.046 (-1.36)	-0.045 (-1.32)	-0.046 (-1.37)	-0.047 (-1.39)	0.285*** (3.30)	0.286*** (3.32)	0.284*** (3.29)	0.281*** (3.27)
ROA	-0.153 (-1.26)	-0.144 (-1.19)	-0.171 (-1.39)	-0.148 (-1.23)	-0.039 (-1.33)	-0.039 (-1.33)	-0.039 (-1.33)	-0.040 (-1.34)	0.105*** (3.04)	0.105*** (3.08)	0.104*** (3.03)	0.104*** (3.03)	-0.114** (-2.27)	-0.115** (-2.27)	-0.116** (-2.31)	-0.117** (-2.32)
ROA Missing	-0.252* (-1.84)	-0.227* (-1.69)	-0.259* (-1.88)	-0.233* (-1.72)	-0.021 (-0.84)	-0.021 (-0.83)	-0.021 (-0.83)	-0.021 (-0.84)	0.109** (2.02)	0.110** (2.06)	0.110** (2.03)	0.109** (2.02)	0.090 (1.11)	0.090 (1.11)	0.089 (1.10)	0.087 (1.08)
Leverage Ratio	0.416*** (3.17)	0.406*** (3.12)	0.418*** (3.17)	0.408*** (3.13)	-0.003 (-0.15)	-0.003 (-0.15)	-0.003 (-0.16)	-0.003 (-0.15)	-0.076* (-1.81)	-0.077* (-1.84)	-0.076* (-1.82)	-0.077* (-1.83)	0.084 (1.00)	0.084 (1.01)	0.084 (1.01)	0.084 (1.00)
Leverage Missing	0.530*** (3.94)	0.529*** (3.98)	0.528*** (3.92)	0.530*** (3.97)	-0.018 (-1.24)	-0.018 (-1.23)	-0.018 (-1.24)	-0.018 (-1.23)	-0.028 (-1.26)	-0.028 (-1.23)	-0.028 (-1.26)	-0.028 (-1.26)	-0.154*** (-4.25)	-0.154*** (-4.23)	-0.155*** (-4.26)	-0.155*** (-4.25)
Ln(Exposure TL)	0.006 (0.83)	0.007 (0.93)	0.005 (0.73)	0.007 (0.91)	-0.001 (-1.61)	-0.001 (-1.59)	-0.001 (-1.59)	-0.001 (-1.61)	-0.001 (-0.88)	-0.001 (-0.82)	-0.002 (-0.89)	-0.001 (-0.83)	0.010*** (3.71)	0.010*** (3.74)	0.010*** (3.66)	0.010*** (3.71)
Ln(Exposure RV)	0.007 (1.15)	0.007 (1.11)	0.007 (1.11)	0.007 (1.13)	-0.005*** (-2.68)	-0.005*** (-2.70)	-0.005*** (-2.67)	-0.005*** (-2.65)	-0.007*** (-2.92)	-0.007*** (-2.92)	-0.007*** (-2.94)	-0.007*** (-2.92)	0.006 (1.45)	0.006 (1.45)	0.006 (1.44)	0.006 (1.46)
Ln(Unused Exp RV)	0.004 (0.65)	0.004 (0.74)	0.004 (0.67)	0.004 (0.72)	0.002 (1.19)	0.002 (1.21)	0.002 (1.20)	0.002 (1.15)	0.006*** (2.63)	0.006*** (2.64)	0.006*** (2.65)	0.006*** (2.64)	0.005 (1.11)	0.005 (1.12)	0.005 (1.12)	0.005 (1.13)
Private	1.001*** (5.22)	0.995*** (5.15)	1.001*** (5.26)	0.998*** (5.19)	0.116*** (5.07)	0.116*** (5.07)	0.116*** (5.07)	0.115*** (5.06)	0.126*** (3.08)	0.125*** (3.04)	0.126*** (3.08)	0.126*** (3.08)	-0.305*** (-3.16)	-0.305*** (-3.16)	-0.304*** (-3.15)	-0.302*** (-3.14)

Public Debt Rating	0.244 (1.12)	0.267 (1.20)	0.225 (1.06)	0.264 (1.19)	-0.038 (-1.26)	-0.037 (-1.23)	-0.038 (-1.26)	-0.038 (-1.29)	0.084* (1.71)	0.084* (1.70)	0.085* (1.71)	0.085* (1.72)	0.248 (1.55)	0.248 (1.55)	0.248 (1.55)	0.249 (1.56)
Bank Controls																
Ln(Size)	-0.229 (-1.35)	0.020 (0.11)	-0.394** (-2.34)	-0.029 (-0.16)	0.061** (2.24)	0.067** (2.51)	0.067** (2.44)	0.053* (1.96)	0.162*** (3.36)	0.201*** (4.10)	0.162*** (3.37)	0.165*** (3.42)	0.091 (1.30)	0.107* (1.67)	0.057 (0.78)	0.029 (0.41)
Capital Ratio	-6.848 (-1.01)	-16.993** (-2.31)	-2.999 (-0.49)	-15.718* (-1.96)	0.597 (0.78)	0.540 (0.76)	0.370 (0.49)	0.564 (0.77)	0.022 (0.01)	-1.563 (-0.95)	-0.221 (-0.13)	-0.740 (-0.45)	7.668*** (3.11)	6.940*** (2.68)	8.441*** (3.46)	8.666*** (3.41)
NPL Ratio	-53.261*** (-2.92)	-53.116*** (-2.79)	-49.590*** (-2.76)	-53.211*** (-2.79)	-6.922*** (-3.17)	-7.002*** (-3.17)	-6.988*** (-3.20)	-7.028*** (-3.20)	1.196 (0.26)	0.856 (0.19)	1.656 (0.36)	1.542 (0.33)	-11.657 (-1.25)	-11.806 (-1.26)	-10.841 (-1.17)	-10.401 (-1.12)
Liquidity Ratio	0.533 (0.32)	1.374 (0.65)	0.268 (0.17)	1.369 (0.66)	-0.278 (-1.10)	-0.273 (-1.07)	-0.248 (-0.98)	-0.250 (-0.98)	-1.807*** (-3.18)	-1.594** (-2.55)	-1.781*** (-3.07)	-1.699*** (-2.90)	1.831* (1.77)	1.950* (1.87)	1.740 (1.63)	1.739 (1.59)
ROA	63.022** (2.10)	-33.138 (-1.18)	97.774*** (3.14)	-13.906 (-0.43)	0.756 (0.18)	-0.026 (-0.01)	-1.508 (-0.37)	1.712 (0.43)	7.205 (0.79)	-7.008 (-0.80)	4.813 (0.53)	4.676 (0.51)	-28.664** (-2.34)	-33.539*** (-2.67)	-20.582* (-1.66)	-8.704 (-0.69)
County Controls																
Unemployment Rate	-0.009 (-1.51)	-0.005 (-0.94)	-0.016** (-2.53)	-0.008 (-1.46)	0.004*** (3.24)	0.004*** (3.17)	0.004*** (3.35)	0.004*** (3.19)	-0.005** (-2.19)	-0.004** (-2.14)	-0.005** (-2.53)	-0.006*** (-2.76)	-0.014** (-2.20)	-0.014** (-2.22)	-0.015** (-2.45)	-0.017*** (-2.86)
HPI	0.001*** (4.05)	0.001*** (4.00)	0.001*** (4.25)	0.001*** (4.01)	0.001*** (7.35)	0.001*** (7.38)	0.001*** (7.35)	0.001*** (7.39)	-0.000* (-1.78)	-0.000* (-1.78)	-0.000* (-1.74)	-0.000* (-1.89)	-0.001*** (-2.81)	-0.001*** (-2.82)	-0.001*** (-2.81)	-0.001*** (-2.90)
Change in HPI	0.526 (0.34)	2.155 (1.47)	-0.023 (-0.01)	1.729 (1.19)	0.789** (2.45)	0.807** (2.52)	0.835*** (2.60)	0.766** (2.39)	0.877 (1.28)	1.161* (1.76)	0.927 (1.36)	0.856 (1.25)	0.133 (0.12)	0.250 (0.24)	-0.020 (-0.02)	-0.396 (-0.38)
Population Density	-0.000*** (-2.92)	-0.000*** (-2.79)	-0.000*** (-2.98)	-0.000*** (-2.92)	-0.000 (-1.59)	-0.000* (-1.65)	-0.000 (-1.59)	-0.000 (-1.60)	0.000*** (4.84)	0.000*** (4.78)	0.000*** (4.84)	0.000*** (4.80)	0.000*** (4.71)	0.000*** (4.55)	0.000*** (4.70)	0.000*** (4.68)
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.261	0.258	0.264	0.258	0.440	0.440	0.440	0.441	0.286	0.285	0.286	0.286	0.549	0.549	0.549	0.550

Table 3. The Dynamic Effects of Loan Terms during COVID-19

This table reports OLS regression estimates to analyze how COVID-19 affects the terms on newly issued loans to relationship borrowers across different months after the COVID-19 shock hit the U.S. Results are presented separately for term loans (Panel A) and revolvers (Panel B). In each panel, four loan contract terms are regressed on COVID-19 shock dummy variables for each of the months during the COVID-19 shock (March, April, May, and June 2020), a relationship existence dummy, the interaction of the relationship existence dummy with the COVID-19 shock dummy variables, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: March 2020, April 2020, May 2020, and June 2020, which are binaries for each of the months during the COVID-19 shock in our sample period. *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank \times industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Panel A. Term Loans				Panel B. Revolvers			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
	Interest Rate Spread	Collateral	Ln (Maturity)	Ln (Loan Amount)	Interest Rate Spread	Collateral	Ln (Maturity)	Ln (Loan Amount)
Rel Exist \times COVID-19 Shock: March 2020	-0.098 (-1.03)	-0.007 (-0.34)	-0.085 (-1.10)	0.018 (0.28)	-0.190 (-1.50)	-0.011 (-0.49)	-0.111** (-2.43)	-0.033 (-0.48)
Rel Exist \times COVID-19 Shock: April 2020	0.266*** (3.41)	0.028 (1.36)	0.050 (0.97)	0.037 (0.53)	0.052 (0.35)	0.007 (0.40)	-0.043 (-1.15)	0.126** (1.98)
Rel Exist \times COVID-19 Shock: May 2020	0.193** (2.06)	0.038* (1.82)	-0.057 (-0.72)	-0.143* (-1.82)	-0.006 (-0.05)	0.065** (1.99)	-0.020 (-0.38)	-0.326* (-1.72)
Rel Exist \times COVID-19 Shock: June 2020	0.158 (1.52)	-0.055** (-2.17)	-0.384*** (-4.65)	-0.119* (-1.73)	-0.063 (-0.42)	0.033 (1.29)	-0.103 (-1.51)	-0.167** (-2.33)
Rel Exist	0.008 (0.26)	-0.042*** (-4.61)	-0.185*** (-6.74)	-0.035 (-1.48)	-0.143*** (-2.77)	-0.044*** (-4.44)	-0.098*** (-6.30)	0.115*** (4.33)
COVID-19 Shock: March 2020	0.664*** (8.98)	-0.031** (-2.30)	0.017 (0.33)	0.061 (1.32)	0.774*** (6.73)	-0.016 (-1.13)	0.023 (0.83)	0.199*** (3.64)
COVID-19 Shock: April 2020	0.209*** (2.75)	-0.004 (-0.19)	0.363*** (4.81)	0.115* (1.71)	0.572*** (4.27)	0.004 (0.18)	0.171*** (4.06)	0.059 (0.81)
COVID-19 Shock: May 2020	0.317*** (2.93)	-0.065** (-2.08)	0.223** (2.34)	0.303*** (3.24)	0.819*** (4.32)	-0.069** (-2.46)	0.169*** (2.94)	0.224 (1.59)
COVID-19 Shock: June 2020	0.379*** (4.44)	0.051** (2.10)	0.428*** (5.50)	-0.110* (-1.69)	0.739*** (4.60)	0.040* (1.72)	0.094* (1.96)	-0.024 (-0.32)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	27,152	27,150	27,152	13,794	26,168	26,165	26,168
Adjusted R-squared	0.232	0.374	0.325	0.476	0.268	0.441	0.287	0.550

Table 4. Loan Terms during COVID-19: Falsification Test

This table reports regression estimates to assess how COVID-19 affects the terms on newly issued loans extended to relationship borrowers using a falsification test in which we assume the COVID-19 shock occurred one year earlier than its actual timing. Results are presented separately for term loans (Panel A) and revolvers (Panel B). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main fake COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) Values of COVID-19 shock variables are assigned to same month and day but one year earlier than the actual shocks occurred. *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The fake sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2017, and June 30, 2019. All variables are defined in Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × FAKE COVID-19 Shock	0.006 (0.89)	-0.001 (-0.19)	0.012 (1.35)	0.004 (0.62)	-0.003** (-2.13)	0.001 (0.42)	-0.003 (-1.40)	0.001 (0.59)	0.003 (0.76)	-0.001 (-0.36)	0.003 (0.63)	0.002 (0.36)	0.002 (0.36)	0.002 (0.47)	-0.003 (-0.55)	-0.008 (-1.24)
Rel Exist FAKE COVID-19 Shock	0.016 (0.52) -0.020*** (-3.82)	0.023 (0.76) -0.002 (-0.56)	0.011 (0.35) -0.029*** (-4.81)	0.019 (0.61) -0.019*** (-3.67)	-0.028*** (-2.86) 0.001 (0.85)	-0.032*** (-3.30) 0.000 (0.81)	-0.029*** (-2.96) 0.000 (0.12)	-0.033*** (-3.32) 0.000 (0.15)	-0.191*** (-7.08) -0.003 (-1.09)	-0.186*** (-6.97) -0.001 (-0.54)	-0.191*** (-7.08) -0.004 (-1.22)	-0.189*** (-7.15) -0.003 (-0.67)	-0.047* (-1.83) -0.003 (-1.09)	-0.047* (-1.88) -0.004** (-2.09)	-0.042 (-1.61) -0.001 (-0.23)	-0.038 (-1.49) -0.004 (-1.11)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	22,779	22,779	22,779	22,779	25,902	25,902	25,902	25,902	25,890	25,890	25,890	25,890	25,902	25,902	25,902	25,902
Adjusted R-squared	0.204	0.202	0.204	0.203	0.376	0.375	0.376	0.375	0.292	0.292	0.292	0.292	0.450	0.450	0.450	0.450

Panel B. Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × FAKE COVID-19 Shock	0.011 (1.21)	0.008 (1.31)	0.012 (0.99)	0.019* (1.72)	0.001 (0.80)	0.002* (1.91)	0.003* (1.78)	0.006*** (2.99)	0.001 (0.38)	0.000 (0.15)	0.002 (0.43)	0.001 (0.24)	-0.002 (-0.33)	-0.002 (-0.61)	-0.002 (-0.23)	-0.007 (-0.82)
Rel Exist FAKE COVID-19 Shock	-0.128*** (-2.82) -0.017** (-2.43)	-0.123*** (-2.82) -0.012*** (-2.78)	-0.128*** (-2.79) -0.026*** (-2.60)	-0.132*** (-2.90) -0.024*** (-2.85)	-0.050*** (-5.20) -0.002** (-2.44)	-0.051*** (-5.18) -0.001 (-1.20)	-0.052*** (-5.41) -0.004*** (-2.80)	-0.054*** (-5.42) -0.003** (-2.14)	-0.108*** (-6.40) -0.004* (-1.77)	-0.107*** (-6.50) -0.001 (-0.64)	-0.109*** (-6.41) -0.006** (-2.15)	-0.108*** (-6.56) -0.004 (-1.55)	0.121*** (4.75) -0.003 (-0.76)	0.121*** (4.65) -0.001 (-0.28)	0.120*** (4.69) -0.003 (-0.63)	0.124*** (4.70) -0.003 (-0.67)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	12,466	12,466	12,466	12,466	23,450	23,450	23,450	23,450	23,430	23,430	23,430	23,430	23,450	23,450	23,450	23,450
Adjusted R-squared	0.237	0.236	0.237	0.237	0.422	0.422	0.422	0.422	0.306	0.306	0.306	0.306	0.519	0.519	0.519	0.519

Table 5. Loan Terms during COVID-19: Alternative Relationship Proxies

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers using alternative relationship proxies. Results are presented separately for relationship intensity (Panels A1-A2), relationship length (Panel B1-B2), and main relationship bank (Panel C1-C2). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Intens* is the ratio of the dollar value of loans the firm obtained from the lending bank to the total dollar value of loans provided to the firm over the past three years. *Rel Length* is the length in years since the first loan the firm obtained from the lender. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A1. Relationship Intensity - Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Intens × COVID-19 Shock	0.020** (2.56)	0.010* (1.71)	0.020** (2.16)	0.010 (1.10)	0.001 (0.56)	0.002 (1.62)	0.002 (1.05)	0.008*** (3.04)	-0.012* (-1.96)	-0.006 (-1.41)	-0.012* (-1.70)	-0.013* (-1.76)	-0.010 (-1.63)	-0.001 (-0.36)	-0.012 (-1.64)	-0.012 (-1.61)
Rel Intens	0.085*** (2.70)	0.099*** (3.18)	0.085*** (2.67)	0.100*** (3.12)	-0.046*** (-5.16)	-0.047*** (-5.38)	-0.047*** (-5.28)	-0.052*** (-5.58)	-0.182*** (-7.18)	-0.189*** (-7.46)	-0.182*** (-7.12)	-0.182*** (-7.22)	-0.006 (-0.25)	-0.015 (-0.63)	-0.005 (-0.19)	-0.005 (-0.21)
COVID-19 Shock	0.036*** (5.13)	-0.004 (-1.27)	0.065*** (7.43)	0.026*** (3.47)	-0.001 (-0.70)	-0.002* (-1.75)	-0.004* (-1.93)	-0.004** (-2.04)	0.036*** (5.13)	0.013*** (4.78)	0.035*** (4.35)	0.040*** (6.13)	0.009 (1.44)	0.000 (0.02)	0.014** (2.06)	0.019*** (2.61)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.225	0.222	0.228	0.223	0.373	0.374	0.374	0.374	0.322	0.321	0.322	0.323	0.474	0.474	0.475	0.475

Panel A2. Relationship Intensity - Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Intens × COVID-19 Shock	-0.000 (-0.04)	0.005 (1.00)	-0.003 (-0.23)	-0.003 (-0.23)	0.003 (1.58)	0.002** (2.27)	0.003 (1.57)	0.006** (2.47)	-0.001 (-0.39)	-0.000 (-0.11)	-0.001 (-0.33)	-0.002 (-0.38)	-0.015** (-2.56)	-0.012*** (-3.21)	-0.015** (-2.33)	-0.024*** (-3.70)
Rel Intens	-0.163*** (-2.93)	-0.172*** (-3.14)	-0.161*** (-2.89)	-0.162*** (-2.81)	-0.041*** (-3.87)	-0.040*** (-3.90)	-0.042*** (-3.86)	-0.044*** (-3.96)	-0.110*** (-6.98)	-0.111*** (-6.93)	-0.110*** (-6.97)	-0.110*** (-6.98)	0.104*** (3.68)	0.099*** (3.57)	0.103*** (3.65)	0.112*** (3.93)
COVID-19 Shock	0.065*** (5.25)	-0.005 (-1.23)	0.107*** (6.61)	0.013 (0.81)	0.000 (0.04)	-0.000 (-0.41)	-0.002 (-0.76)	0.000 (0.04)	0.013*** (2.88)	0.002 (1.65)	0.013*** (2.67)	0.013*** (3.15)	0.014 (1.56)	0.008*** (2.97)	0.022** (2.10)	0.036*** (4.11)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.261	0.258	0.265	0.258	0.440	0.440	0.440	0.440	0.286	0.285	0.286	0.286	0.549	0.549	0.549	0.550

Panel B1. Relationship Length - Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Length × COVID-19 Shock	0.008** (2.01)	0.008*** (2.83)	0.007 (1.53)	0.005 (1.17)	0.001 (0.75)	0.001 (1.18)	0.000 (0.45)	0.002* (1.88)	-0.011*** (-3.64)	-0.008*** (-3.09)	-0.012*** (-3.51)	-0.013*** (-3.60)	0.006* (1.67)	0.007*** (2.59)	0.009** (2.25)	0.010** (2.41)
Rel Length	-0.009 (-0.44)	-0.005 (-0.24)	-0.009 (-0.46)	-0.003 (-0.13)	-0.011** (-2.29)	-0.011** (-2.33)	-0.011** (-2.19)	-0.012** (-2.54)	-0.095*** (-5.92)	-0.098*** (-6.29)	-0.094*** (-5.86)	-0.094*** (-5.90)	-0.008 (-0.54)	-0.008 (-0.53)	-0.011 (-0.78)	-0.011 (-0.75)
COVID-19 Shock	0.038*** (4.89)	-0.006 (-1.50)	0.067*** (7.18)	0.025*** (3.23)	-0.001 (-0.78)	-0.002 (-1.38)	-0.004* (-1.72)	-0.003 (-1.50)	0.041*** (5.43)	0.015*** (6.78)	0.041*** (4.78)	0.046*** (6.62)	-0.000 (-0.01)	-0.004 (-1.02)	0.003 (0.38)	0.007 (0.94)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.224	0.221	0.227	0.222	0.372	0.372	0.372	0.372	0.322	0.321	0.322	0.323	0.474	0.475	0.475	0.475

Panel B2. Relationship Length – Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Length × COVID-19 Shock	0.006 (1.02)	0.001 (0.37)	0.006 (0.89)	-0.002 (-0.29)	0.002* (1.95)	0.001 (1.06)	0.002* (1.86)	0.003** (2.20)	-0.007*** (-3.01)	-0.004*** (-3.15)	-0.008*** (-3.38)	-0.009*** (-3.31)	-0.002 (-0.35)	-0.000 (-0.03)	-0.002 (-0.32)	-0.004 (-0.55)
Rel Length	-0.043 (-1.62)	-0.035 (-1.25)	-0.044 (-1.61)	-0.031 (-1.11)	-0.038*** (-6.11)	-0.036*** (-6.06)	-0.038*** (-6.10)	-0.039*** (-6.02)	-0.044*** (-3.93)	-0.048*** (-4.34)	-0.042*** (-3.77)	-0.042*** (-3.84)	0.087*** (4.65)	0.085*** (4.51)	0.087*** (4.51)	0.089*** (4.70)
COVID-19 Shock	0.060*** (5.23)	-0.004 (-0.98)	0.100*** (6.64)	0.014 (0.88)	-0.000 (-0.19)	-0.000 (-0.05)	-0.002 (-1.05)	-0.000 (-0.09)	0.018*** (4.24)	0.005*** (3.42)	0.020*** (4.31)	0.020*** (4.81)	0.008 (1.30)	0.004 (1.48)	0.017** (2.10)	0.030*** (4.18)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.260	0.257	0.264	0.257	0.442	0.442	0.442	0.442	0.286	0.285	0.286	0.286	0.550	0.550	0.550	0.550

Panel C1. Main Bank Relationship - Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index
Rel Main bank × COVID-19 Shock	0.018** (2.33)	0.009 (1.62)	0.018** (2.02)	0.008 (0.90)	0.002 (0.88)	0.002 (1.52)	0.003 (1.26)	0.008*** (3.41)	-0.008 (-1.56)	-0.006 (-1.40)	-0.009 (-1.44)	-0.010 (-1.44)	-0.011* (-1.95)	-0.001 (-0.20)	-0.013* (-1.88)	-0.013* (-1.81)
Rel Main bank COVID-19 Shock	0.084*** (2.77)	0.094*** (3.15)	0.084*** (2.74)	0.097*** (3.15)	-0.042*** (-4.56)	-0.043*** (-4.70)	-0.043*** (-4.64)	-0.048*** (-4.96)	-0.181*** (-7.76)	-0.185*** (-8.09)	-0.181*** (-7.70)	-0.180*** (-7.76)	0.013 (0.57)	0.002 (0.08)	0.014 (0.61)	0.014 (0.58)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.225	0.222	0.228	0.223	0.373	0.373	0.374	0.374	0.322	0.321	0.322	0.323	0.474	0.474	0.475	0.475

Panel C2. Main Bank Relationship - Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index	US New Cases/ 100K Pop	State New Cases/ 100K Pop	US Restrict Index	State Restrict Index
Rel Main bank × COVID-19 Shock	-0.001 (-0.06)	0.004 (0.79)	-0.004 (-0.25)	-0.004 (-0.35)	0.002 (1.06)	0.002** (2.17)	0.002 (1.05)	0.005** (1.98)	-0.002 (-0.59)	-0.001 (-0.43)	-0.002 (-0.47)	-0.002 (-0.52)	-0.013* (-1.83)	-0.013*** (-3.28)	-0.013 (-1.53)	-0.020** (-2.43)
Rel Main bank COVID-19 Shock	-0.166*** (-2.99)	-0.174*** (-3.22)	-0.163*** (-2.94)	-0.164*** (-2.87)	-0.041*** (-4.01)	-0.041*** (-4.10)	-0.041*** (-3.99)	-0.044*** (-4.09)	-0.108*** (-7.00)	-0.110*** (-6.97)	-0.109*** (-7.03)	-0.109*** (-7.02)	0.116*** (4.34)	0.114*** (4.29)	0.115*** (4.29)	0.122*** (4.55)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.261	0.258	0.265	0.258	0.440	0.440	0.440	0.440	0.286	0.285	0.286	0.286	0.549	0.549	0.549	0.550

Table 6. Loan Terms during COVID-19: Split by TL and RV Relationships

This table reports OLS regression estimates to assess how COVID-19 affects terms on newly issued loans to relationship borrowers, where the relationship depends on the type of loan received in the past (term loan/revolver). Results are presented separately for term loans (Panel A) and revolvers (Panel B). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, two relationship existence dummies, interaction terms, explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; interaction terms, explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) The relationship existence dummies include *TL Rel Exist*, a is a dummy = 1 if the borrower has had a term loan relationship with the lender over the past three years, and *RV Rel Exist*, a is a dummy = 1 if the borrower has had a revolver relationship with the lender over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Term Loans Sample

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
TL Rel Exist × COVID-19 Shock	-0.018 (-1.24)	0.000 (0.01)	-0.020 (-1.30)	-0.018 (-1.21)	0.000 (0.09)	0.000 (0.08)	-0.001 (-0.19)	-0.002 (-0.58)	-0.007 (-0.76)	-0.008 (-0.91)	-0.016* (-1.66)	-0.014 (-1.38)	0.012 (1.13)	0.017** (1.99)	0.011 (1.00)	0.011 (1.00)
RV Rel Exist × COVID-19 Shock	0.029*** (3.57)	0.015** (2.39)	0.030*** (3.14)	0.024*** (2.77)	0.002 (1.21)	0.004*** (3.12)	0.002 (1.05)	0.009*** (3.76)	-0.010** (-1.99)	-0.005 (-1.31)	-0.010* (-1.77)	-0.011* (-1.67)	-0.016*** (-2.62)	-0.004 (-1.15)	-0.015** (-2.15)	-0.018** (-2.35)
COVID-19 Shock	0.035*** (4.86)	-0.005 (-1.63)	0.064*** (7.22)	0.023*** (3.10)	-0.002 (-0.99)	-0.002** (-2.32)	-0.004* (-1.95)	-0.004** (-2.13)	0.036*** (5.10)	0.012*** (5.05)	0.035*** (4.43)	0.040*** (6.16)	0.010* (1.72)	0.000 (0.04)	0.014** (2.14)	0.019*** (2.77)
TL Rel Exist	0.006 (0.14)	-0.016 (-0.38)	0.008 (0.18)	0.002 (0.05)	-0.002 (-0.14)	-0.002 (-0.13)	-0.001 (-0.07)	0.001 (0.06)	-0.053 (-0.99)	-0.053 (-1.02)	-0.044 (-0.82)	-0.048 (-0.89)	0.016 (0.37)	0.014 (0.34)	0.017 (0.39)	0.018 (0.42)
RV Rel Exist	-0.013 (-0.39)	0.004 (0.11)	-0.013 (-0.38)	-0.003 (-0.09)	-0.048*** (-4.20)	-0.050*** (-4.39)	-0.048*** (-4.22)	-0.054*** (-4.55)	-0.218*** (-7.12)	-0.225*** (-7.21)	-0.219*** (-7.01)	-0.218*** (-7.08)	-0.072** (-2.46)	-0.085*** (-2.93)	-0.074** (-2.50)	-0.073** (-2.38)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.224	0.221	0.228	0.222	0.373	0.374	0.373	0.374	0.323	0.322	0.323	0.324	0.475	0.475	0.475	0.475

Panel B. Revolvers Sample

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
TL Rel Exist × COVID-19 Shock	0.001 (0.12)	0.004 (0.70)	-0.001 (-0.04)	0.008 (0.69)	0.003 (1.53)	0.002* (1.69)	0.004* (1.68)	0.006* (1.96)	-0.000 (-0.11)	0.000 (0.08)	-0.002 (-0.57)	-0.004 (-0.89)	-0.025*** (-2.68)	-0.016*** (-3.47)	-0.029** (-2.52)	-0.037*** (-2.98)
RV Rel Exist × COVID-19 Shock	0.018 (0.88)	0.012 (0.86)	0.020 (0.86)	0.012 (0.48)	0.004 (1.54)	0.003* (1.73)	0.004 (1.18)	0.010*** (2.78)	-0.028*** (-4.23)	-0.020*** (-3.71)	-0.029*** (-4.31)	-0.033*** (-4.10)	0.011 (1.20)	0.001 (0.09)	0.016 (1.41)	0.006 (0.46)
COVID-19 Shock	0.062*** (5.25)	-0.005 (-1.28)	0.103*** (6.48)	0.009 (0.56)	-0.001 (-0.29)	-0.000 (-0.51)	-0.003 (-1.20)	-0.001 (-0.27)	0.016*** (3.60)	0.004*** (2.66)	0.017*** (3.49)	0.018*** (4.14)	0.015** (2.19)	0.008*** (3.05)	0.024*** (2.96)	0.038*** (5.50)
TL Rel Exist	-0.097* (-1.93)	-0.102* (-1.96)	-0.097** (-1.97)	-0.106** (-1.97)	-0.039*** (-3.88)	-0.037*** (-3.85)	-0.040*** (-3.92)	-0.041*** (-3.96)	-0.129*** (-7.66)	-0.129*** (-7.36)	-0.126*** (-7.49)	-0.125*** (-7.48)	0.065** (2.13)	0.048 (1.55)	0.069** (2.26)	0.073** (2.36)
RV Rel Exist	-0.319*** (-4.14)	-0.311*** (-4.29)	-0.320*** (-4.13)	-0.310*** (-4.15)	-0.050*** (-3.04)	-0.049*** (-2.92)	-0.050*** (-2.96)	-0.055*** (-3.28)	0.020 (0.66)	0.005 (0.17)	0.019 (0.64)	0.017 (0.58)	0.072 (1.29)	0.089* (1.67)	0.067 (1.16)	0.080 (1.41)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.262	0.259	0.266	0.259	0.441	0.441	0.441	0.441	0.288	0.287	0.287	0.288	0.549	0.549	0.549	0.550

Table 7. Loan Terms during COVID-19: Alternative COVID-19 Shocks

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers using 10 alternative measures for the COVID-19 shock. Results are presented separately for term loans (Panels A1-D1) and revolvers (Panel A2-D2). In each panel, four loan contract terms are regressed on one of our alternative COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, dummy = 1 if the loan is collateralized; *Ln(Maturity)*, natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, natural log of one plus loan amount, the size of the loan in \$ million. The 10 alternative COVID-19 variables are: *US Health Crisis* (≥ 100 cases) (dummy = 1 from the date when the 100th COVID-19 case was identified in the U.S.); *State Health Crisis* (≥ 100 cases) (dummy = 1 from the date when the 100th COVID-19 case was identified in the state); *US New Deaths/100K Pop* (U.S. newly confirmed COVID-19 deaths per 100,000 people, seven-day moving average); *State New Deaths/100K Pop* (state newly confirmed COVID-19 deaths per 100,000 people, seven-day moving average); *US Total Cases/100K Pop* (U.S. confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State Total Cases/100K Pop* (state confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Total Deaths/100K Pop* (U.S. confirmed COVID-19 deaths per 100,000 people, seven-day moving average); *State Total Deaths/100K Pop* (state confirmed COVID-19 deaths per 100,000 people, seven day moving average); *US Activity Restrict Crisis* (is a dummy = 1 from February 29, 2020, onward (when the first state restrictions due to COVID-19 are active in the U.S. in Washington State)); and *State GPS Immobility* (GPS immobility indexed to January 3-February 6 2020, showing time spent inside rather than outside of residential locations). *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank \times industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A1. Interest Rate Spread: Term Loans

Dependent Variable	Interest Rate Spread									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥ 100 cases)	State Health Crisis (≥ 100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist \times COVID-19 Shock	0.000*** (2.95)	0.007*** (3.05)	0.539*** (4.51)	0.114** (1.98)	0.194** (2.42)	0.004*** (2.59)	0.119** (2.17)	0.000*** (2.60)	0.119** (2.10)	0.950*** (3.10)
Rel Exist	0.011 (0.38)	0.011 (0.37)	0.003 (0.10)	0.011 (0.37)	0.020 (0.70)	0.021 (0.72)	0.015 (0.50)	0.018 (0.62)	0.010 (0.34)	0.009 (0.29)
COVID-19 Shock	0.000*** (3.49)	0.006*** (3.29)	0.224** (2.05)	0.478*** (8.67)	-0.118*** (-3.21)	-0.001 (-0.74)	0.175*** (3.29)	-0.000 (-0.45)	0.470*** (8.90)	0.373 (1.28)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	24,334	24,334	24,334	24,334	24,334	24,334
Adjusted R-squared	0.223	0.223	0.223	0.230	0.222	0.221	0.223	0.221	0.231	0.222

Panel A2. Interest Rate Spread: Revolvers

Dependent Variable	Interest Rate Spread									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥ 100 cases)	State Health Crisis (≥ 100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist \times COVID-19 Shock	0.000 (0.01)	0.000 (0.01)	0.129 (0.60)	-0.039 (-0.46)	0.084 (1.13)	0.002 (0.98)	0.027 (0.31)	0.000 (1.14)	-0.048 (-0.55)	0.452 (0.95)
Rel Exist	-0.150*** (-2.90)	-0.150*** (-2.90)	-0.159*** (-2.98)	-0.142*** (-2.82)	-0.156*** (-3.03)	-0.156*** (-3.04)	-0.155*** (-2.79)	-0.159*** (-3.06)	-0.141*** (-2.78)	-0.162*** (-2.97)
COVID-19 Shock	0.001*** (3.71)	0.014*** (3.73)	0.725*** (4.01)	0.739*** (7.74)	-0.081 (-1.58)	-0.002 (-1.34)	0.108 (0.95)	-0.000 (-1.39)	0.716*** (7.32)	0.149 (0.29)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	13,794	13,794	13,794	13,794	13,794	13,794
Adjusted R-squared	0.260	0.260	0.259	0.268	0.258	0.258	0.258	0.258	0.267	0.258

Panel B1. Collateral: Term Loans

Dependent Variable	Collateral									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥ 100 cases)	State Health Crisis (≥ 100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist \times COVID-19 Shock	-0.000 (-0.86)	-0.000 (-0.71)	0.054* (1.69)	0.003 (0.20)	0.034** (2.05)	0.000 (0.49)	0.037** (2.32)	0.000 (0.75)	0.002 (0.15)	0.231*** (2.65)
Rel Exist	-0.040*** (-4.54)	-0.041*** (-4.57)	-0.045*** (-4.80)	-0.042*** (-4.63)	-0.043*** (-4.87)	-0.042*** (-4.84)	-0.047*** (-4.96)	-0.043*** (-4.86)	-0.042*** (-4.61)	-0.047*** (-4.98)
COVID-19 Shock	0.000 (1.00)	0.001 (1.11)	-0.008 (-0.26)	-0.025* (-1.96)	-0.029** (-2.19)	-0.000 (-1.52)	-0.031** (-2.00)	-0.000 (-1.34)	-0.018 (-1.49)	-0.236*** (-2.86)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152
Adjusted R-squared	0.373	0.373	0.373	0.374	0.374	0.373	0.374	0.373	0.373	0.374

Panel B2. Collateral: Revolvers

Dependent Variable	Collateral									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥ 100 cases)	State Health Crisis (≥ 100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist \times COVID-19 Shock	0.000** (1.97)	0.001** (2.01)	0.059* (1.66)	0.026* (1.74)	0.022 (1.32)	0.001** (2.57)	0.042** (2.42)	0.000*** (2.76)	0.025* (1.74)	0.193** (2.25)
Rel Exist	-0.043*** (-4.46)	-0.044*** (-4.46)	-0.043*** (-4.39)	-0.044*** (-4.45)	-0.040*** (-4.28)	-0.042*** (-4.41)	-0.046*** (-4.48)	-0.043*** (-4.45)	-0.044*** (-4.45)	-0.044*** (-4.42)
COVID-19 Shock	0.000 (0.56)	0.000 (0.39)	-0.034 (-1.18)	-0.019 (-1.56)	-0.012 (-1.08)	-0.000 (-0.02)	-0.007 (-0.49)	0.000 (0.14)	-0.015 (-1.28)	-0.079 (-1.22)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168
Adjusted R-squared	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440	0.440

Panel C1. Ln(Maturity): Term Loans

Dependent Variable	Ln(Maturity)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥100 cases)	State Health Crisis (≥100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist × COVID-19 Shock	-0.000*** (-3.67)	-0.007*** (-3.59)	-0.092 (-1.02)	-0.108** (-2.48)	-0.045 (-0.83)	-0.003 (-1.53)	-0.143*** (-3.04)	-0.000* (-1.75)	-0.105** (-2.44)	-0.452* (-1.88)
Rel Exist	-0.184*** (-6.95)	-0.184*** (-6.95)	-0.198*** (-7.23)	-0.186*** (-6.75)	-0.201*** (-7.50)	-0.196*** (-7.43)	-0.184*** (-6.80)	-0.193*** (-7.29)	-0.186*** (-6.72)	-0.193*** (-7.09)
COVID-19 Shock	0.000*** (4.39)	0.007*** (4.31)	0.614*** (5.53)	0.164*** (3.45)	0.131*** (3.21)	0.001 (0.65)	0.284*** (6.27)	0.000 (1.14)	0.157*** (3.39)	1.312*** (5.52)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	27,150	27,150	27,150	27,150	27,150	27,150	27,150	27,150	27,150	27,150
Adjusted R-squared	0.322	0.322	0.323	0.322	0.321	0.321	0.323	0.321	0.322	0.323

Panel C2. Ln(Maturity): Revolvers

Dependent Variable	Ln(Maturity)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥100 cases)	State Health Crisis (≥100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist × COVID-19 Shock	-0.000* (-1.66)	-0.002 (-1.63)	-0.094 (-1.41)	-0.056** (-2.03)	-0.053* (-1.79)	-0.001 (-1.19)	-0.077** (-2.32)	-0.000 (-1.37)	-0.062** (-2.23)	-0.365** (-2.11)
Rel Exist	-0.103*** (-6.69)	-0.103*** (-6.73)	-0.105*** (-6.86)	-0.100*** (-6.43)	-0.108*** (-7.16)	-0.109*** (-7.23)	-0.099*** (-6.49)	-0.108*** (-7.13)	-0.099*** (-6.30)	-0.101*** (-6.74)
COVID-19 Shock	0.000* (1.93)	0.002* (1.86)	0.255*** (4.03)	0.077*** (2.94)	0.036** (1.98)	0.001** (2.22)	0.119*** (4.34)	0.000** (2.21)	0.063** (2.57)	0.575*** (4.34)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	26,165	26,165	26,165	26,165	26,165	26,165	26,165	26,165	26,165	26,165
Adjusted R-squared	0.286	0.286	0.286	0.286	0.285	0.285	0.286	0.285	0.286	0.286

Panel D1. Ln(Loan Amount): Term Loans

Dependent Variable	Ln(Loan Amount)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥100 cases)	State Health Crisis (≥100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist × COVID-19 Shock	-0.000** (-2.12)	-0.004** (-2.30)	-0.153 (-1.50)	-0.041 (-0.94)	-0.032 (-0.64)	-0.001 (-0.75)	-0.045 (-0.88)	-0.000 (-0.78)	-0.041 (-0.96)	-0.155 (-0.55)
Rel Exist	-0.032 (-1.35)	-0.031 (-1.32)	-0.033 (-1.41)	-0.035 (-1.47)	-0.040* (-1.75)	-0.039* (-1.68)	-0.035 (-1.45)	-0.038 (-1.44)	-0.034 (-1.45)	-0.038 (-1.58)
COVID-19 Shock	-0.000 (-0.95)	-0.001 (-0.87)	0.268*** (2.71)	0.068 (1.64)	-0.025 (-0.44)	-0.001 (-1.56)	0.119** (2.38)	-0.000 (-1.33)	0.066 (1.63)	0.778*** (2.64)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152	27,152
Adjusted R-squared	0.475	0.475	0.475	0.475	0.475	0.475	0.475	0.475	0.475	0.475

Panel D2. Ln(Loan Amount): Revolvers

Dependent Variable	Ln(Loan Amount)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
COVID-19 Variable	US Health Crisis (≥100 cases)	State Health Crisis (≥100 cases)	US New Deaths /100K Pop	State New Deaths /100K Pop	US Total Cases /100K Pop	State Total Cases /100K Pop	US Total Deaths /100K Pop	State Total Deaths /100K Pop	US Activity Restrict Crisis	State GPS Immobility
Rel Exist × COVID-19 Shock	-0.000** (-2.53)	-0.007** (-2.56)	-0.218 (-1.22)	-0.088 (-1.43)	-0.087 (-1.44)	-0.002** (-2.21)	-0.154** (-2.17)	-0.000*** (-2.79)	-0.096 (-1.60)	-0.554 (-1.53)
Rel Exist	0.122*** (4.63)	0.124*** (4.70)	0.113*** (4.21)	0.115*** (4.29)	0.103*** (3.70)	0.105*** (3.78)	0.124*** (4.52)	0.111*** (4.01)	0.118*** (4.40)	0.114*** (4.16)
COVID-19 Shock	-0.000 (-0.22)	-0.000 (-0.10)	0.317*** (2.85)	0.155*** (3.32)	0.093** (2.35)	0.001* (1.70)	0.245*** (5.25)	0.000* (1.93)	0.154*** (3.29)	1.277*** (5.15)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168	26,168
Adjusted R-squared	0.549	0.549	0.549	0.549	0.549	0.549	0.550	0.549	0.549	0.550

Table 8. Loan Terms during COVID-19 using Propensity Score Matched (PSM) Samples

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers using propensity-score matched samples. We match loans from banks that are similar in size to firms are similar in asset size and industries, for the pre-COVID period and COVID period, respectively. Results are presented separately for term loans (Panel A) and revolvers (Panel B). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay At Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018 and June 30, 2020. All variables are defined in the Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Term Loans (3 closest neighbors)

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock	0.024*** (3.09)	0.010* (1.69)	0.024** (2.58)	0.016* (1.68)	-0.002 (-0.85)	0.000 (0.27)	-0.002 (-0.84)	0.002 (0.93)	-0.013** (-2.06)	-0.008** (-2.04)	-0.016** (-2.27)	-0.016** (-2.05)	-0.012* (-1.85)	-0.006 (-1.31)	-0.011 (-1.49)	-0.012 (-1.50)
Rel Exist	-0.026 (-0.87)	-0.010 (-0.33)	-0.026 (-0.86)	-0.014 (-0.47)	-0.035*** (-3.75)	-0.037*** (-3.97)	-0.035*** (-3.75)	-0.039*** (-4.08)	-0.191*** (-6.56)	-0.195*** (-6.75)	-0.188*** (-6.44)	-0.189*** (-6.61)	-0.050** (-2.01)	-0.056** (-2.29)	-0.051** (-2.06)	-0.052** (-2.08)
COVID-19 Shock	0.032*** (3.65)	-0.004 (-1.02)	0.059*** (5.90)	0.025** (2.44)	0.001 (0.35)	-0.001 (-0.68)	-0.002 (-0.78)	-0.001 (-0.67)	0.043*** (4.73)	0.017*** (5.55)	0.043*** (4.53)	0.043*** (5.21)	0.016** (2.47)	0.008** (2.40)	0.021*** (2.86)	0.028*** (3.73)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257	16,257
Adjusted R-squared	0.239	0.235	0.242	0.236	0.408	0.408	0.408	0.408	0.306	0.304	0.305	0.305	0.476	0.475	0.476	0.476

Panel B. Revolvers (3 closest neighbors)

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock	-0.000 (-0.01)	0.007 (1.01)	0.000 (0.02)	-0.008 (-0.64)	0.006** (2.36)	0.002 (1.16)	0.007** (2.20)	0.010*** (2.85)	-0.006 (-0.68)	-0.001 (-0.30)	-0.008 (-0.95)	-0.005 (-0.57)	-0.033*** (-2.74)	-0.018** (-2.45)	-0.040*** (-2.77)	-0.046*** (-3.04)
Rel Exist	-0.072 (-1.37)	-0.079 (-1.58)	-0.077 (-1.42)	-0.062 (-1.20)	-0.040*** (-3.86)	-0.034*** (-3.28)	-0.040*** (-3.79)	-0.042*** (-4.08)	-0.146*** (-5.27)	-0.152*** (-5.88)	-0.144*** (-5.21)	-0.148*** (-5.41)	0.037 (0.86)	0.014 (0.32)	0.042 (0.99)	0.043 (1.02)
COVID-19 Shock	0.071*** (4.93)	-0.004 (-0.66)	0.104*** (6.22)	0.027 (1.60)	-0.011*** (-3.39)	-0.000 (-0.06)	-0.012*** (-3.46)	-0.008*** (-2.62)	0.014* (1.95)	0.006* (1.85)	0.018** (2.31)	0.014* (1.89)	0.006 (0.53)	0.012* (1.81)	0.019 (1.59)	0.037*** (3.08)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061	9,061
Adjusted R-squared	0.271	0.267	0.274	0.267	0.475	0.474	0.475	0.475	0.305	0.305	0.305	0.305	0.452	0.451	0.452	0.452

Table 9. Loan Terms during COVID-19: Firm and Bank Size

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers using cross-sectional tests by firm and bank size: *Smaller Firm* (< \$25 million) and *Smaller Bank* (non-top 4 banks in terms of total assets). Results are presented separately for term loans (Panels A1-B1) and revolvers (Panels A2-B2). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A1. Effects for Smaller Firms (<\$25 Million in Assets) using Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × Smaller Firm	-0.043*** (-3.15)	-0.028*** (-3.37)	-0.041** (-2.55)	-0.032** (-2.09)	0.005* (1.72)	-0.000 (-0.18)	0.007* (1.93)	0.001 (0.20)	0.009 (0.76)	0.009 (1.10)	0.009 (0.61)	0.016 (1.15)	0.003 (0.27)	-0.001 (-0.10)	-0.001 (-0.13)	0.001 (0.12)
Rel Exist × COVID-19 Shock	0.030*** (3.76)	0.018*** (3.16)	0.028*** (2.89)	0.023** (2.47)	-0.001 (-0.25)	0.002 (1.38)	-0.000 (-0.15)	0.005* (1.88)	-0.013** (-2.20)	-0.008* (-1.83)	-0.014* (-1.96)	-0.018** (-2.40)	-0.007 (-0.98)	0.002 (0.34)	-0.005 (-0.65)	-0.007 (-0.80)
Smaller Firm × COVID-19 Shock	-0.008 (-0.86)	0.003 (0.55)	-0.014 (-1.24)	-0.003 (-0.32)	-0.005** (-2.16)	0.001 (0.59)	-0.005* (-1.90)	-0.002 (-0.98)	0.021*** (3.01)	0.006 (1.18)	0.028*** (3.58)	0.019** (2.51)	0.025*** (3.29)	0.012** (2.10)	0.029*** (3.26)	0.023*** (2.63)
Rel Exist × Smaller Firm	0.008 (0.16)	-0.015 (-0.33)	0.008 (0.17)	-0.010 (-0.20)	0.052*** (3.66)	0.059*** (4.13)	0.050*** (3.42)	0.056*** (3.73)	0.015 (0.30)	0.011 (0.23)	0.016 (0.33)	0.011 (0.22)	-0.009 (-0.26)	-0.009 (-0.26)	-0.005 (-0.13)	-0.006 (-0.16)
Rel Exist	0.005 (0.15)	0.021 (0.62)	0.007 (0.19)	0.019 (0.55)	-0.050*** (-4.81)	-0.053*** (-5.15)	-0.050*** (-4.84)	-0.055*** (-5.17)	-0.193*** (-6.71)	-0.198*** (-6.86)	-0.192*** (-6.59)	-0.189*** (-6.56)	-0.043 (-1.58)	-0.052* (-1.95)	-0.045* (-1.65)	-0.044 (-1.58)
COVID-19 Shock	0.033*** (4.15)	-0.007* (-1.70)	0.064*** (6.37)	0.022*** (2.59)	-0.000 (-0.05)	-0.002 (-1.57)	-0.003 (-1.05)	-0.003 (-1.29)	0.034*** (4.44)	0.012*** (3.82)	0.032*** (3.63)	0.039*** (5.26)	0.004 (0.54)	-0.003 (-0.62)	0.007 (0.91)	0.012 (1.48)
Smaller Firm	0.295*** (7.77)	0.275*** (7.43)	0.301*** (7.94)	0.286*** (7.57)	-0.027*** (-2.59)	-0.033*** (-3.18)	-0.027*** (-2.63)	-0.028*** (-2.74)	-0.073*** (-2.55)	-0.056*** (-1.99)	-0.081*** (-2.79)	-0.075*** (-2.57)	-0.526*** (-18.84)	-0.508*** (-18.52)	-0.528*** (-18.70)	-0.523*** (-18.46)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.225	0.222	0.228	0.223	0.373	0.373	0.373	0.373	0.324	0.322	0.323	0.324	0.468	0.468	0.468	0.468

Panel A2. Effects for Smaller Firms (<\$25 Million in Assets) using Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × Smaller Firm	-0.012 (-0.60)	-0.011 (-1.22)	-0.014 (-0.59)	-0.025 (-1.30)	-0.006* (-1.96)	-0.003 (-1.59)	-0.006* (-1.74)	-0.008** (-2.22)	0.009 (1.31)	0.006 (1.16)	0.012 (1.56)	0.018** (2.17)	-0.006 (-0.61)	0.006 (0.90)	-0.006 (-0.54)	0.009 (0.77)
Rel Exist × COVID-19 Shock	0.003 (0.17)	0.011 (1.52)	-0.000 (-0.00)	0.011 (0.76)	0.004* (1.70)	0.002 (1.43)	0.004 (1.62)	0.007** (2.27)	-0.008 (-1.53)	-0.004 (-1.18)	-0.009* (-1.73)	-0.012* (-1.94)	-0.009 (-0.91)	-0.010** (-1.99)	-0.010 (-0.83)	-0.023* (-1.79)
Smaller Firm × COVID-19 Shock	-0.027* (-1.80)	0.005 (0.80)	-0.028 (-1.51)	0.012 (0.94)	0.002 (1.12)	0.001 (0.58)	0.002 (1.01)	0.002 (0.66)	0.016*** (3.57)	0.006** (2.22)	0.016*** (3.38)	0.013*** (2.72)	0.002 (0.27)	-0.008 (-1.60)	0.001 (0.14)	-0.014* (-1.68)
Rel Exist × Smaller Firm	0.166** (2.10)	0.148** (2.04)	0.184** (2.29)	0.172** (2.16)	0.055*** (3.96)	0.050*** (3.74)	0.055*** (3.88)	0.055*** (3.88)	-0.071** (-2.34)	-0.068** (-2.36)	-0.073** (-2.39)	-0.080*** (-2.61)	0.092** (1.97)	0.073 (1.53)	0.094** (2.00)	0.076 (1.60)
Rel Exist	-0.194*** (-3.31)	-0.198*** (-3.40)	-0.196*** (-3.36)	-0.198*** (-3.30)	-0.048*** (-4.07)	-0.045*** (-3.99)	-0.048*** (-4.06)	-0.050*** (-4.14)	-0.092*** (-5.47)	-0.098*** (-5.89)	-0.090*** (-5.34)	-0.089*** (-5.34)	0.075** (2.35)	0.076** (2.24)	0.075** (2.36)	0.089*** (2.74)
COVID-19 Shock	0.072*** (4.99)	-0.008 (-1.39)	0.114*** (5.83)	0.007 (0.41)	-0.000 (-0.10)	-0.000 (-0.36)	-0.002 (-0.94)	-0.000 (-0.11)	0.011** (2.35)	0.002 (1.01)	0.012** (2.26)	0.013*** (2.71)	0.011 (1.44)	0.010*** (2.74)	0.021** (2.17)	0.040*** (4.72)
Smaller Firm	0.264*** (3.89)	0.224*** (3.26)	0.250*** (3.67)	0.209*** (2.99)	0.102*** (7.41)	0.105*** (7.73)	0.103*** (7.42)	0.105*** (7.63)	-0.273*** (-11.94)	-0.258*** (-11.74)	-0.274*** (-11.89)	-0.270*** (-11.74)	-1.087*** (-20.70)	-1.070*** (-20.73)	-1.087*** (-20.60)	-1.066*** (-19.78)
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.261	0.257	0.265	0.257	0.427	0.427	0.427	0.427	0.286	0.284	0.286	0.286	0.543	0.543	0.543	0.544

Panel B1. Effects for Smaller (Non-Top 4) Banks using Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × Smaller Bank	-0.040*** (-2.88)	-0.005 (-0.48)	-0.046*** (-2.70)	-0.036** (-2.27)	0.007* (1.79)	-0.001 (-0.50)	0.007* (1.66)	-0.004 (-0.81)	-0.001 (-0.09)	-0.003 (-0.42)	-0.003 (-0.31)	-0.000 (-0.02)	0.019 (1.56)	0.003 (0.46)	0.021 (1.50)	0.022 (1.44)
Rel Exist × COVID-19 Shock	0.054*** (5.05)	0.018** (2.47)	0.057*** (4.12)	0.048*** (3.92)	-0.004 (-1.24)	0.003 (1.23)	-0.004 (-1.11)	0.007 (1.60)	-0.013** (-2.02)	-0.005 (-0.97)	-0.013 (-1.60)	-0.017* (-1.84)	-0.019* (-1.91)	-0.001 (-0.11)	-0.019* (-1.68)	-0.020 (-1.59)
Smaller Bank × COVID-19 Shock	-0.000 (-0.01)	0.017*** (2.84)	-0.007 (-0.47)	0.026** (1.98)	0.002 (0.64)	0.005*** (1.21)	0.004 (1.43)	0.005 (1.43)	0.014* (1.75)	0.009* (1.76)	0.020** (2.19)	0.009 (1.05)	0.002 (0.20)	0.012* (1.71)	0.000 (0.02)	0.001 (0.10)
Rel Exist × Smaller Bank	-0.234*** (-4.06)	-0.268*** (-4.72)	-0.224*** (-3.86)	-0.251*** (-4.31)	0.051** (2.06)	0.059** (2.41)	0.051** (2.06)	0.060** (2.39)	-0.083* (-1.82)	-0.079* (-1.76)	-0.080* (-1.75)	-0.080* (-1.75)	-0.241*** (-4.20)	-0.226*** (-4.15)	-0.242*** (-4.25)	-0.238*** (-4.20)
Rel Exist	0.138*** (2.73)	0.175*** (3.53)	0.134*** (2.62)	0.160*** (3.10)	-0.073*** (-3.45)	-0.080*** (-3.78)	-0.073*** (-3.47)	-0.083*** (-3.85)	-0.139*** (-3.67)	-0.150*** (-3.98)	-0.140*** (-3.71)	-0.139*** (-3.68)	0.112** (2.42)	0.094** (2.12)	0.111** (2.44)	0.107** (2.35)
COVID-19 Shock	0.038*** (3.03)	-0.014*** (-3.33)	0.071*** (4.69)	0.009 (0.72)	-0.002 (-0.72)	-0.004*** (-2.77)	-0.006* (-1.80)	-0.007* (-1.94)	0.030*** (3.51)	0.009** (2.17)	0.026*** (2.76)	0.038*** (4.94)	0.007 (0.71)	-0.007 (-1.14)	0.013 (1.11)	0.016 (1.28)
Smaller Bank	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.226	0.222	0.230	0.224	0.375	0.375	0.375	0.375	0.323	0.322	0.323	0.324	0.476	0.476	0.476	0.476

Panel B2. Effects for Smaller (Non-Top 4) Banks using Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × Smaller Bank	-0.057** (-2.21)	-0.015 (-1.11)	-0.053* (-1.89)	-0.040 (-1.59)	-0.003 (-0.69)	0.000 (0.13)	-0.004 (-0.77)	-0.010 (-1.52)	0.016* (1.93)	0.017*** (3.14)	0.019** (2.05)	0.031*** (2.84)	0.007 (0.27)	-0.006 (-0.58)	0.000 (0.00)	0.013 (0.31)
Rel Exist × COVID-19 Shock	0.049** (2.09)	0.020* (1.67)	0.043* (1.74)	0.037* (1.71)	0.006 (1.37)	0.002 (0.69)	0.007 (1.48)	0.014** (2.24)	-0.019*** (-2.61)	-0.015*** (-3.21)	-0.022*** (-2.79)	-0.033*** (-3.29)	-0.015 (-0.63)	-0.003 (-0.29)	-0.013 (-0.41)	-0.028 (-0.64)
Smaller Bank × COVID-19 Shock	-0.059** (-2.46)	-0.001 (-0.10)	-0.082*** (-2.90)	0.001 (0.05)	0.002 (0.58)	0.000 (0.29)	0.001 (0.46)	-0.001 (-0.46)	0.015** (2.56)	0.003 (0.89)	0.017*** (2.64)	0.012* (1.86)	0.007 (0.62)	-0.001 (-0.11)	0.014 (1.11)	-0.006 (-0.46)
Rel Exist × Smaller Bank	0.067 (0.73)	-0.011 (-0.13)	0.073 (0.79)	0.012 (0.13)	0.096*** (5.29)	0.091*** (4.75)	0.097*** (5.34)	0.099*** (5.18)	-0.106*** (-2.78)	-0.101*** (-2.70)	-0.109*** (-2.81)	-0.112*** (-2.91)	-0.241*** (-3.48)	-0.222*** (-2.80)	-0.232*** (-3.40)	-0.239*** (-3.42)
Rel Exist	-0.212** (-2.32)	-0.154* (-1.81)	-0.215** (-2.32)	-0.166* (-1.88)	-0.106*** (-6.98)	-0.100*** (-6.03)	-0.108*** (-7.13)	-0.111*** (-6.82)	-0.032 (-1.07)	-0.045 (-1.64)	-0.029 (-0.96)	-0.028 (-0.96)	0.268*** (5.24)	0.249*** (4.03)	0.264*** (5.22)	0.273*** (5.20)
COVID-19 Shock	0.098*** (4.11)	-0.006 (-0.83)	0.149*** (5.13)	0.009 (0.37)	-0.000 (-0.11)	-0.000 (-0.22)	-0.002 (-0.63)	0.002 (0.58)	0.008 (1.36)	0.002 (0.96)	0.007 (1.15)	0.010 (1.64)	0.008 (0.76)	0.008 (1.51)	0.012 (0.92)	0.039*** (3.22)
Smaller Bank	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.264	0.258	0.268	0.258	0.442	0.442	0.442	0.442	0.288	0.286	0.288	0.288	0.550	0.550	0.550	0.550

Table 10. Loan Terms during COVID-19: Effects of the Paycheck Protection Program (PPP)

This table reports OLS regression estimates to assess how COVID-19 affects the terms on newly issued loans to relationship borrowers differently at *High PPP Bank* (banks with PPP lending to total loans greater than the median). PPP loan information comes from the Y9-C reports. Results are presented separately for term loans (Panel 1) and revolvers (Panel 2). In each panel, four loan contract terms are regressed on one of our main COVID-19 shock variables, a relationship existence dummy, their interaction, a large set of explanatory variables, and bank and industry fixed effects. The loan contract terms are: *Interest Rate Spread*, loan spread over the rate of a constant maturity U.S. Treasury bond with similar maturity; *Collateral*, a dummy = 1 if the loan is collateralized; *Ln(Maturity)*, the natural log of one plus maturity, the number of years from date of origination to date of maturity; and *Ln(Loan Amount)*, the natural log of one plus loan amount, the size of the loan in \$ million. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven-day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay at Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) *Rel Exist* is a dummy = 1 if the borrower had a prior loan with the bank over the past three years. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018, and June 30, 2020. All variables are defined in the Table 1. Standard errors are clustered at the bank × industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel 1. Effects for High PPP Banks using Term Loans

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × High PPP Bank	-0.036** (-2.49)	-0.006 (-0.56)	-0.045** (-2.50)	-0.032** (-2.09)	0.020*** (5.05)	0.007*** (2.86)	0.022*** (4.97)	0.016*** (3.41)	0.003 (0.28)	0.002 (0.24)	0.001 (0.09)	0.018 (1.39)	0.010 (0.81)	-0.004 (-0.53)	0.011 (0.81)	0.005 (0.35)
Rel Exist × COVID-19 Shock	0.042*** (3.82)	0.013*** (2.28)	0.047*** (3.32)	0.035*** (3.08)	-0.012*** (-3.83)	-0.002 (-0.90)	-0.014*** (-3.81)	-0.006 (-1.41)	-0.016** (-2.30)	-0.008 (-1.64)	-0.017* (-1.93)	-0.031*** (-2.95)	-0.014 (-1.53)	0.003 (0.47)	-0.014 (-1.30)	-0.011 (-0.88)
High PPP Bank × COVID-19 Shock	-0.001 (-0.06)	0.016*** (2.71)	-0.005 (-0.36)	0.027** (2.33)	-0.002 (-0.60)	0.002 (1.44)	-0.001 (-0.22)	0.003 (0.74)	0.021*** (2.82)	0.008* (1.75)	0.027*** (2.97)	0.013 (1.53)	0.006 (0.60)	0.008 (1.16)	0.007 (0.63)	0.002 (0.16)
Rel Exist × High PPP Bank	-0.198*** (-3.50)	-0.275*** (-5.31)	-0.183*** (-3.17)	-0.255*** (-4.66)	-0.095*** (-4.48)	-0.073*** (-3.65)	-0.098*** (-4.52)	-0.081*** (-4.04)	0.006 (0.14)	0.012 (0.28)	0.005 (0.11)	-0.008 (-0.19)	-0.001 (-0.02)	0.023 (0.44)	0.000 (0.01)	0.012 (0.23)
Rel Exist	0.139*** (3.20)	0.205*** (5.18)	0.129*** (2.95)	0.188*** (4.48)	0.024 (1.41)	0.006 (0.35)	0.026 (1.49)	0.009 (0.56)	-0.192*** (-4.53)	-0.204*** (-4.86)	-0.189*** (-4.50)	-0.179*** (-4.50)	-0.031 (-0.81)	-0.057 (-1.53)	-0.034 (-0.86)	-0.042 (-1.12)
COVID-19 Shock	0.033*** (2.87)	-0.012*** (-3.06)	0.066*** (4.48)	0.005 (0.50)	-0.001 (-0.26)	-0.003* (-1.84)	-0.004 (-1.36)	-0.005* (-1.71)	0.025*** (3.13)	0.010*** (2.73)	0.021** (2.24)	0.035*** (4.87)	0.005 (0.53)	-0.004 (-0.67)	0.008 (0.78)	0.016 (1.51)
High PPP Bank	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	24,334	24,334	24,334	24,334	27,152	27,152	27,152	27,152	27,150	27,150	27,150	27,150	27,152	27,152	27,152	27,152
Adjusted R-squared	0.226	0.224	0.230	0.225	0.376	0.376	0.377	0.376	0.324	0.322	0.323	0.324	0.475	0.475	0.475	0.475

Panel 2. Effects for High PPP Banks using Revolvers

Dependent Variable	Interest Rate Spread				Collateral				Ln(Maturity)				Ln(Loan Amount)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
COVID-19 Variable	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index	US New Cases/100K Pop	State New Cases/100K Pop	US Restrict Index	State Restrict Index
Rel Exist × COVID-19 Shock × High PPP Bank	-0.011 (-0.39)	0.003 (0.24)	0.006 (0.20)	0.014 (0.59)	0.013*** (3.21)	0.008*** (3.81)	0.012*** (2.75)	0.009* (1.93)	-0.012 (-1.57)	-0.001 (-0.28)	-0.014 (-1.59)	-0.006 (-0.61)	-0.003 (-0.20)	-0.005 (-0.62)	-0.007 (-0.32)	0.001 (0.06)
Rel Exist × COVID-19 Shock	0.010 (0.41)	0.005 (0.60)	-0.001 (-0.03)	-0.004 (-0.22)	-0.003 (-1.14)	-0.002 (-1.20)	-0.003 (-0.76)	0.001 (0.33)	-0.002 (-0.38)	-0.004 (-0.96)	-0.003 (-0.43)	-0.008 (-0.88)	-0.011 (-0.74)	-0.007 (-1.08)	-0.011 (-0.58)	-0.022 (-0.99)
High PPP Bank × COVID-19 Shock	-0.030* (-1.66)	0.006 (0.80)	-0.049** (-2.26)	0.016 (0.82)	-0.006*** (-2.69)	-0.003** (-2.47)	-0.007*** (-2.86)	-0.006** (-2.28)	0.021*** (3.98)	0.008*** (2.78)	0.024*** (3.97)	0.019*** (3.19)	0.016 (1.58)	0.007 (1.17)	0.026** (2.29)	0.005 (0.39)
Rel Exist × High PPP Bank	-0.047 (-0.56)	-0.117 (-1.39)	-0.055 (-0.66)	-0.130 (-1.53)	-0.061*** (-3.99)	-0.054*** (-3.87)	-0.059*** (-3.87)	-0.055*** (-3.53)	-0.017 (-0.60)	-0.029 (-1.00)	-0.017 (-0.61)	-0.025 (-0.92)	-0.106** (-2.14)	-0.098* (-1.77)	-0.102** (-2.07)	-0.104** (-2.11)
Rel Exist	-0.132* (-1.83)	-0.094 (-1.27)	-0.127* (-1.73)	-0.083 (-1.11)	-0.010 (-0.93)	-0.012 (-1.19)	-0.011 (-1.05)	-0.017 (-1.50)	-0.090*** (-4.02)	-0.090*** (-4.01)	-0.088*** (-3.95)	-0.084*** (-3.88)	0.175*** (5.12)	0.164*** (4.13)	0.174*** (5.09)	0.181*** (5.31)
COVID-19 Shock	0.078*** (4.58)	-0.009 (-1.38)	0.129*** (5.60)	0.002 (0.11)	0.002 (1.03)	0.001 (1.14)	0.001 (0.41)	0.003 (1.05)	0.005 (0.88)	0.000 (0.21)	0.004 (0.62)	0.007 (1.32)	0.004 (0.42)	0.005 (1.26)	0.007 (0.68)	0.033*** (3.28)
High PPP Bank	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Loan/Firm/Bank/County Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bank & Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	13,794	13,794	13,794	13,794	26,168	26,168	26,168	26,168	26,165	26,165	26,165	26,165	26,168	26,168	26,168	26,168
Adjusted R-squared	0.261	0.258	0.265	0.258	0.441	0.441	0.441	0.441	0.287	0.286	0.287	0.287	0.549	0.549	0.549	0.550

Table 11. “Rough Cut” at the Data to Assess Credit Availability at the Extensive Margin

This table reports OLS regression estimates to assess how COVID-19 affects bank-level credit to borrowers. Results are presented separately for term loans (Panel A) and revolvers (Panel B). In each panel, the level and changes in quantities of new credit are regressed on the percent of loans to relationship borrowers, one of our main COVID-19 shock variables, their interaction, a large set of explanatory variables, and bank fixed effects. New credit granted by the bank is captured by two variables: $Ln(Dollar\text{-}Years)$, the natural log of the level of credit granted by a bank in a month expressed in dollar years, calculated as the sum of the dollar values of new loans issued times the maturity of these loans; and $Ln(\Delta Dollar\text{-}Years)$, the natural log of changes in estimated total credit granted. *Percent of loans to relationship borrowers* is calculated using dollar years of credit. There are four main COVID-19 shock variables: *US New Cases/100K Pop* (U.S. newly confirmed COVID-19 cases per 100,000 people, seven day moving average); *State New Cases/100K Pop* (state newly confirmed COVID-19 cases per 100,000 people, seven day moving average); *US Restrict Index* (U.S. restrictions index, constructed as the state-population weighted average of 10 individual U.S. state restrictions for COVID-19.); and *State Restrict Index* (State restrictions index, which captures 10 mandated statewide restrictions with potential impact on economic activity: (1) Emergency Declaration; (2) Stay At Home; (3) Non-essential Business Close; (4) Other Business Close; (5) Restaurant Restrictions; (6) Bar Restrictions; (7) School Close; (8) Gathering Restrictions; (9) Travel Restrictions; and (10) Quarantine/Case Isolation orders. We add a 1 for each restriction that is present in a state.) Loans to relationship borrowers and non-relationship borrowers are identified based on whether the loan is made to a firm that has borrowed from the bank at least once over the past three years. Given that the data are aggregated to the bank-time level, the firm controls, county controls, and the COVID-19 variables that relate to firm domicile are also weighted averages. The sample includes corporate loans reported in the Y-14Q by banks with total assets above \$100 billion between April 1, 2018 and June 30, 2020. All variables are defined in the Table 1. Standard errors are clustered at the bank \times industry level. ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Term loans

Dependent Variable	Ln(Dollar-Years)				Ln(Δ Dollar-Years)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
COVID-19 Variable	US New Cases /100K Pop	State New Cases /100K Pop	US Restrict Index	State Restrict Index	US New Cases /100K Pop	State New Cases /100K Pop	US Restrict Index	State Restrict Index
Percent of loans to relationship borrowers \times COVID-19 Shock	-0.038 (-0.61)	-0.025 (-0.87)	-0.014 (-0.19)	-0.003 (-0.04)	-0.135 (-1.64)	-0.090** (-2.76)	-0.143 (-1.45)	-0.127 (-1.29)
Percent of loans to relationship borrowers	-0.103 (-0.39)	-0.111 (-0.45)	-0.120 (-0.44)	-0.130 (-0.48)	0.122 (0.37)	0.105 (0.35)	0.125 (0.38)	0.106 (0.32)
COVID-19 Shock	0.028 (0.96)	0.019 (1.13)	0.031 (0.89)	0.039 (1.03)	0.043 (1.37)	0.015 (1.08)	0.053 (1.40)	0.041 (1.00)
Bank Controls	YES	YES	YES	YES	YES	YES	YES	YES
Bank FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	697	697	697	697	669	669	669	669
Adjusted R-squared	0.790	0.790	0.790	0.791	0.086	0.086	0.086	0.085

Panel B. Revolvers

Dependent Variable	Ln(Dollar-Years)				Ln(Δ Dollar-Years)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
COVID-19 Variable	US New Cases /100K Pop	State New Cases /100K Pop	US Restrict Index	State Restrict Index	US New Cases /100K Pop	State New Cases /100K Pop	US Restrict Index	State Restrict Index
Percent of loans to relationship borrowers \times COVID-19 Shock	-0.031 (-0.46)	-0.037 (-1.10)	-0.036 (-0.49)	-0.014 (-0.19)	-0.008 (-0.17)	-0.020 (-0.51)	-0.019 (-0.40)	-0.065 (-1.06)
Percent of loans to relationship borrowers	0.021 (0.10)	0.027 (0.13)	0.031 (0.15)	0.016 (0.08)	0.404* (1.78)	0.422 (1.68)	0.417* (1.75)	0.464* (1.92)
COVID-19 Shock	0.087*** (3.02)	0.056** (2.45)	0.096*** (2.94)	0.089** (2.61)	0.041 (1.33)	0.018 (0.60)	0.054 (1.57)	0.071** (2.10)
Bank Controls	YES	YES	YES	YES	YES	YES	YES	YES
Bank FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	718	718	718	718	688	688	688	688
Adjusted R-squared	0.844	0.843	0.844	0.844	0.171	0.169	0.171	0.172