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# A Helping Hand to Main Street Where and When It Was Needed

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This paper investigates the lending activity of the Main Street Lending Program, which the Federal Reserve established at the onset of the COVID-19 pandemic in spring 2020. Main Street was the largest (by total principal outstanding) of the Federal Reserve's emergency credit and liquidity facilities. The authors find fairly robust evidence that Main Street accomplished its key goal of directing more funds where and when they were most needed. Businesses located in states with more severe declines in commercial activity (as proxied by mobility indicators) and higher infection rates obtained a higher volume of loans from Main Street. Furthermore, the timing of the loans tended to coincide with the need: More loans were applied for and approved when a state experienced an increase in its state-wide infection rate.

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*Only publicly released Main Street Lending Program data are used in the authors' analysis.*

# 1 The Main Street Lending Program

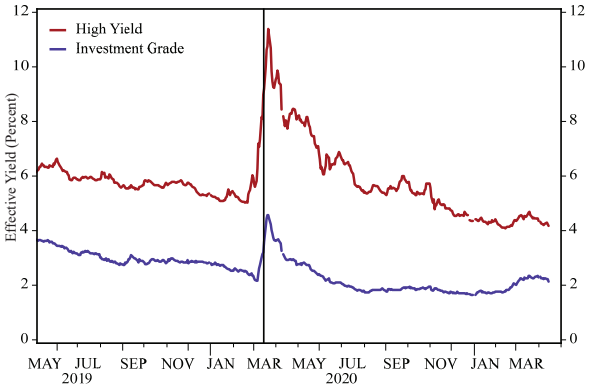
In the wake of the financial market panic induced by the COVID-19 pandemic, the Federal Reserve established corporate-bond-buying facilities in March 2020 to support the corporate bond market. Moreover, serving as liquidity backstops, these facilities provided indirect credit support to large firms through syndicated loans and bond issuance. At the same time, the Coronavirus Aid, Relief, and Economic Security (CARES) Act allocated funds to offer what were essentially grants to small businesses via the Paycheck Protection Program (PPP). By comparison, mid-sized firms were initially in danger of falling through the cracks: They may have been too large to borrow under the PPP but too small to access the corporate bond market and thus could not benefit from the bond-purchase programs. The Federal Reserve established the Main Street Lending Program (MSLP), on April 9, 2020, to better target these mid-market businesses for credit support.

The urgency for the Federal Reserve to take action and support the US financial markets, the credit market in particular, was evident in the skyrocketing bond spreads and the spike in loan standards in March 2020. As Figure 1 shows, when it became clear in March 2020 that the number of COVID-19 infections was growing exponentially, credit spreads in the corporate bond market surged for both investment-grade and high-yield bonds. Bank senior loan officers later reported that they tightened lending standards substantially around that time. On March 14 (the vertical line in Figure 1), the US government declared a state of emergency in an effort to control the COVID-19 outbreak. The resulting containment measures taken by state and local governments, which included mandatory closures and lockdowns, severely hindered the ability of many firms, especially those engaged in services involving direct personal contact, to operate and generate income.

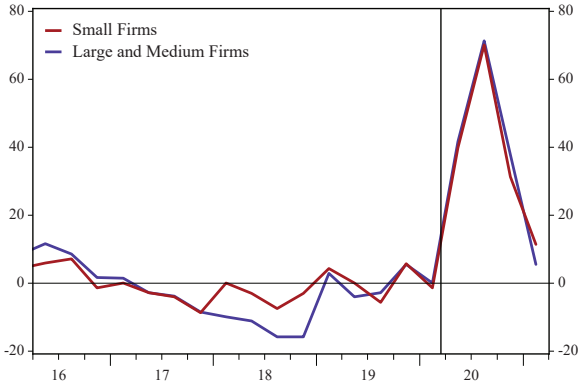
In addition to the clearly negative short-run impact, there was tremendous uncertainty regarding the eventual severity and duration of the pandemic. Concerns about the prospect of the affected businesses recovering led to a notable contraction in credit supply. At the same time, the heightened uncertainty caused businesses to curtail or even fully halt investment plans, resulting in a decline in credit demand. Consequently, credit flows to the affected sectors slowed precipitously or even stopped abruptly. On the other hand, short of revenue, a large number of small and medium-sized enterprises were in dire need of liquidity to cover the nontrivial cash outlays needed to cover fixed costs (such as rent or mortgage payments), retain at least essential employees, or both. Many small businesses were able to obtain PPP funding to cover such expenses, whereas mid-sized firms were left mostly uncovered. The Main Street facilities therefore were set up to fill this void.

In this paper, we use the publicly released data to shed light on the factors that influenced

Figure 1: Credit Markets Tightening around the COVID-19 Outbreak




(a) Effective yield of the ICE/Bank of America Merril Lynch Bond Yield Index for Investment Grade (BBB-rated and above in blue) and High Yield (BB rated and below in red).




(b) Percentage of banks that tightened credit standards minus percentage of banks that eased credit standards for C&I loans or credit lines to small firms (in red) and large and middle-market firms (in blue).

*Note:* The vertical line marks March 14, 2020, the date when the US government declared a state of emergency in an effort to contain the COVID-19 outbreak. *Sources:* Haver Analytics, ICE/Merril Lynch Bond Index, and Senior Loan Officer Opinion Survey on Bank Lending Practices.

the MSLP loan uptake, in particular to show whether the program achieved its chief goal of directing funding to where it was most needed. Our main focus is to estimate whether the program supported the flow of credit to states that were particularly affected by the COVID-19–induced public health crisis and the resulting sharp economic downturn. Our analysis is intended to complement several existing studies of the MSLP. Morgan and Clampitt (2021) discuss the main design features of the MSLP and compare its ultimate volume with the other Federal Reserve credit market facilities. Bräuning and Paligorova (2021) find that the amount of credit extended by the MSLP reached about 60 percent of the volume of loans made by the large banks to borrowers of comparable size and leverage. Minoiu, Zarutskie, and Zlate (2021) study banks' participation in the MSLP and find that banks with assets of $1 billion to $50 billion originated close to 60 percent of the volume of loans. In particular, they find a positive spillover effect of the MSLP: The more active participants seem to have made more C&I loans on their own as well.

We find that the cross-state variation in uptake can be explained by both the severity of a state's public health condition, specifically the number of COVID-19 cases, and the degree of mobility, which measures the de facto impact of COVID-19 on economic activity. These correlations remain significant even after we account for other state-specific characteristics, such as the size of a state's economy or population. Consistent with these findings, further analysis using a state-month panel shows that the within-state time variation of the uptake

of MSLP loans also varied with a state's public health and economic conditions. Specifically, the two factors seem to reinforce each other: The lower the mobility level, the more the number of loan submissions increased within a month or so after the number of COVID-19 infections rose.

The remainder of this paper is structured as follows. Section 2 discusses key aspects of the Main Street Lending Program and reports summary statistics of its uptake. Section 3 presents our core empirical findings. Section 4 concludes.

# 2 Summary Statistics of the Main Street Lending Program

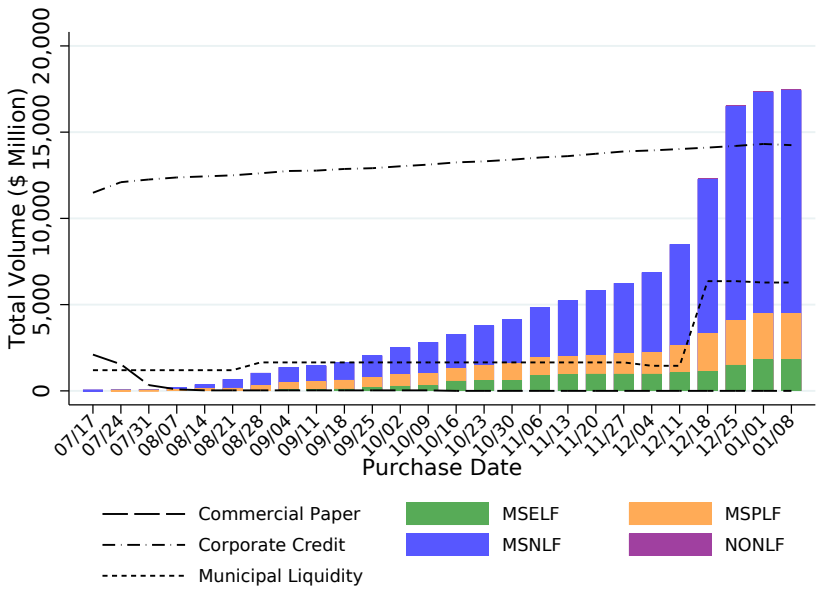
Main Street loans were available to for-profit businesses with as many as 15,000 employees or with $5 billion or less in revenue.[1] A range of loan types and features were designed to meet the diverse needs of small and mid-sized firms. Secured or unsecured new loans of as much as $35 million were available for borrowers with an *adjusted* debt-to-EBITDA ratio as high as 4 (inclusive of the Main Street loan). "Priority loans" or "expanded loans" were available for borrowers with an adjusted debt-to-EBITDA ratio as high as 6 in amounts of as much as $50 million or $300 million, respectively, but these loan types came with more stringent security and bankruptcy priority requirements. Common to all facilities and borrowers were an interest rate of LIBOR plus 300 basis points (bps) and a maturity of five years, as well as the deferral of principal payments and interest payments for two years and one year, respectively. The minimum loan size was initially set at $250,000 for all the facilities, but it was later lowered to $100,000 in October to better accommodate the very small businesses. Moreover, all facilities required the lender, which collected an origination fee and loan servicing fees, to retain 5 percent of the loan balance, while the Main Street Special Purpose Vehicle (SPV) purchased the remaining 95 percent at par. Figure 4 in the Appendix summarizes key parameters of the three for-profit facilities.[2]

When the MSLP ended on January 8, 2021, it was the largest debt-purchase facility and the fastest growing in the second half of 2020 among all Federal Reserve debt-purchase facilities established in response to the COVID-19 pandemic, as indicated in Morgan and Clampitt (2021). The program extended a total of $17.5 billion in credit to nearly 2,500 borrowers across 49 states, the District of Columbia, and two US territories. Figure 2 plots

[1] In addition, the Fed established facilities to support nonprofit organizations. Those facilities, however, received little uptake, and so we do not consider them in this article.

[2] The Main Street term sheet parameters reported in the figure reflect the latest values, as several parameters, including loan size limits, were changed over the life of the program.

Figure 2: Cumulative Volume of Loans




*Note:* MSELF stands for Main Street Extended Loan Facility; MSNLF stands for Main Street New Loan Facility; MSPLF stands for Main Street Priority Loan Facility; and NONLF stands for Nonprofit Organization Loan Facilities (pooling loans in the New Loan and Extended Loan Facilities). *Sources:* Main Street public-release data as of February 9, 2021, and Federal Reserve H.4.1.

the cumulative weekly volume over the lifetime of the Main Street program, along with the volume over time for the other emergency credit facilities.[3] The volume of loans purchased by the MSLP grew more or less steadily over time through the end of November. The exception was a large acceleration in the last few weeks starting in early December, after the US Treasury Secretary announced that the program would not be renewed beyond December 31. The increase in uptake toward the end of the program's life made Main Street the largest of the Fed's four credit and liquidity facilities.[4] Because of the reasonably steady pace of loan submissions over much of the life of the program, our analysis of the factors influencing the MSLP loan uptake will focus more on the variation across states. We will explore how the uptake of Main Street loans depended on each state's economic condition and the pandemic-related public health indicators, as well as cross-state differences in containment policies implemented to address the spread of COVID-19.

[3]The figure depicts the *outstanding principal volume* of loans extended to the following emergency lending facilities: Commercial Paper Funding Facility, Corporate Credit Facilities, and Municipal Liquidity Facility. The latest outstanding volume of asset purchases has fallen for the facilities, including Main Street, due to repayment.

[4]Bräuning and Paligorova (2021) show that the volume of loans made under Main Street totaled about 60 percent of the volume of comparable loans originated by the largest banks while the program was operational, thereby adding substantially to the supply of credit to medium-sized and, especially, small borrowers.

Table 1: Total Main Street Lending Activity

| | | | | | Principal Loan Amount ($ Millions) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total Volume ($ Millions) | N. Loans | N. Borrowers | N. Lenders | Mean | Min | p10 | p25 | p50 | p75 | p90 | Max |
| All Facilities | 17,459 | 1,830 | 1,815 | 319 | 9.5 | 0.1 | 0.7 | 1.5 | 4.0 | 10.6 | 25.0 | 300.0 |
| MSELF | 1,805 | 26 | 26 | 16 | 69.4 | 10.0 | 11.0 | 22.0 | 40.5 | 90.0 | 148.0 | 300.0 |
| MSNLF | 2,695 | 616 | 608 | 149 | 4.4 | 0.1 | 0.4 | 0.8 | 2.0 | 4.5 | 10.0 | 35.0 |
| MSPLF | 12,917 | 1,173 | 1,166 | 258 | 11.0 | 0.1 | 1.1 | 2.4 | 6.0 | 14.8 | 30.0 | 50.0 |
| NONLF | 42 | 15 | 15 | 13 | 2.8 | 0.2 | 0.4 | 0.6 | 2.5 | 5.0 | 5.0 | 8.5 |

*Note:* MSELF stands for Main Street Extended Loan Facility; MSNLF stands for Main Street New Loan Facility; MSPLF stands for Main Street Priority Loan Facility; and NONLF stands for Nonprofit Organization Loan Facilities (pooling loans in the New Loan and Extended Loan Facilities). *Source:* Main Street public-release data.

Table 1 summarizes the key statistics of the Main Street activity. Overall, the program approved the participation requests for 1,830 loans totaling $17.5 billion. About 74 percent of the uptake was concentrated in the Priority Loan Facility (1,173 loans totaling $12.9 billion), followed by participation in the New Loan Facility (616 loans totaling $2.7 billion) and the Extended Loan Facility (26 loans totaling $1.8 billion). Loan sizes were generally concentrated in amounts substantially below the program's maximum loan size limits, with a median loan size of $40.5 million in the Extended Loan Facility, $6 million in the Priority Loan Facility, and $2 million in the New Loan Facility. Loan size statistics also reveal that the vast majority of loans were much larger than the minimum requirement of $100,000. This is partly because the minimum requirement was lowered somewhat late in the program, leaving limited time for the smallest loans to be underwritten. This result is likely also an outcome of the MSLP's initial design goal of making the program appeal more to mid-sized firms.

The geographic coverage of the Main Street program was broad: Participation requests were submitted by borrowers from 49 states (all but Maine), the District of Columbia, and two territories (Puerto Rico and US Virgin Islands). Table 4 in the Appendix shows that most of the uptake was concentrated in firms from Texas ($3.1 billion), Florida ($2.1 billion), and California ($2.1 billion). When the volume is scaled relative to the size of the state economy, the top three states by uptake per dollar of gross state product are Oklahoma, Arkansas, and Missouri. Table 4 also reports state-level information on economic activity and the spread of COVID-19, indicating substantial heterogeneity across states.

The evaluation of banks' participation in the MSLP is outside the scope of this paper, in part because Minoiu, Zarutskie, and Zlate (2021) already provide an in-depth analysis of the patterns of lender participation in the Main Street facilities. Nevertheless, it is worth noting that banks' participation was somewhat limited. About 600 banks registered for the program, but only about half originated loans that were subsequently sold to the Main Street

Special Purpose Vehicle.

# 3 Local Conditions and MSLP Loan Uptake

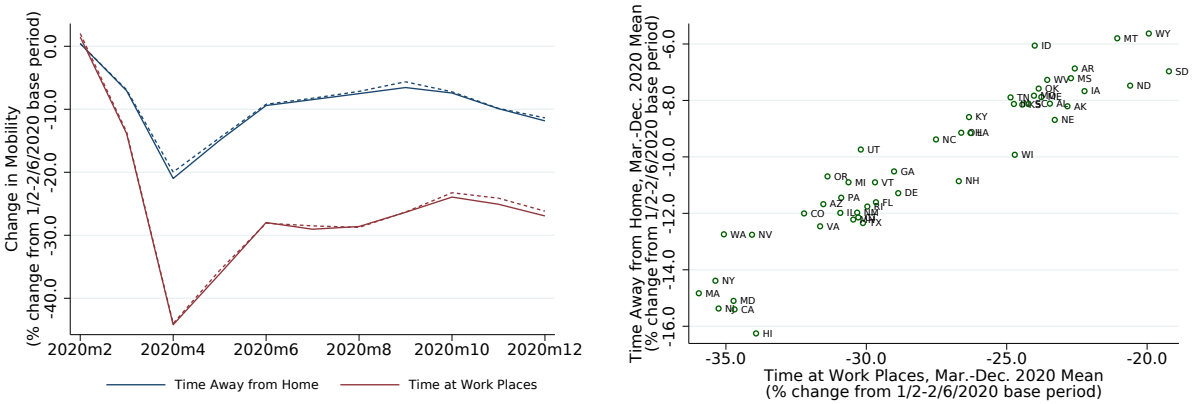
The exponential growth of COVID-19 case counts in early 2020 resulted in unacceptable numbers of hospitalizations and deaths, prompting many states to impose strict lockdown measures. These measures forced much of the service sector to essentially shut down. A sharp decline in mobility—the movement of people between different places—occurred concurrently with the abrupt contraction of economic activity. In May 2020, after the stringent containment measures had slashed the case counts and brought the hospitalization and death rates under control, many states reopened their economy, partially or even fully. However, when infection rates started to climb again in the summer as a result of the easing of the public health restrictions, mobility fell back to lower levels, even in states that did not reimpose the containment measures. Mobility levels reflect the de facto degree of restraint on economic activity, with or without de jure rules imposed by the state or local governments limiting in-person commercial activity. That is, when the pandemic conditions deteriorated, people reduced social interactions regardless of whether such interactions were explicitly forbidden. We thus use mobility indicators to measure the effective restraint on business activity in a locale.

To measure mobility, we use indexes from Google's COVID-19 Community Mobility reports.[5] These indexes are constructed using compiled mobile phone data, and they measure percentage changes in the number of visitors to and lengths of stay at categorized places relative to the baseline period of January 2 through February 6, 2020. Figure 3, Panel (a), shows the across-state median and mean of the percentage changes (relative to the baseline period) for two important mobility measures: time away from home and time at workplaces. The data indicate a strong decline in mobility that started in March 2020 and reached its nadir in April 2020, when time at workplaces was down by more than 40 percent across states and time away from home was down by about 20 percent. The figure clearly shows that the patterns are nearly the same for the mean and median across states. Mobility began to recover in May 2020 and continued to rebound gradually through the summer months, but it remained substantially depressed relative to the pre-pandemic baseline period. A second decline started about October 2020, coincident with the rising numbers of COVID-19 cases and deaths at the beginning of the second wave of the pandemic.

Panel (b) shows the cross-state correlation between time at workplaces and time away

[5]See Google COVID-19 Community Mobility Reports, `https://www.google.com/covid19/mobility/`, obtained from Opportunity Insight's website (see Chetty et al. 2021).

Figure 3: Mobility during the COVID-19 Crisis.




(a) Average Change in Mobility

(b) Cross-State Variation

*Note:* Panel (a) reports, for time away from home and time at workplaces, the monthly cross-state average change in mobility relative to the period from January 2 through February 6, 2020 (solid lines). Dashed lines show the medians. Panel (b) shows a scatter plot of the changes in the mobility measures. In Panel (b), the District of Columbia is omitted from the scatter plot. Its time away from home mean is –19.7 and time at workplaces mean is –48.5. *Sources:* Googles COVID-19 Community Mobility and authors' calculations.

from home. Each data point in the scatter plot represents the average mobility decline from March through December 2020 for a given state. The figure highlights a close correlation between the two measures across states (in addition to the close correlation over time). Moreover, the figure reveals substantial cross-state heterogeneity in mobility, with the reduction in time at workplaces ranging from 20 to 35 percent and the reduction in time away from home ranging from 6 to 16 percent. Thus, despite the large common trend, there is cross-sectional variation that we exploit in our analysis and relate to cross-state uptake of the MSLP.

## 3.1 MSLP Uptake across States

To understand the relationship between COVID-19–induced changes in state-level mobility and Main Street uptake, we estimate the following cross-state regression:

$$\text{Log}(\text{Total Volume}_s) = \beta \times \Delta\text{Mobility}_s + X_s'\gamma + \epsilon_s, \tag{1}$$

where Log(Total Volume) is the total Main Street uptake by firms from state $s$, $\Delta$Mobility is the average percentage change in mobility from March through December 2020 in state $s$ relative to the average mobility levels from January 2 through February 6, 2020, in state

$s$. As before, we focus on the mobility measures based on time away from home and time at workplaces. The vector $X_s$ contains a set of state-level control variables including the logarithm of cumulative COVID-19 cases through the end of 2020, the logarithm of 2019 population count, and the logarithm of 2019 state GDP.[6] To account for the unusually large uptake by two states, we also include two dummy variables that equal 1 for Florida and for Texas, respectively, and 0 otherwise.[7] We base our inference on heteroskedasticity-robust standard errors.

Table 2 presents the estimation results. Column (1) shows that there is an unconditional correlation between the reduction in time at workplaces and total Main Street uptake. States with a larger reduction in time spent at workplaces experience significantly more uptake. In column (2), we find that this correlation is robust to the inclusion of a variety of other factors that can explain why uptake may correlate with the change in mobility, thereby potentially biasing our estimate. The results show that while our coefficient estimate indeed is somewhat smaller in absolute value, its standard error also decreases, leading to higher statistical significance. The point estimate indicates that a 1 percentage point decline in mobility is associated with a 5.5 percent larger Main Street uptake. We also find that the number of COVID-19 cases, conditional on the state's population, is significantly related to uptake. A 1 percent increase in the number of state cases results in a 1 percent increase in uptake volume. Columns (3) and (4) show similar results based on the mobility measure computed from time away from home.

## 3.2 MSLP Uptake across States and over Time

Even though our focus is on the cross-state variation in Main Street uptake, we also explore how the uptake by each state evolved over time depending on the local economic and public health situations. Specifically, we estimate the following panel regression:

$$\begin{aligned}\text{Log}(\text{Total Volume}_{s,t}) = \alpha_s + \beta \times \Delta\text{Mobility}_{s,t} + \delta \times \text{Covid Case Rate}_{s,t-2} \\ + \lambda \times \Delta\text{Mobility}_{s,t} \times \text{Covid Case Rate}_{s,t-2} + \epsilon_{s,t},\end{aligned} \tag{2}$$

As in the cross-state regressions above, the percentage change in mobility from the pre-COVID baseline is used as a composite measure of the level of economic activity in state $s$

[6] Using log(COVID cases per capita) would be equivalent to imposing the restriction that the coefficients on log(cases) and log(population) have equal magnitude but opposite signs.

[7] Results are robust to dropping these two state dummy variables; that is, Florida and Texas do not drive our results.

Table 2: State-Level Main Street Uptake and Change in Mobility

| | Dep. Var.: (Log) Total Volume | | | |
|---|---|---|---|---|
| | GPS Time at Workplaces | | GPS Time Away from Home | |
| | (1) | (2) | (3) | (4) |
| Change in Mobility | -0.092* | -0.055** | -0.164* | -0.099* |
| | (0.051) | (0.025) | (0.089) | (0.059) |
| Log(COVID cases) | | 1.089*** | | 1.087*** |
| | | (0.318) | | (0.301) |
| Log(State GDP) | | 0.395 | | 0.368 |
| | | (0.481) | | (0.467) |
| Log(Population) | | -0.367 | | -0.329 |
| | | (0.463) | | (0.462) |
| FL | | 0.846*** | | 0.784*** |
| | | (0.200) | | (0.210) |
| TX | | 0.789*** | | 0.683*** |
| | | (0.249) | | (0.239) |
| Constant | 2.304 | -6.745 | 3.200*** | -6.618 |
| | (1.453) | (4.184) | (0.956) | (4.369) |
| Observations | 50 | 50 | 50 | 50 |
| R-squared | 0.095 | 0.746 | 0.093 | 0.746 |

*Note:* The dependent variable is the logarithm of state-level uptake of Main Street loans. The independent variable, ΔMobility, is the average percentage decline in the Google mobility index from March through December 2020, relative to the pre-pandemic baseline from January 2 through February 6, 2020. Columns (1) and (2) are based on GPS time at workplaces as the mobility measure, while columns (3) and (4) are based on time away from home. State GDP and population are as of 2019. COVID Cases is the cumulative number of cases through December 2020. Robust standard errors are in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

in month $t$.[8] The term $\alpha_s$ accounts for the time-invariant component of uptake specific to a state, such as population differences across states. We consider two ways to account for it: 1) we use log gross state output in 2019 as in the cross-state regression above; and 2) we use state fixed effects to capture unobserved state-level heterogeneity more flexibly. A dummy variable is included for December 2020 to account for the surge in loan submissions at least partly in response to the announcement that the MSLP was to close on December 31, 2020.

[8]In unreported results, we find qualitatively similar results when we measure economic conditions using the change in the state unemployment rate from January 2020 to the month in which a loan request was submitted.

A state's public health situation is measured using the COVID-19 case rate, lagged by one month or two months to account for the average pace of disease progression from infection to its grim consequences.[9] Since the observed case rate depends not on only the actual (but unobserved) severity of COVID-19 infections (call it the true case rate) but also on how many tests a state conducts—in that the fewer tests a state runs, the fewer cases it would tend to discover—we also consider an alternative and presumably more accurate approximation of the true case rate in a state. We term it the positivity-adjusted case rate, which is computed as the product of the raw case rate and the positivity rate of COVID-19 tests.[10] This measure would assign a higher rate to a state if it has a higher test positivity rate for any given case rate observed in the data. Moreover, we consider the possibility that MSLP uptake may have become more sensitive to a deterioration of COVID-19 statistics when local commercial activity was already anemic through an interaction term between the mobility index and the disease severity. The intuition is that the worse the local economy already was, the more impaired firms' ability to cope with the blow (such as further diminished income or additional expenses) from a more severe COVID-19 situation. This nonlinear effect can also stem from expectations of a higher probability of government containment orders to follow and thus further contractions in income to come.

The panel regression's coefficient estimates are reported in Table 3. The first three columns use (log) 2019 state gross output to account for the state-specific component of uptake, while the last three columns use state fixed effects.[11] Column (1) shows that, as would be expected, MSLP uptake tended to rise following a decline in time at workplaces, signaling a contraction in local commercial activity. However, this variable by itself becomes insignificant once (log) 2019 state output is included (columns [2] and [3]).[12] As found in the cross-state regressions above, state output in 2019 is significantly positively associated with MSLP uptake. Column (2) shows that MSLP loan submissions tend to rise one month after a rise in the rate of COVID-19 infections in a state. An additional COVID-19 case per 1,000 people leads to a 2 percent increase in MSLP loans two months later (column [3]).[13] Column

[9]We find that MSLP loan submissions are also positively correlated with the COVID-19 death rate in the same month. The epidemiology finding is that the death rate tends to rise four to six weeks after a surge in the infection rate.

[10]The positivity rate is defined as the number of positive test outcomes relative to the total number of tests.

[11]A dummy variable is thus included for Florida in the first three regressions to account for its outsized uptake, but the results are not sensitive to its inclusion.

[12]This suggests economic conditions since the onset of COVID-19 are on average correlated with the size of output at the state level. We indeed find that larger states, mostly those on the two coasts, tend to have suffered greater declines in mobility, in part because they were the victims of the first wave of the COVID-19 surge.

[13]In fact, the increase in uptake is even slightly higher two months after a rise in the case rate (omitted for brevity). Both the mobility index and COVID-19 case rate are demeaned and thus the coefficient on each

Table 3: State-Month Main Street Uptake and Local Conditions

| | Dep. Var.: (Log) Total Volume | | | | | |
|---|---|---|---|---|---|---|
| | | | | State Fixed Effects | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| GPS Time at Workplaces, Lag 1 Mon. (Centered) | -0.043** | 0.008 | -0.007 | 0.021 | 0.020 | 0.021 |
| | (0.020) | (0.021) | (0.021) | (0.041) | (0.041) | (0.041) |
| COVID Case Rate, Lag 1 Mon. (Centered) | | 1.071** | | | 0.921 | |
| | | (0.512) | | | (0.661) | |
| Time at Workplaces × COVID Case Rate, Lag 1 Mon. | | -0.168*** | | | -0.136** | |
| | | (0.060) | | | (0.064) | |
| Positivity-Adjusted Case Rate, Lag 1 Mon. (Centered) | | | 0.177*** | | | 0.145 |
| | | | (0.055) | | | (0.089) |
| Time at Workplaces × Positivity-Adjusted Case Rate, Lag 1 Mon. | | | -0.020*** | | | -0.017* |
| | | | (0.006) | | | (0.009) |
| Log(State GDP) | | 0.800*** | 0.793*** | | | |
| | | (0.116) | (0.113) | | | |
| FL | 2.142*** | 1.159*** | 1.046*** | | | |
| | (0.381) | (0.383) | (0.377) | | | |
| TX | 1.957** | 0.612 | 0.441 | | | |
| | (0.777) | (0.776) | (0.765) | | | |
| December | 1.740*** | 1.616*** | 1.578*** | 2.038*** | 1.761*** | 1.742*** |
| | (0.232) | (0.250) | (0.217) | (0.169) | (0.308) | (0.290) |
| Constant | 2.748*** | -1.668** | -1.559** | 2.891*** | 3.045*** | 3.099*** |
| | (0.120) | (0.675) | (0.664) | (0.104) | (0.132) | (0.144) |
| Observations | 179 | 179 | 179 | 174 | 174 | 174 |
| R-squared | 0.317 | 0.493 | 0.498 | 0.648 | 0.657 | 0.659 |

*Note:* The dependent variable is the logarithm of state-by-month uptake of Main Street loans. The independent variable ΔMobility is the percentage decline in Google mobility index time at workplaces in the month preceding the loan submission relative to the pre-pandemic baseline. Columns (2) and (3) use (log) 2019 gross state output, while columns (4) through (6) use state fixed effects to account for the time-invariant component of state-level uptake. COVID Case Rate is measured in the month or two months preceding the loan submission. Robust standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

(3) shows that the positivity-adjusted case rate has somewhat greater explanatory power, likely because it is a more accurate measure of the severity of infections, as conjectured.

Moreover, the impact of local economic conditions and disease severity seem to reinforce each other: MSLP loan submissions would rise more following a given increase in infection rates if the local mobility measure were lower. Specifically, MSLP submissions would rise an additional 0.3 percent in response to a given unit increase in the COVID-19 case rate when the mobility index is 1 percent lower. The qualitative pattern remains when state fixed effects are used to better account for unobserved heterogeneity across states (columns [4] through [6]). The state fixed effects weaken the explanatory power of the COVID-19 case rate by itself, as would be expected. However, the interactive effect between mobility and the COVID-19 case rate proves fairly robust.

can be interpreted as if it were without the interaction term.

# 4 Concluding Remarks

The Main Street Lending Program provided broad support to mostly medium-sized businesses. The program extended more than $17.5 billion in loans to nearly 2,500 companies across 49 states, the District of Columbia, and two US territories. Moreover, we find evidence that the MSLP directed more credit to places with more dire need and likely also at times when credit was needed more. In particular, borrowers located in states that suffered more severe declines in economic activity (as reflected in deeper reductions in mobility) obtained more funding support from Main Street. In addition, businesses located in states where the economy was more adversely affected by COVID-19 increased their borrowing more when a state experienced a higher infection incidence. These findings suggest that the Main Street program was able to achieve one of its key objectives: providing liquidity support for firms in areas where the pandemic's impact was more acute in terms of both the public health situation and the restraints on economic activity due to government-imposed as well as voluntary restrictions on mobility. Whether that funding support was sufficient to prevent viable businesses from failing due to the pandemic shock and whether the funding will help them to recover more quickly or more fully as the economy normalizes in the coming months remain questions for future research.

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# Appendix

Table 4: State-Level Breakdown of Main Street Uptake

| | N. Loans | Total Volume ($ Million) | Total Volume/GDP (Thousand) | Total Volume/Population |
|---|---|---|---|---|
| Alabama | 7 | 183.8 | 0.8 | 37.5 |
| Alaska | 4 | 12.2 | 0.2 | 16.9 |
| Arizona | 21 | 274.2 | 0.7 | 37.7 |
| Arkansas | 18 | 268.3 | 2.0 | 88.9 |
| California | 216 | 2,057.2 | 0.7 | 52.1 |
| Colorado | 31 | 352.8 | 0.9 | 61.3 |
| Connecticut | 18 | 266.9 | 0.9 | 74.9 |
| Delaware | 7 | 108.4 | 1.4 | 111.3 |
| District of Columbia | 6 | 57.0 | 0.4 | 80.8 |
| Florida | 376 | 2,098.7 | 1.9 | 97.7 |
| Georgia | 29 | 593.2 | 1.0 | 55.9 |
| Hawaii | 2 | 24.5 | 0.3 | 17.3 |
| Idaho | 3 | 36.6 | 0.5 | 20.5 |
| Illinois | 46 | 526.8 | 0.6 | 41.6 |
| Indiana | 18 | 246.2 | 0.7 | 36.6 |
| Iowa | 9 | 70.4 | 0.4 | 22.3 |
| Kansas | 18 | 217.3 | 1.3 | 74.6 |
| Kentucky | 16 | 153.7 | 0.7 | 34.4 |
| Louisiana | 52 | 346.9 | 1.3 | 74.6 |
| Maryland | 15 | 140.8 | 0.3 | 23.3 |
| Massachusetts | 41 | 478.5 | 0.8 | 69.4 |
| Michigan | 35 | 258.0 | 0.5 | 25.8 |
| Minnesota | 51 | 294.5 | 0.8 | 52.2 |
| Mississippi | 6 | 116.9 | 1.0 | 39.3 |
| Missouri | 38 | 653.4 | 2.0 | 106.5 |
| Montana | 1 | 0.8 | 0.0 | 0.8 |
| Nebraska | 9 | 62.1 | 0.5 | 32.1 |
| Nevada | 22 | 176.6 | 1.0 | 57.4 |
| New Hampshire | 8 | 41.7 | 0.5 | 30.7 |
| New Jersey | 44 | 437.7 | 0.7 | 49.3 |
| New Mexico | 6 | 33.9 | 0.3 | 16.2 |
| New York | 56 | 697.5 | 0.4 | 62.7 |
| North Carolina | 14 | 193.2 | 0.3 | 18.4 |
| North Dakota | 5 | 22.8 | 0.4 | 29.9 |
| Ohio | 29 | 395.5 | 0.6 | 33.8 |
| Oklahoma | 71 | 581.1 | 2.8 | 146.9 |
| Oregon | 12 | 77.7 | 0.3 | 18.4 |
| Pennsylvania | 52 | 406.7 | 0.5 | 31.8 |
| Puerto Rico | 5 | 73.1 | . | . |
| Rhode Island | 2 | 53.8 | 0.8 | 50.8 |
| South Carolina | 6 | 12.7 | 0.1 | 2.5 |
| South Dakota | 15 | 41.2 | 0.8 | 47.3 |
| Tennessee | 22 | 218.4 | 0.6 | 32.0 |
| Texas | 246 | 3,103.8 | 1.6 | 107.0 |
| Utah | 25 | 296.2 | 1.6 | 92.4 |
| Vermont | 1 | 1.0 | 0.0 | 1.6 |
| Virgin Islands | 1 | 2.1 | . | . |
| Virginia | 35 | 183.0 | 0.3 | 21.4 |
| Washington | 35 | 249.7 | 0.4 | 32.8 |
| West Virginia | 4 | 68.0 | 0.9 | 37.9 |
| Wisconsin | 17 | 173.6 | 0.5 | 29.8 |
| Wyoming | 4 | 17.8 | 0.4 | 30.8 |

Figure 4: Overview of Main Street For-Profit Facilities

| | Characteristics of Main Street *For-Profit Business* Loan Types | | |
|---|---|---|---|
| | **New Loan Facility** | **Priority Loan Facility** | **Expanded Loan Facility** |
| **Loan Term** | 5 years | | |
| **Principal Payments** | Principal deferred for two years. Years 3-5: 15%, 15%, 70% | | |
| **Interest Payments** | Deferred for one year | | |
| **Interest Rate** | LIBOR + 3% | | |
| **Loan Size** | $100,000 to $35 million | $100,000 to $50 million | $10 million to $300 million |
| **Maximum Combined Debt to Adjusted 2019 EBITDA** | 4 times | 6 times | 6 times |
| **Lender Participation Rate** | 5% | | |
| **Fed Participation Rate** | 95% | | |
| **Prepayment Allowed** | Yes, without penalty | | |
| **Business Size Limits** | 15,000 employees or fewer, or 2019 revenues of $5 billion or less | | |
| **Fees** | Origination and transaction fees may apply | | |

*Note:* Key term sheet parameters of for-profit business loans. Source: `www.bostonfed.org`.