

Designing the Main Street Lending Program: Challenges and Options

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1. Introduction

Unlike the 2008 financial crisis, the current economic crisis brought on by the COVID-19 pandemic reflects fundamental cash flow problems for many businesses as revenues have almost completely stopped. Businesses will need substantial financial resources—from previous saving, direct government grants, or credit—to pay bills, survive the shutdown, and be ready to rehire workers quickly and restart spending. Extending credit can help some businesses manage the near-term shortfall in revenues, restructure operations, and prevent unnecessary failures at a time when bankruptcies will be costly.

The Main Street Lending Program (MSLP) is set up to provide loans to small and mid-size firms and large below-investment-grade firms that were financially sound before the onset of the pandemic. The CARES Act authorizes the Federal Reserve to establish the program under its emergency authorities with capital provided by the U.S. Treasury.¹ However, the MSLP is a big step for the government, and a difficult one. Lending to risky firms is a significant challenge given U.S. aversion to government equity stakes in private businesses and the Fed's legal requirements to be secured to its satisfaction and to lend only to solvent firms.

The program was announced in April and has been revised twice in response to feedback. Domestic borrowers with fewer than 15,000 employees and less than \$5 billion in 2019 revenues are eligible to apply. Loans will be made by banks, and they will retain 5 percent of the loan and sell the remaining 95 percent to one of three Main Street facilities—the New Loan Facility, the Priority Loan Facility, and the Expanded Loan Facility (see table 4 below for details). These facilities vary by the type of loan they will accept, determined mainly by loan size, borrower leverage, and whether the loan is new or expands an existing loan. All Main Street loans have a five-year maturity, defer interest payments for one year, defer principal payments for two years, can be prepaid without penalty, and have a loan rate of LIBOR plus 3 percentage points. Borrowers commit to limits on executive compensation, shareholder distributions, and employment.

Small-to-mid-sized businesses that could borrow from the Main Street program are an important part of the economy. There are more than 111,000 firms with between 100 and 10,000 employees (Census Bureau, 2017), and they employ 48 million people, about 38 percent of the aggregate. These firms are more reliant on loans than public bond markets, and some are too large for the Payroll Protection Program (PPP) which provides SBA-guaranteed loans with possible forgiveness, or too risky for programs established by the Treasury and Fed to support investment-grade corporations that issue commercial paper and corporate bonds.

The Main Street program will only succeed if it actually provides credit directly to borrowers in need. The mere announcement that Main Street loans are available does not provide the same support to the loan market as the Commercial Paper Funding Facility (CPFF) does for the commercial paper market and the Primary Market Corporate Credit Facility (PMCCF) does for the corporate bond market. The CPFF and the PMCCF offer credit at a penalty rate to high-rated firms that have recently issued commercial paper, or that issue in the corporate bond and syndicated loan markets. By ensuring these firms access to credit even at a higher than normal market rate, they reduce rollover risk and risk spreads in the markets, even before any firms access the facilities. By contrast, because the potential borrowers under the MSLP differ very widely in credit quality, the program cannot provide a guaranteed backstop, and so does not ease credit conditions broadly.

The Main Street program purchases loan participations from banks, rather than providing low-cost funds to banks or providing loan guarantees. It is designed to encourage banks to make loans they might not make on their own, primarily by easing balance sheet constraints. We describe the economic challenges in designing a loan support program and evaluate the Main Street program in terms of how it

¹ See the descriptions of the programs at <https://www.federalreserve.gov/monetarypolicy/mainstreetlending.htm>.

manages significant asymmetric information, adverse selection, poor targeting, and moral hazard problems while protecting taxpayer funds. The calibration of design features requires a difficult balance, but banks and businesses to date are showing little interest in the existing program.² Banks generally say that these are loans they would make anyhow. Potential borrowers say the loans are too expensive and burdensome.

We propose some changes to increase usage of the program and its odds of success. While we believe that most of the recent changes to the original program go in the right direction, the current program could be made more attractive if loan terms were more tailored to credit quality, the rigidity of fixed debt repayments was reduced, and lenders received more compensation for taking additional risks.

- All Main Street loans have the same risk spread, regardless of borrower credit quality. We recommend that loans to borrowers with higher credit quality should have a lower spread than loans to borrowers that are more leveraged. Less-leveraged borrowers in the New Loan facility should pay a lower spread than more-leveraged borrowers. Moreover, these borrowers should have more streamlined documentation requirements.
- All loans have a maturity of five years, with payments of principal starting in the third year. We recommend that loans have longer maturities and more delayed repayments but with incentives for firms to repay earlier added. This change would prevent a hard debt repayment for firms that may need more time to reorganize and survive, especially given that great uncertainty remains about the path of the virus.
- The minimum loan size for the New Loan and Priority Loan Facilities is \$250,000. If the Fed and Treasury find that there are many small firms that either cannot access the PPP program or require additional support, we recommend they reduce the minimum loan size further. Such a change could also encourage smaller banks to participate in the program. The Fed has already reduced loan size twice, from an initial \$1 million.
- The bank participation share is 5 percent for all loans, regardless of borrower credit quality. We recommend that banks in some cases be allowed to extend program loans to riskier borrowers if they retain a larger share of the loan to demonstrate their confidence in the credit. The Federal Reserve recently eliminated such a trade-off in the Priority Loan facility, but we believe it should be reintroduced, creating greater flexibility in the program.
- Borrowers are required to make “commercially reasonable efforts to maintain its payroll and retain its employees.” We recommend that the program should ease or remove the constraints on borrowers’ behavior that would make it difficult for them to reorganize their businesses to respond to new supplier and customer behaviors in a post-COVID-19 economy. If constraints are required, policymakers should quickly clarify how “commercially reasonable” will be assessed, so that this uncertainty does not limit take-up.
- Banks get a loan origination fee, servicing fees, and 5 percent of the loan spread. However, the current fees do not appear to provide banks enough incentive to make loans they might not make anyway, given that the risk of Main Street loans will be highly correlated with their existing loans, which have already deteriorated as a result of the pandemic. We recommend that policymakers consider a higher level of fees to spur banks’ willingness to use the program. In addition, the program may need to provide additional compensation for loan workouts, particularly if the coronavirus weighs on the economy for longer than expected, increasing the need for banks to workout troubled loans.

² For example, some Senators raised concerns at a hearing on implementation of the CARES Act on June 2, 2020, that the Main Street program will not be used (see Ransom 2020). For similar concerns, see Mohsin and Scigliuzzo (2020) and Elliott, DePillis, and Kiel (2020).

These changes would pose additional risk to the funds that Treasury has provided to back this program, but we see those risks as likely justified in the current circumstances. Even with the recommended changes, the program may have limited demand, since many businesses need equity, not more credit, but equity cannot be provided in a lending program that would be offered by the Federal Reserve. In addition, banks may not want to make more loans without even greater protection, given the uncertain economic outlook. While the program could become more attractive to banks if the economy remains very weak and loan losses mount further, putting pressure on banks' balance sheet capacity, banks likely will still not be anxious to take on more risk in that scenario.

However, it is critical to support businesses now. The downturn is very deep, the risk of permanent harm to labor markets because of protracted high unemployment is high, and business activity is likely to resume more slowly than was thought when the CARES Act was signed. While the structure of the Main Street Program has significant benefits, particularly the use of the Fed to leverage Treasury capital, policymakers should be prepared for the possibility that an aggressive lending program consistent with the CARES Act may not be sufficient to help many businesses. In that case, Congress should be prepared to authorize other types of programs as well, such as loan guarantees or forgiveness, which combined with additional lending could better promote a more rapid recovery in employment and output and limit long-run damage to the economy.

The remainder of this paper proceeds as follows: Section II describes characteristics of potential MSLP borrowers and why private lending is not sufficient, Section III describes constraints for the Fed and Treasury, and information- and incentive-related challenges when designing a government lending program, and Section IV presents three alternative types of government programs to increase lending. Section V outlines the MSLP program and how it addresses the main design challenges, and Sections VI and VII present our assessment and recommendations to improve the odds of success.

2. Why a government program for these businesses?

The government may want to help provide credit for small and medium-sized firms, as well as larger firms that are not investment-grade, for the same reasons that it is providing support for small businesses (through the Paycheck Protection Program) and larger, investment-grade businesses (through the Fed's commercial paper and corporate bond programs). That is, many firms with large declines in revenue during the health emergency could fail and cut employment, which would slow the economic recovery.

Private lending may be insufficient in this case because the social benefits from a more robust recovery and fewer inefficient bankruptcies will exceed the private benefits to banks from more loans. Banks may be wary of lending more because they don't want to expand their balance sheets or because they do not want to increase risky loans. Moreover, the risk on such loans is highly correlated with that of other similar loans already on banks' books and this correlation is likely to be especially high, as the progress of the coronavirus will be an important driver of defaults on a wide range of both business and household credit.

We discuss below the employment and risk of potential Main Street borrowers, and reasons why private lending to them might be insufficient.

Employment of small- and medium-sized businesses. Businesses that might access the MSLP employ a significant fraction of the labor force. Data from the Census Bureau show that in aggregate there were 128.6 million employees in almost 6 million firms in 2017 (Table 1). The vast majority of the firms are small with fewer than 100 employees, and combined they employ 33 percent of the aggregate workforce. But there are about 111,000 firms that have between 100 and 10,000 employees each, and they collectively have 48 million employees, 38 percent of the aggregate. Annual payroll expenses at these firms represent 40 percent of the aggregate. That is, the set of firms that fall between very small

businesses, those with less than 100 employees and the very large firms with more than 10,000 employees, represent roughly 40 percent of employment and payroll. Note that these data can only approximate what firms are eligible for MSLP because data are not provided for firms with between 10,000 and 15,000 employees, and revenues of these firms are not available by number of employees.

While firms with between 100 and 500 employees are eligible for the PPP program, they may also be interested in a MSLP loan. These firms had an average annual payroll expense of \$9.9 million, so they could make use of a Main Street loan, given the minimum loan size of \$250,000. Their average payroll expenses are considerably higher than the average payroll of \$305,000 for firms with fewer than 100 employees. Indeed, the smaller firms may find PPP loans sufficient to their needs; the average PPP loan made is \$114,764, though 64 percent of the total number of loans were for less than \$50,000.³

Table 1. Firm Employment by Size⁴

Firm Employment Size	Number of Firms	Employment	Share of Employment	Annual Payroll (\$Th)	Share of Payroll	Payroll per Firm (\$th)
Total	5,996,900	128,591,812	100%	6,725,346,754	100%	1,121
<5	3,698,086	5,937,081		276,569,783		75
5 to 99	2,186,317	36,507,469		1,520,676,007		318
Subtotal < 100	5,884,403	42,444,550	33%	1,797,245,790	27%	305
100-499	92,358	18,111,531		914,291,189		9,899
500-999	10,082	7,000,139		369,884,610		36,688
1,000 to 2,499	5,887	9,042,640		520,748,082		88,457
2,500 to 9,999	3,070	14,253,746		889,750,821		289,821
Subtotal 100-9,999	111,397	48,408,056	38%	2,694,674,702	40%	24,190
10,000 +	1,100	37,739,206	29%	2,233,426,262	33%	2,030,388

Source: Statistics of US Businesses (SUSB), Census Bureau, 2017. SUSB total excludes the self-employed, employees of private households, employees in the railroad and agricultural production sectors, and most government employees.

Risk of potential Main Street borrowers. Data on the riskiness of the debt of small-to-mid-sized firms that might access the Main Street Program are fragmentary. But it is clear that these firms are much less risky than the smallest firms, those eligible for SBA-guaranteed loans, but riskier than firms that are rated investment-grade. Some of the larger firms that are not investment-grade that might want to access

³ While we don't know the characteristics of firms that received PPP loans, it appears they are mainly among the 5.88 million very small firms that would have fewer than 100 employees, with an average number of employees of 7 and average payroll of \$305,000. The number of PPP loans reached 4.45 million by May 23, 2020, for total funds of \$510.5 billion. In terms of the distribution of loan sizes, 64 percent of the total number of loans were less than \$50,000, another 30 percent were between \$50,000 and \$350,000, and only 6 percent were above \$350,000.

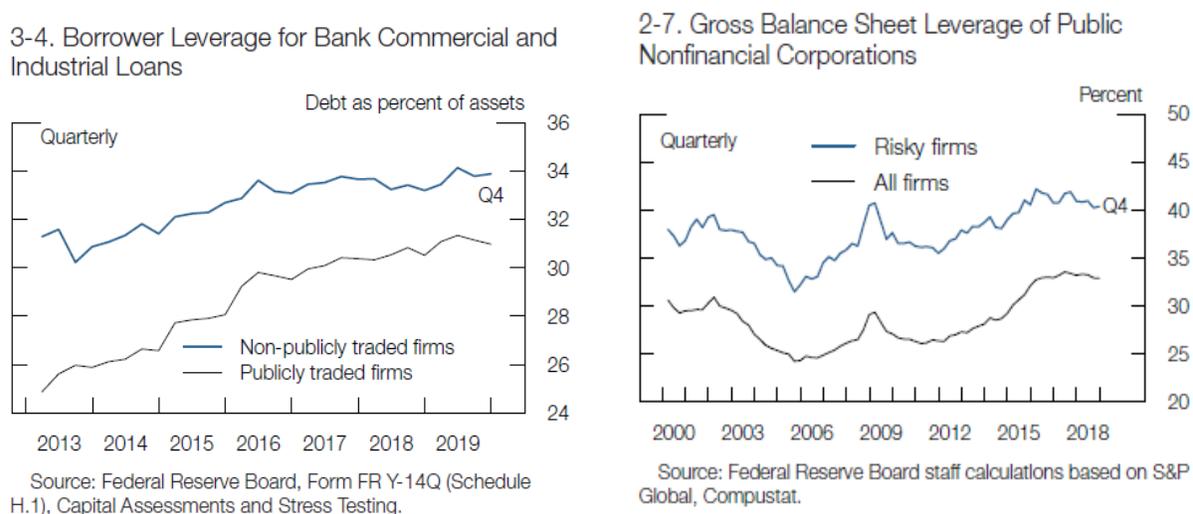
⁴ Table 1 and related text were revised to correct an error in the number of firms with between 100 and 10,000 employees.

the MSLP may be speculative-grade risks, which tend to have higher default rates than the small-to-mid-sized firms because they have a need and the ability to raise large amounts of debt.

Data on debt-to-asset ratios and failure rates reflect this risk profile. The Federal Reserve’s Financial Stability Report (May 2020) shows the debt-to-asset ratios of commercial and industrial (C&I) loan borrowers (from the banks that are required to undergo the Dodd-Frank stress tests, and hence file form FR Y-14Q). Borrowers that are not publicly traded can be used to approximate the borrowers that might be interested in Main Street loans (figure 1). As shown, these firms have somewhat higher debt-to-asset ratios than publicly traded firms that have C&I loans. The debt ratios of these firms have been rising in the past few years, though less rapidly than at publicly traded firms.

Comparing these ratios to those for all nonfinancial publicly traded companies, a debt-to-asset ratio of 34 percent in 2019 for non-public C&I loan borrowers is much lower than for speculative-grade firms, labeled as risky firms, which have had ratios of above 40 percent in recent years. These data suggest that many potential Main Street borrowers are less risky than speculative-grade firms but more risky than investment-grade companies.

Figure 1. Borrower leverage for Bank C&I loans and publicly-traded nonfinancial corporations



Source: Federal Reserve Board Financial Stability Report, May 2020 and May 2019.

Loan delinquency rates also suggest smaller business loans will have higher default rates than investment-grade bond issuers, but may have lower default rates than speculative-grade bond issuers. PayNet reports, based on data for C&I loans provided by a sample of commercial banks, that default rates for small businesses averaged about 3 percent over 2006-2019, higher than the 1.7 percent default rate on all C&I loans at commercial banks, which includes loans to large publicly-traded firms.

For comparison, the average default rate on investment-grade corporate bonds was 0.12 percent from 1981-2017, but was 4.3 percent for speculative-grade corporate bonds over the same period (Standard and Poor’s). This average default rate for speculative-grade firms is higher than that for loans to small-to-mid-size borrowers that would access the MSLP.

In addition, data from the Census suggest there is a wide range in risk characteristics in the category of small- to mid-size firms (table 2). The overall business failure rate peaked at 9.67 percent in 2009,

dominated by the nearly 5.9 million small firms, those with less than 100 employees, which had a failure rate of 9.86 percent in 2009. But the failure rates drop off dramatically as firms get larger. The average failure rate for businesses with between 100 and 500 employees was 0.99 percent in 2009, and it was only 0.35 percent for businesses with between 500 and 9,999 employees. These sharp distinctions by size group in 2009 are also evident for average failure rates during the twenty-year period 1994-2014.

Table 2. Business Failure Rates

Firm Employment Size	Number of Firms 2014	Failure rate 2009 (%)	Failure rate 1994-2014 (%)
Total	5,060,326	9.67	8.33
< 100	4,955,252	9.86	8.48
100 to 499	84,541	0.99	0.98
500 to 9,999	19,163	0.35	0.30
Subtotal 100-9,999	103,704	0.88	0.86

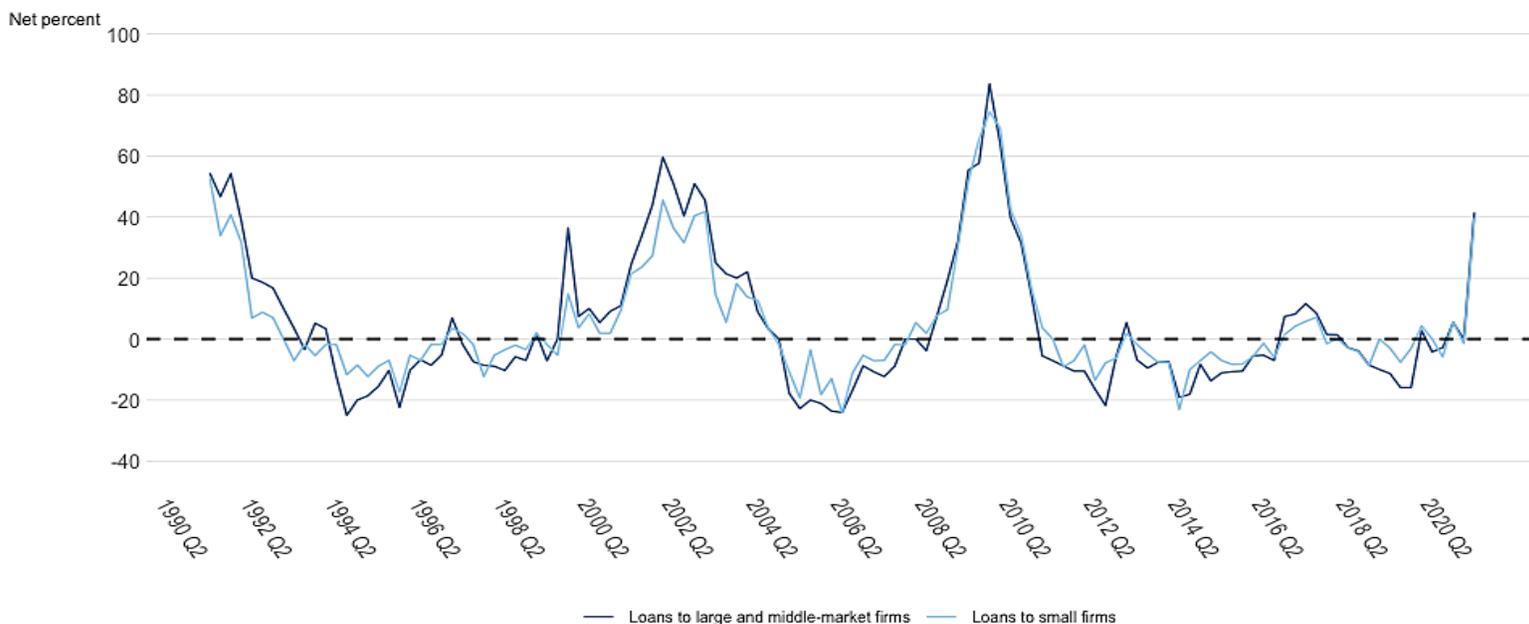
Source. Bureau of Census, Longitudinal Business Database 1977-2014.

Overall, the loan default and failure data suggest that lending to small- to mid-sized businesses with more modest needs for debt is less risky than lending to firms that issue speculative-grade bonds, though both are riskier than lending to investment-grade companies. Moreover, the losses on defaulted loans, which are generally more senior, tend to be lower than those on defaulted speculative-grade bonds.

Why might private lending not be sufficient? Given that these businesses are significant employers, policymakers would like to ensure that those that are harmed temporarily but can succeed after COVID-19 risks diminish have access to the credit they need to survive this difficult period. Unfortunately, however, a substantial fraction of banks have recently tightened their lending standards on loans to businesses, according to the April 2020 Senior Loan Officer Opinion Survey, suggesting that private lenders may not be willing and able to provide the needed credit (figure 2).

Figure 2. Lending standards for C&I loans at commercial banks

Net Percent of Domestic Respondents Tightening Standards for Commercial and Industrial Loans



Source: Board of Governors of the Federal Reserve System (US)

There are four reasons why policymakers may believe that lending by private lenders to these firms is likely to prove insufficient. The main reason is that the social benefits from a more robust economy and fewer inefficient bankruptcies will exceed the private benefits to banks and borrowers from more loans.⁵ That is, there are net positive externalities which arise by promoting a more rapid recovery in output and employment, given that levels currently are so depressed, and so encouraging a positive cycle of more spending and more employment. In addition, banks on their own do not capture the aggregate benefits to society if all banks lend more and a worse aggregate economic outcome is avoided. Moreover, additional lending may avoid a negative externality from having a large number of firms go bankrupt in a short interval. The bankruptcy system could be overwhelmed, and the result could be that some firms that could have been reorganized in bankruptcy end up in liquidation, with a consequent social loss.⁶

A second reason there may be insufficient lending is that banks' funding costs may be too high because of dysfunction in term funding markets. Higher funding costs limit the profitability of lending, and a government program that provides lower cost funding could be helpful. The spread of the 3-month LIBOR to OIS was elevated following the start of the pandemic, suggesting funding pressures for some banking institutions, although that spread has fallen back more recently.

A third reason to be concerned about access to credit is that banks may lack the risk appetite to make additional loans. Banks no doubt already are expecting a big increase in loan losses because of the

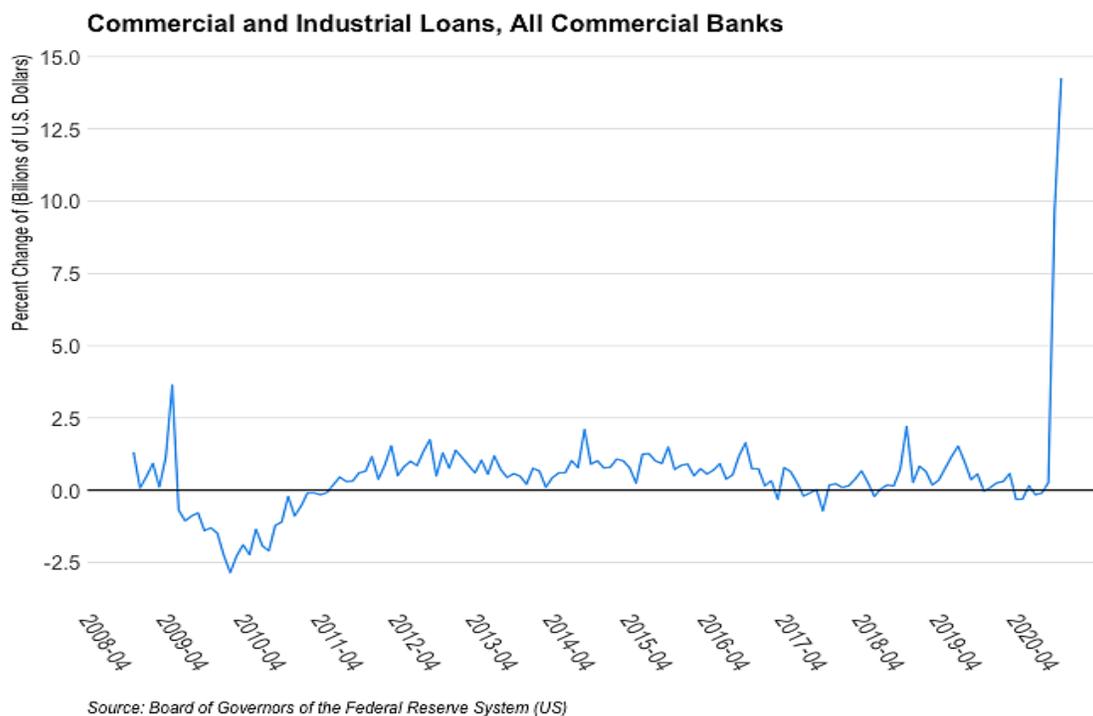
⁵ We refer to all lenders as “banks” here. The Fed’s Main Street Lending Program is only open to banking organizations. If bank balance sheet concerns are limiting banks’ willingness to lend, then allowing nonbanks to have access to the program could boost take up. Of course, the nonbank lenders would have to be vetted to be sure that they had the ability to do the underwriting (a bit like the PPIF evaluation process—see Treasury (nd)). However, given the many potential complications involved in the program, the Fed may see it as helpful to operate through entities overseen by the federal banking regulators.

⁶ Miller and Stiglitz (2010) have argued that in financial crises there may need to be a temporary “Super Chapter 11” to quickly deal with a large number of bankruptcies in a way that limits harm to the economy.

economic slowdown due to the virus, and the risks of new loans to borrowers harmed by the virus will be highly correlated with the existing risks. Banks may also be concerned about downside risks to loan quality given the elevated uncertainty about the economic growth trajectory, especially in the case of smaller and riskier firms. That uncertainty may make them even less willing to lend.

Finally, banks may face balance sheet constraints that limit their willingness to lend. The constraints could reflect capital regulation or pressures from creditors and counterparties. Banks have been operating with capital above regulatory and supervisory requirements, with the largest banks operating with a Tier 1 common equity (CET1) ratio of 12 percent on average in 2019, but loans rose sharply in March and April as businesses drew down existing credit lines (figure 3).⁷ Banks announced substantial loan loss provisions in the first quarter, though the full effects of loan losses on capital in coming quarters are still unknown. If a bank’s CET1 ratio were to fall by enough that it fell into its regulatory buffers, such as the capital conservation buffer and GSIB capital buffer, it would be required to cut dividends, share repurchases, and compensation.

Figure 3. Change in C&I loans at commercial banks



Moreover, new lending could push some of the largest banks into the next size category used to calculate the SIFI capital surcharge since size is one of the five components determining the size of the surcharge. Moving into the next category would raise its capital requirement by 50 basis points. This

⁷ The Federal Reserve estimates that business borrowers drew down significant amounts of their committed credit lines in March and April. C&I loans increased by about \$660 billion in those two months, and the Fed estimates that only a little more than half were by firms with investment-grade ratings. Federal Reserve Financial Stability Report, May 2020, Box “Risks Associated with Banks’ Corporate Credit Exposures through Credit Lines.”)

nonlinear effect may restrain banks' willingness to lend to marginal customers. As a consequence, banks may be unwilling to meet the demand for credit even from less risky firms.⁸

3. Challenges when designing a business lending program

The design of a program to support bank lending to businesses in the current health crisis can be thought of as the solution to a constrained maximization problem. The objective is to increase loans to borrowers that can survive the health crisis and succeed after the crisis passes, but that would not otherwise be able to get a loan in the current environment. The constraints on the program include the legal restrictions on the Federal Reserve's emergency lending under section 13(3) of the Federal Reserve Act, as well as the ability and willingness of the Federal Reserve and Treasury to absorb losses in the conduct of the program. If policymakers are willing to take on more risk of loss, then they are more likely to succeed in boosting lending to the desired borrowers. The problem is complicated, however, by several information-related problems that policy makers face, including asymmetric information, adverse selection, inefficient targeting of the support, and moral hazard.

Constraints on the Federal Reserve and Treasury. Section 13(3) of the Federal Reserve Act puts a number of conditions on the ability of the Federal Reserve to operate an emergency lending program. These conditions include (Federal Reserve 2020a):

- The circumstances must be “unusual and exigent;”
- The program must be approved by the Secretary of the Treasury;
- Eligibility for the program must be “broad-based,” which the Federal Reserve has judged to mean that the program is open to at least five firms (Federal Reserve, 2015);
- Program borrowers must be “unable to secure adequate credit accommodations from other banking institutions;”
- Borrowers under the program must be solvent, and program lending cannot assist the borrower in avoiding bankruptcy;
- Loans under the program must be “[e]ndorsed or otherwise secured to the satisfaction of the [lending] Reserve Bank” and the Fed must take steps to ensure that the “security for emergency loans is sufficient to protect taxpayers from losses.”

In addition, the CARES Act requires that loans made under 13(3) programs in the current crisis cannot be forgiven. This requirement sets the 13(3) lending apart from the Paycheck Protection Program because PPP loans are intended to be essentially grants. With no loan forgiveness allowed, the 13(3) loans will be much less expensive for the government, but also much less attractive for the borrowers.

The first three of the 13(3) conditions are clearly satisfied in the current circumstances. The fourth is satisfied by a Fed requirement that borrowers certify their difficulty in obtaining credit from sources other than the Federal Reserve, and the fifth condition should be satisfied by any program aimed at firms that can survive the crisis if they obtain credit, which is the aim of the program. The final condition poses

⁸ Note that balance sheet constraints could be eased, at least partly, with regulatory changes. Indeed, federal regulators have provided some temporary changes in regulation to address such constraints. Leverage ratios for BHCs and bank subsidiaries were just relaxed, by permitting the deduction of Treasury securities and deposits at the Fed from exposure measures. In addition, under the new stress test capital buffer, they are not included as a minimum regulatory requirement. Also, loans under the MMLF and PPPLF are excluded from leverage ratio calculations. However, while regulators can take steps to ease these constraints, they cannot make banks lend.

greater difficulty, since business loans involve significant risk, as noted earlier, and that risk is presumably increased in the current circumstances. However, the Congress, in the CARES Act, provided the Treasury with \$454 billion that it can use to provide security for loans made under the Federal Reserve's 13(3) lending programs. The decision as to how much capital to allocate to each lending program is up to the Treasury Secretary, who has the authority to allocate the funds authorized in the CARES Act.

The Treasury has considerable influence over an emergency lending program because the Fed must obtain the permission of the Treasury Secretary to establish any emergency lending program under section 13(3) and because the decision by the Treasury Secretary to allocate capital to a lending program constrains the size of the program given the 13(3) conditions, and allows the Treasury Secretary to condition the provision of capital on program terms that he judges acceptable, given his willingness to put the funds allocated at risk. Thus far, Treasury Secretary Mnuchin has indicated that he has only a limited tolerance for possible losses. In April, the Secretary noted that some of the Fed's programs would make money while others would lose money, but he indicated that, across the programs, "in a base case scenario...we recover our money." He added that "If Congress wanted me to lose all the money, that money would have been designed as subsidies and grants as opposed to credit support" (Davidson and Rubin 2020). At a subsequent Congressional hearing, however, the Secretary seemed somewhat more willing to risk taking losses, stating that "our intention is that we expect to take some losses on these facilities...That is our base case scenario" (Timiraos and Davidson 2020). Based on these comments, the Secretary appears to be willing to commit capital to a program with a modest probability of taking losses, but he appears averse to committing tax payer funds to back a program that is highly likely to have significant losses. Given the riskiness of business lending, particularly to small and medium-sized firms, this aversion to losses places significant constraints on the design of a program to support such lending.

In part, expectations for losses on 13(3) lending programs in this crisis may reflect the outcome following the financial crisis of 2007-09. In that period, the Federal Reserve extended \$600 billion of loans under Section 13(3) of the Federal Reserve Act. All of the loans were repaid in full with interest. As a result, the Fed actually made \$9 billion on its broad-based emergency lending programs (Federal Reserve 2010). For the Troubled Assets Relief Program (TARP), the government earned \$29.5 billion from its commitments of \$269.6 billion to financial firms and the credit market programs (Liang, McConnell, and Swagel, 2020).

However, the current situation is very different. In 2007-2009, the main problem was a loss of confidence in the financial sector and a consequent run on virtually all forms of short-term wholesale funding. In such a situation, the Federal Reserve could, by committing sufficient funds, slow and ultimately reverse the runs, and as confidence returned, the loans made by the Fed would be repaid. By contrast, the current situation is characterized by a health crisis that is forcing workers to stay home and businesses to close. The result is a massive loss of revenue for many businesses that is likely to leave many of them insolvent once the health crisis passes. Because the Federal Reserve can only provide credit, and not transfers, there are many businesses that the Fed's programs cannot help. As a consequence, aggressive lending is likely to lead to significant losses in this case.

Information- and incentive-related challenges. In addition to the legal and financial constraints on the Fed's 13(3) lending, a business lending program must be designed to address four information- and incentive-related challenges. First, there is the problem of asymmetric information. Borrowers have private information about their prospects—for example, their likely viability once the coronavirus has ebbed—that the Federal Reserve and Treasury do not have. For larger public companies, considerable information can be obtained at relatively low cost, but for smaller and medium-sized firms, there is little information that is publicly available. Banks, through their customer relationships and long experience underwriting business loans, can make well-informed judgements about the outlook for potential borrowers. By contrast, the Federal Reserve and the Treasury have little experience in this area, and so a business lending program that requires the Federal Reserve and the Treasury to do the loan underwriting

is likely to have a high level of losses. As a consequence, it may be beneficial to design the program to incentivize banks to participate and provide the loan underwriting needed to limit risk.

However, using banks to do the underwriting of program loans could lead to a second problem involving the behavior of banks—adverse selection. Specifically, banks may have an incentive to keep lower-risk loans on their own books and only pass to the program those loans that are high risk. Within limits, such behavior is desirable, since it should help provide additional credit to the intended firms. However, if the program design is not calibrated appropriately, banks may not have an incentive to limit the risk of the loans that are made under the program, imposing very high losses on the Fed and the Treasury without a compensating macroeconomic benefit. Moreover, if the spread on program loans is very wide, then only very risky borrowers will be willing to participate, which could also result in excessive losses.

Some program designs, perhaps responding to the possibility of adverse selection, could suffer from a third problem—poor targeting. In this case, the borrowers receiving loans under the program may be those that do not need the support to survive the health crisis and continue to operate. Instead, banks may make loans that they would have been willing to make without the program, but then pass them to the program to benefit from fees or other incentives. While such loans would likely be low risk, and so would not impose significant costs on the Treasury, they could crowd out loans to the firms for which the program is intended, reducing its effectiveness.

Finally, even an effective business lending program undertaken during the coronavirus crisis could lead to subsequent moral hazard. The Federal Reserve has been very public for many years in its concern that outsized borrowing by lower-rated nonfinancial firms and associated excesses in the syndicated loan market were resulting in fragilities that would act as an accelerant in a downturn. If the Federal Reserve now provides significant ex-post support to firms and lenders that it has been criticizing, managers and investors could take the lesson that the Fed's warnings about financial stability risks can be dismissed and that ex-post support for imprudent risk taking will be forthcoming in future downturns (Federal Reserve Financial Stability Report, May 2019). The result would be greater risks to financial stability once the current crisis has passed.

Of course, even highly leveraged firms have employees and suppliers, and so addressing the moral hazard problem by limiting lending to such firms would have macroeconomic costs. However, policymakers may judge that the larger, more leveraged firms are likely to have management with the skills and experience necessary to use the bankruptcy system to impose losses on creditors and continue in operation, making credit support less critical for such firms.

In addition, the Federal Reserve and Treasury may be concerned about reputational risk. Support provided to highly leveraged firms could be subject to considerable public criticism. Many firms leveraged up to make payments to owners, including private equity firms, rather than to invest in their businesses. The public may see support for such firms as undeserved and likely to encourage undesirable behavior in the future. Such concerns might be less substantial if the problems faced by the firms reflected illiquidity, and the lending was expected to be low risk in the end. However, that is not the case; the additional lending would be risky and would likely result in some highly visible—and in some cases very large—losses for the Federal Reserve and the Treasury.

The Federal Reserve and Treasury may want to consider, or may be required to consider under the CARES Act, some other considerations. For example, there might be social objectives, such as sustaining employment, that need to be incorporated into the program. In addition, to limit the need for government resources, borrowing firms could be required to limit dividends and share repurchases, and there could be

constraints on executive compensation as well.⁹ Such restrictions might make borrowers less willing to participate in the program, and employment requirements could slow a necessary reallocation of labor across sectors as a result of the health crisis. However, the restrictions might help with the targeting of program resources, since firms that were facing bankruptcy would presumably be willing to abide by the restrictions, while firms that could survive without a program loan would be less inclined to do so. Moreover, such restrictions may mitigate moral hazard concerns of helping borrowers that had taken on too much leverage before the pandemic.

4. The three main policy options

There are three main options for designing a government program to support business credit: subsidies, such as provision of low-cost funding, guarantees to limit downside risk, and direct lending by the central bank or government. All three have been used, but they differ in how they address the information and incentive challenges, and so they may be more or less helpful in a given circumstance (summary in table 3).

Table 3. Programs to Increase Lending

	Option		
	Subsidy	Guarantee	Participation
Helpful if bank lending is constrained by:			
• <i>High funding costs</i>	Yes	No	No
• <i>Limited risk appetite</i>	Some	Yes	No
• <i>Balance sheet constraints</i>	Some	No	Yes
Can address challenges caused by:			
• <i>Asymmetric information</i>	Yes	Partially	Partially
• <i>Adverse selection</i>	Yes	Partially	Partially
• <i>Targeting</i>	No	Requires calibration	Requires calibration
• <i>Moral Hazard</i>	Yes	Requires calibration	Requires calibration

Option 1: Subsidies. The central bank or other government entity can encourage business lending by providing lenders with a subsidy for such loans. A simple way to do this is to provide low-cost funding in return for new lending to businesses. An example of such a program is the “Funding for Lending Scheme” that the Bank of England established in 2012. Under the program, banks, in effect, received low-cost funding from the Bank of England, with the amount of funding and its pricing depending on the amount of new lending to U.K. businesses and households by the bank.¹⁰ The Fed could provide a similar incentive for business lending in the current crisis by offering longer-term, low-cost financing to banks, with the amount of funding available to each bank, and perhaps its pricing as well, depending on the

⁹ Whether the program is legally required to take account of these considerations under the CARES Act is not clear to us, and we have heard opinions on both sides.

¹⁰ The banks actually received secured loans of government securities, which they could then use to obtain funding in the repo market. See Churm and Radia (2012) for details. Churm, et al. (2015) provide evidence on the macroeconomic effects of the program.

amount of a bank's lending to targeted firms—for example, U.S. businesses with fewer than 15,000 employees.

Such a program would help to internalize the positive externalities of such loans. For an unchanged loan interest rate, the lower funding costs would give banks a larger spread on loans, and that would provide extra compensation for risk-taking or increasing balance sheet size. A program along these lines is likely to be more useful if bank term funding spreads are high, either because term funding markets are stressed or banks are viewed as weak. In such a case, the provision of low-cost central bank funding in return for new business loans could greatly reduce the marginal cost of such lending, and so have a significant effect on loan rates and banks' willingness and ability to provide loans.¹¹ On the other hand, if the banking system is generally seen as healthy, and banks can obtain wholesale term funding at low cost, then the program presumably would be less effective. Nonetheless, the central bank could still encourage lending by providing longer-term funding at a low rate—perhaps at the policy rate, as the Bank of England is doing (see below). A reliable source of stable, low cost funding should increase banks' willingness to provide longer-term loans to businesses.

Under such a program, banks would continue to do the underwriting for their loans, and the loans would remain on their books, with the banks responsible for any losses. As a consequence, the central bank would not have to worry about asymmetric information or adverse selection. In addition, unless the subsidy were very large, it seems unlikely to lead banks to provide loans to firms with very high leverage and risk, mitigating potential moral hazard problems. The central bank could also decide on the size of the program and so could control the cost of the subsidy.

However, a funding for lending program may not target the assistance very well. For example, if the low-cost funding is available for all SME loans, banks may choose to lend more at lower rates to relatively safe firms that would have gotten loans in any case. The firms that were not getting credit, and which need loans to survive the crisis, might still be seen as highly risky, particularly given the banks' existing exposures to coronavirus risk, or as generating an undesirable increase in balance sheet size. One way to improve targeting would be to base the amount of low-cost funding on a more narrowly targeted set of firms, for which credit is critical for firm survival. However, efforts to target the program in such a way would run into the asymmetric information problem—the central bank does not have the information needed to identify such firms. As discussed below, the Bank of England and the ECB have provided low cost funding to banks to increase lending to SMEs, but have not tried to target their programs more narrowly, presumably on the view that an overall increase in SME lending should lead to some increase in lending to firms that would not have received loans otherwise.

Option 2: Guarantees. Business lending could be encouraged by providing, in return for a below-market fee, a guarantee that limits the downside risk to the lender. For example, the Treasury could guarantee repayment of at least 80 percent of the loan amount, leaving the lender responsible for only the first 20 percent of losses.¹² Such a guarantee would encourage banks to make loans that are riskier than those they would otherwise make. In the current crisis, banks may be particularly concerned about tail risks, in which the virus has larger and more protracted economic effects. By limiting the maximum loss on additional loans, the guarantee would make banks more-willing lenders. However, if bank lending were limited by balance sheet constraints, guarantees would be less helpful, since the loans would remain on banks' books.¹³

¹¹ For evidence on these effects, see Havrylchuk (2016).

¹² The Federal Reserve would find it difficult to provide such a guarantee given the legal constraints on Section 13(3) lending.

¹³ In the case of a partial guarantee, the remaining portion of the loan would still be included in the calculation of the risk-weighted capital ratios. And even with a 100 percent guarantee, the loan would count toward the leverage ratio, unless the banking agencies provided a temporary exception.

Guarantees could be structured to address the information problems raised by lending programs, though the problems would remain. So long as the first-loss position retained by the banks was sufficiently large, banks would still need to do loan underwriting. As a result, a guarantee program would help address the asymmetric information problem, since banks would have an incentive to use the information they have on the riskiness of borrowers when approving loans. Similarly, banks with a first-loss position would have an incentive to avoid loans that had a high probability of default, limiting the adverse selection problem. However, there could still be some adverse selection, since banks might make loans that had a high risk of very adverse outcomes, since their downside risk would be capped by the guarantee.

Given the limited information available to the central bank, targeting a guarantee program correctly would be a challenge. If the guarantee fee were set too low, then banks would have an incentive to make too many risky loans to firms that are unlikely to survive the crisis. The result would be very high expenses for the government, without a commensurate macroeconomic benefit. In addition, providing low-cost guarantees for loans to risky, leveraged firms could encourage moral hazard after the recovery gets underway. However, excessively high fees would also be a potential problem, since they would discourage use of the program, and so not help provide credit to the firms that need it.

Option 3: Participations. The final option is for the central bank to take some or all of the business loans onto its own books through purchases of loan participations. Under this arrangement, banks would make the loans and sell a portion (perhaps even all) of each loan to the central bank, and in return banks would receive fees for originating and servicing the loans. This approach would allow the program to provide credit to businesses while harnessing the banks' information and underwriting advantages. It would also remove the portion of the loan purchased by the program from the bank's balance sheet, directly addressing limits on lending due to balance sheet constraints. However, by leaving a *pari passu* share of the loan on the banks' books, participations may not address limits on lending that reflect banks' concerns about risk since the portion of the loan that the bank retains would have the same risk characteristics as the entire loan and would have to meet the bank's underwriting criteria. Of course, the program fees—either up front origination fees or servicing fees paid over the life of the loan—would encourage risk-taking and increase lending. Up-front fees would, in effect, provide additional capital to support the lending, while fees paid over the life of the loan would boost the effective risk spread on the loan.

A participation structure would help address some of the information problems noted earlier. So long as the lending banks retain a significant enough portion of the loans, they will have an incentive to do careful underwriting, reducing the asymmetric information problem. Indeed, because they are taking a vertical slice of the loan, their underwriting incentives are not affected by the program except as a result of the fees provided. And, so long as the sale of the participation to the program is made at the time of the loan, this structure should also help limit the adverse selection problem, since banks will retain the risk on the part of the loans they keep. Note, however, that if banks sell the entire loans to the program, as suggested recently by Hubbard and Scott (2020) in the case of the Main Street Lending Program, then the bank would have no incentive to underwrite the loans to limit risk. As a consequence, the program would have to provide detailed underwriting criteria, which would make the asymmetric information problem a particular concern. Moreover, since banks could choose which loans to make and hold, and which to make and sell to the program, there would also be an adverse selection problem. Specifically, banks could make weak loans in order to obtain fee income, in the knowledge that the resulting loan losses would be absorbed by the program.

Even if banks retained a portion of the loans, policymakers might be concerned that the program would not provide a sufficient incentive for banks to perform appropriate underwriting and limit adverse selection. If so, the program could impose a minimum set of underwriting standards for eligible loans. However, such standards would require borrowers to satisfy two sets of underwriting criteria, one set by the program and the other by lending banks. The two sets of underwriting criteria could excessively limit

the set of eligible business loans, suggesting that the standards set by the program be kept relatively simple, so as not to overly constrain the program.

Stein (2020) suggests an additional structural element to help address the asymmetric information and adverse selection problems: extending program loans in several tranches over time. The program would start by making relatively small loans, and then provide additional credit contingent on how the borrower's situation evolves, as well as incoming information on the coronavirus. So firms that had particularly large losses might not get additional credit, since they would be unlikely to emerge from the crisis as a viable firm unless they received transfers from the government. This tranching approach would allow the government to set easier *ex ante* underwriting standards while still limiting the government's exposure to loss. Stein also proposes the use of less-senior claims, such as preferred stock, to reduce potential debt overhang post crisis, with the program taking warrants to gain some upside to compensate for the increased risk. That approach could have benefits, but the Federal Reserve can only lend, not purchase stock. Moreover, the resulting equity stakes would be difficult for the government to exit in the case of small-to-mid-sized businesses, which generally do not have preferred stock.¹⁴

Approaches employed in other countries. Many countries are facing similar issues related to the effects of the coronavirus on firms' revenues and the consequent need to ensure the availability of credit. While a complete catalog of the approaches that have been taken would be well beyond the scope of this paper, it is interesting to consider some of the approaches that have been considered in other jurisdictions. For example, the approaches in the United Kingdom and Germany are broadly similar, but differ substantially from those taken in the United States. In both of the European countries, the focus has been on providing loan guarantees and low-cost funding, with relatively little use of participations.

In the United Kingdom, the British Business Bank, a government development bank, is providing guarantees of new loans to small and medium-sized businesses (see table A1). There is a 100 percent guarantee of smaller loans (based on 2019 turnover, but limited to £50,000), and an 80 percent guarantee of larger loans. Borrowers must be British firms, and there are limits on loan maturity as well as on the payment of interest and fees in the first year. The British Business Bank also has a program offering convertible loans that is aimed at newer, faster-growing firms. That program will match private funds raised now, and the loan converts to equity when the firm next raises equity finance.

In Germany, the bulk of the support is in the form of loan guarantees provided by the government development bank, KfW, under several separate guarantee programs (see table A2). In addition, both the federal government and state governments have other assistance programs. The KfW provides guarantees to lending banks for 100 percent of the loan amount for smaller loans (limited based on 2019 turnover, but as much as €800,000) and generally for 90 or 80 percent for larger loans. Borrowers must satisfy some broad criteria—e.g., operating in Germany and not having been already troubled prior to the coronavirus crisis. Some loan terms are set by the programs (e.g., maximum maturity and interest rates), and there are significant restrictions on the borrowing firms, including limits on executive compensation, limits on the ability of firm to pay dividends, and limits on capital distributions. In addition to the guarantee programs, the KfW also has a program under which it will purchase participations in large, syndicated loans.

While these programs have not been undertaken by the central bank, in both jurisdictions the central bank has also taken steps to support lending to businesses. In the United Kingdom, the Bank of England and the Treasury have opened a COVID Corporate Financing Facility under which the Bank will purchase eligible commercial paper in the primary and secondary market, including from middle-market firms that have not previously issued commercial paper, on terms comparable to those prior to the crisis,

¹⁴ A possible way to benefit from something like a warrant in the case of small firms would be to require the firm to agree to a higher income tax rate starting a few years after the health crisis ends. The firms that survive and are operating at that time would, in effect, be paying a share of their income to the Treasury.

and with maturities of up to a year (Bank of England 2020a). In addition, the Bank of England is providing low-cost funding to banks through its “Term Funding Scheme with additional incentives for SMEs.” The program offers banks low-cost, four-year funding based on the amount of new lending provided to U.K. businesses, with the amount of lending to SMEs given extra weight in the calculation of the amount of and rate on the central bank funding (Bank of England 2020b). Given the very low level of market rates, the Bank of England concluded that some banks might find it difficult to reduce deposit rates in line with market rates, and so term funding at low rates would help banks to offer lower-cost term loans to their customers.

In Germany, banks are eligible for the European Central Bank’s Targeted Long-term Refinancing Operations (the TLTRO III program). Under this program, banks can receive low-cost funding (with rates as much as 50 basis points below the ECB’s deposit rate, so -100 basis points) depending on their lending behavior. In addition, the ECB has eased its collateral rules to help ensure that banks have the collateral that they need to take advantage of the TLTROs. The collateral easing measures include allowing banks to use SME loans as collateral, among other assets, thereby providing low-cost funding banks can use to finance additional SME lending. In addition, the ECB has established a program of Pandemic Emergency Longer-term Refinancing Operations as a bridge to the TLTRO III operations (Lane 2020).

5. What was done: The Main Street Lending Program

In contrast to the British and German programs, the Main Street Lending Program established by the Federal Reserve and Treasury supports bank lending to businesses through the purchase of participations in bank business loans. Since these loans will involve potentially significant risk, the Treasury has provided \$75 billion of capital to support up to \$600 billion of loans purchased by the MSLP. The MSLP consists of three facilities—the New Loan Facility, the Priority Loan Facility, and the Expanded Loan Facility—open to borrowers that are U.S. businesses with 15,000 or fewer employees, or annual revenue of \$5 billion or less.¹⁵

The three facilities are structured to address the funding needs of different types of firms, and they offer different loan sizes and leverage limits (see table 4 for a summary). The New Loan Facility is aimed primarily at small and medium-sized businesses that do not already have high levels of debt. The minimum loan size in this facility was lowered recently to \$250,000 from \$500,000 in April, and from \$1 million in March, and the maximum leverage is 4 times 2019 earnings before interest, taxes, depreciation, and amortization (EBITDA). The Expanded Loan Facility is aimed at larger firms that may already have significant debt outstanding in the form of syndicated loans. The program can allow very substantial loans (raised recently to \$300 million) to be made to “upsized” an existing loan agreement. Given the relatively high debt levels of such firms, the maximum level of leverage in the facility is 6 times EBITDA. The Priority Loan Facility is aimed at small and medium-sized firms that may have larger debt than those using the New Loan Facility, and the loans can be used to refinance existing credit to another lender as well as to increase borrowing. The maximum loan sizes are \$50 million, higher than \$35 million in the New Loan Facility, and the maximum leverage is higher (again 6 times EBITDA).

Somewhat surprisingly, the terms on the loans under the three facilities are quite similar, despite the very different types of borrowers and loans that are covered. Notably, in all three cases, the borrower pays a rate of LIBOR (1 month or 3 months) plus 300 basis points, and the maturity of the loan is five years, despite large differences in loan size and maximum debt coverage ratio requirements. Interest payments are deferred for the first year, principal amortization is deferred for the first two years, and repayments of principal starting in year three are in similar proportions across the facilities. The origination fee for the

¹⁵ On June 15, the Federal Reserve announced plans to open similar programs for not-for-profit entities. Those programs are not considered here.

New and Priority Loan programs is 100 basis points, but it is only 75 basis points for the Expanded Loan Facility, presumably reflecting the larger size of the loans under that program.

The facilities are designed to address the four challenges noted earlier. Because the banks keep a 5 percent share of each loan on their books, they have an incentive to do careful underwriting, limiting the asymmetric information problem faced by the Federal Reserve and the Treasury. The retained share also limits adverse selection, since banks cannot avoid a portion of any losses on loans under the MSLP. However, the share of credit risk banks must retain does not vary by loan risk, suggesting there is no more protection to the Fed and Treasury from this source where it is needed more. Under the Expanded Loan Facility, which allows the largest and most leveraged loans, there is a limit of 35 percent of the total credit of which the loan is a part, which provides an additional significant incentive for the bank to take careful account of risk.

Adverse selection is also addressed by the minimum underwriting criteria that the MSLP imposes. Borrowers must have been healthy at the end of 2019, as judged by the lender's internal rating of existing credits at that time, and they must certify that they believe that they are able to meet their financial obligations and not file for bankruptcy for at least 90 days. Borrowers must commit to not using the loan to voluntarily repay other debts before the MSLP loan is repaid, and that they will not seek to cancel other credit lines over that period. Borrowers also must limit executive compensation, dividends, and capital distributions while the loan is outstanding. In addition, lenders under the program must be a regulated U.S. depository institution or a U.S. branch or agency of a foreign banking institution. In either case, the participating lenders would be subject to supervision by the U.S. banking agencies, and so their operations and incentives should be relatively well understood. Moreover, the lending banks cannot request early repayment of other debts during the life of an MSLP loan, and they cannot cancel or reduce any existing loan commitment or line of credit over the same period.

These program features also help to address some of the constraints on the Fed's 13(3) lending authority. In particular, the incentives for bank underwriting and the minimum underwriting criteria help ensure that the borrowers are solvent. In addition, the Fed is secured by the SPV collateral and the Treasury capital, presumably to its satisfaction, and the Treasury backing should help protect taxpayers from losses.

In addition, the underwriting requirements help to limit the risk of loss to the Treasury. As noted earlier, the extent to which the Treasury is willing to take on such risk depends on the Treasury Secretary's risk tolerance, and the Secretary has suggested only a limited willingness to take losses on the CARES funds. The actual outcome will depend in part on the calibration of the MSLP. Under the program, the Treasury will receive fees from the banks for purchasing the 95 percent participations, as well as 95 percent of the spread income on the loans (less the servicing fees paid to the bank) over the life of the loan. This income will help to offset losses on the loan portfolio. If the fees and spreads received by the Treasury are too low relative to the losses on the loans, the Treasury could lose money. On the other hand, if fees or spreads are too high, the Treasury would earn money on the program. However, the gains and losses are not the measure of program success, which must take account of the aid provided to the intended firms.

In that regard, the program terms should also help target the credit to businesses that are neither so strong that they do not need the assistance nor so weak that they are likely to fail. As we note below, strong firms will not find the pricing attractive, since they are likely able to borrow at a spread less than 300 basis points. Such firms also will not want to accept the constraints the program imposes on dividends and capital distributions. In addition, the MSLP requires that borrowing firms must make "commercially reasonable efforts" to maintain employment and payroll during the life of the loan, a constraint that stronger firms would likely choose to avoid, given uncertainty about what compliance would entail and the potential need to restructure some of their operations in response to the economic fallout from the virus. Conversely, very weak firms will likely not satisfy the requirements of the

program (such as the limits on leverage), helping to limit the program to borrowers most likely to benefit from a loan.

Finally, the program is designed to limit moral hazard by excluding loans to firms that had excessive levels of leverage prior to the pandemic. As noted earlier, the Federal Reserve has emphasized for some time that excessive leverage in the nonfinancial business sector is a potential risk to the economy because a business downturn caused by other factors could be reinforced by a wave of failures and bankruptcies by highly leverage firms. In the interagency guidance on leveraged lending in 2013, the federal banking agencies noted that “a leverage level after planned asset sales...in excess of 6X Total Debt/EBITDA raises concerns for most industries” (Federal Reserve 2013). Thus, it seems appropriate that borrowers under the MSLP be required to have a debt to EBITDA ratio of no more than 6, even after receiving the program loan. The program’s limits on compensation, dividends, and share repurchases for borrowers also may serve as an offset to future incentives to increase leverage.

Table 4. Main Street Lending Program Terms

Facility	Intention	Terms
Main Street New Loan Facility	Supporting new loans to businesses that are small or medium-sized and which have low levels of debt. (Thus, the loan sizes are relatively modest, and leverage is limited.)	<ul style="list-style-type: none"> • 5-year maturity, rate of LIBOR+300 bps (LIBOR is 1 or 3 months). Origination fee of up to 100 bps. • Size limited to between \$250,000 and \$35 million, with a limit on total leverage of 4x 2019 EBITDA. Any outstanding loan has an internal risk rating of “pass.” • No interest or principal payments in the first year. Required minimum amortization of 15 percent, 15 percent, and 70 percent in years 3 to 5, respectively. • Limits on executive compensation, dividends, distributions of capital, and employment. • Loan not used to voluntarily repay other debt. • Borrower must make “commercially reasonable efforts” to maintain employment and payroll. • Bank participation 5 percent. • Bank pays SPV 100 bps of principal amount, and is paid 25 bps of principal per annum for servicing.
Main Street Expanded Loan Facility	Supporting increases in loans to businesses that are larger and already have significant debt. (Thus, loan sizes are considerably larger, and allowable leverage is higher than in the New Loan Facility.)	<p>Same as the New Loan Facility, except:</p> <ul style="list-style-type: none"> • Origination fee of up to 75 bps. • Size limited to between \$10 million and \$300 million, with a limit on total leverage of 6x 2019 EBITDA. • Size also limited to 35 percent of the borrower’s debt that is pari passu with the participation. • Minimum amortization of 15 percent, 15 percent, and 70 percent in years 3-5, respectively. • Bank participation 5 percent • Bank pays SPV 75 bps of principal, and is paid 25 bp of principal amount per annum for servicing.

Main Street Priority Loan Facility	Supporting new loans to businesses that are small or medium-sized but may already have significant debt. (Thus, the loan sizes are relatively modest, but allowable leverage is higher than in the New Loan Facility.)	Same as the New Loan Facility, except: <ul style="list-style-type: none"> • Size limited to between \$250,000 and \$50 million • Limit on total leverage is 6x 2019 EBITDA. • The loan can be used to refinance existing debt owed to another lender.
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6. Will the MSLP be successful?

The success of the MSLP will be measured ultimately by whether more loans are made to borrowers in need, with future losses consistent with Federal Reserve and Treasury constraints and preferences. Thus, a program with very few loans would not be successful since its terms were presumably too restrictive to generate the social benefits of preserving firms. However, a program with lots of loans but large losses for the Treasury and the Federal Reserve would also be a failure, given that the Treasury has indicated a desire to limit losses.

Will borrowers be helped? The MSLP makes loans, not government transfers. Not all firms that have lost business because of the pandemic will be helped with a loan that increases its total debt burden, whereas all firms that receive transfers to cover some of their lost revenue will be helped. But loans can be structured so the additional debt is not overly burdensome. In particular, loans with longer maturity, lower rates, and deferred payments would make them more equity-like. The MSLP loans have a few of these characteristics.

For all three programs, the loans are five-year maturity, with interest payments deferred for the first year. Principal payments are deferred for two years, and the bulk of the repayments—70 percent—come only in the final year. These terms are helpful because they allow the firm more time for recovery. Indeed, the Federal Reserve recognized potential benefits to borrowers of more “equity-like” features when it lengthened maturities and pushed back amortization in changes announced on June 8 (Federal Reserve 2020c).

In addition, the loan rate of 3-month LIBOR + 300 basis points is the same for the three programs, despite minimum loan sizes that vary from \$250,000 for the New Loan Facility and a maximum loan ratio of 4 times EBITDA, and a minimum of \$10 million for the Expanded Loan Facility and a maximum leverage ratio of 6 times EBITDA.

However, spread data on C&I loans by commercial banks and on institutional leveraged loans available for transactions in mid-2017 (the latest data available from the Fed’s Survey of Terms of Business Lending, or STBL) suggest substantial variation across size and credit rating (table 5). For C&I loans by large domestic banks, with an average size of \$593,000 and a risk rating of 3.1, the average spread is 2.13 percent (a rate of 3.43 percent).¹⁶ The spread for low risk firms is lower than the average, 1.61 percent, and for loans above \$1 million, 2.07 percent. All of these spreads are lower than the 300 basis points for the Main Street program. At their recent peak in 2010, following the financial crisis, C&I loan spreads peaked at 3.17 percent, and were above 300 basis points for moderate risk loans and smaller

¹⁶ The category "moderate risk" represents the average loan under average economic conditions at the typical lender. The risk rating is calculated by assigning a value of 1 to minimal risk loans, 2 to low risk loans, 3 to moderate risk loans, 4 to acceptable risk loans, and 5 to special mention and classified loans.

loans.¹⁷ These data suggest both wide variation in spreads by size and risk, and that a 300 bp spread is much closer to a peak recession spread than a spread in more normal times. Such a spread is high for low-risk firms and even for moderate risk firms except at their cyclical peak, suggesting the program will not attract higher-quality borrowers. This pricing is unlike the more favorable terms offered to investment-grade corporations, where the PMCCF will purchase new issues at market rates, and the SMCCF purchases bond ETFs or single-name bonds in order to reduce risk spreads on outstanding bonds, which then should reduce the rate on bonds purchased in the PMCCF.

Table 5. Spreads on C&I loans and institutional leveraged loans, by risk and size, 2010 and 2017

	2010:Q4	2017:Q2
Average C&I loan	3.17	2.13
2010 loan size \$447,000, Risk rating 3.2		
2017 loan size \$593,000, Risk rating 3.1		
Risk		
Low	2.47	1.61
Moderate	3.24	2.18
Size (\$Th)		
100 to 1,000	3.60	2.50
1,000 to 10,000	2.95	2.07
Institutional leveraged loans		
BB/BB- rating	4.00	2.50
B+/B rating	5.50	4.00

Source: For C&I loans, large domestic banks, Survey of Terms of Bank Lending, Federal Reserve Board. For institutional leveraged loans, S&P Global, Leveraged Commentary & Data, as reported in the Federal Reserve Board Financial Stability Reports. Spreads are relative to 3-month LIBOR.

Note that spreads on institutional leveraged loans for below-investment-grade borrowers ranged on average from 250 basis points to 400 basis points, and this range would encompass the 300 basis point spread for borrowers under the Expanded or Priority facilities. But again, the range is fairly large, suggesting that a common spread would be a disincentive for higher quality borrowers within this group to borrow from the program.

In short, the LIBOR+300 basis points spread on MSLP loans would not be attractive to less-leveraged middle-market firms that access credit mainly through banks. Rather, it appears attractive mainly for higher-risk borrowers and smaller loans. We believe that a bank with an existing customer that met the conservative debt limits under the New Loan Facility would find this spread to be high, and so would be willing to make a loan at this spread and keep it on its own books, suggesting that a narrower loan spread

¹⁷ The STBL was discontinued in May 2017. A new survey was started for small business loans—Federal Reserve Bank of Kansas City (2020). However, the loans covered in that survey are much smaller than those that had been included in the STBL. For example, the average C&I loan offered by domestic commercial banks in the STBL in the May 2017 survey was \$491,000, while the average loan size in 2017:Q4 in the new survey for a new fixed-term loan was \$93,000 and a new variable-term loan was \$160,000. Loan spreads on new fixed-term loans ranged from 3.2 to 3.9 percent between 2017:Q4 and 2019:Q4, reflecting their smaller size. No information is available in the new survey on the risk of the loans.

may be called for to support business borrowing and the continued operation of small-to-mid-sized businesses.

Some have argued that the leverage ratios in the MSLP are too low, and that there are firms with higher than 6 times EBITDA that would benefit from a Main Street loan. The leverage ratios serve to reduce risk to the program, as well as to mitigate moral hazard. That said, there may be situations where a borrower in an industry that is characterized by high leverage is a significant employer, and its bankruptcy would be especially inefficient. In such cases, the Fed could establish a process to allow banks to make exceptions to the general underwriting guidance and lend to such firms under the program, so long as the bank agreed to retain a larger share of the loan, such as 15 or 20 percent, in order to ensure that the bank was comfortable with the credit. Indeed, when the Priority Loan facility was introduced in April, it allowed higher leverage than the New Loan facility in return for a higher bank participation share. This tradeoff was eliminated in the revised terms issued in June. But policymakers should monitor closely whether the program could be more effective in serving the needs of borrowers and the economy if higher leverage could be accommodated. If so, the higher leverage should be accompanied by an increase in bank retention share to limit risk, and moral hazard concerns could be mitigated by the limits on dividends, buybacks, and compensation.

Some prospective borrowers may also be concerned about the stigma associated with taking a government-supported loan when it is not designed to be used broadly and offered on favorable terms. In addition, the restriction on retaining employees may hinder the ability of a firm to make necessary adjustments to its business practices to remain viable in a post-COVID environment, and thus limit demand. Moreover, lack of clarity about how compliance with this requirement will be measured would make borrowers less willing to use the program.

Will banks participate given the terms that have been established? We outlined above three ways to incentivize banks to lend more, by a funding for lending subsidy, a guarantee, and a participation such as in the MSLP. The ability to sell 95 percent of the loan to the SPV should help if the main impediment to lending to the intended beneficiaries is balance sheet capacity. If the main impediment to bank lending is limited risk appetite, however, rather than balance sheet pressures, it isn't clear that the MSLP will get much use because the bank needs to retain some of the loan, and even if only 5 percent, it will apply its own underwriting standards to the loan.

Which is it? Banks' responses to the April 2020 Senior Loan Officer Opinion Survey, (based on responses in March) show that that 40 percent of domestic banks surveyed, on net, indicated that they had tightened lending standards for firms of all sizes (figure 2 above). Moreover, they indicated that reduced tolerance for risk was a more important factor than bank's current or expected capital position. In particular, the survey shows that banks attributed the changes to increased uncertainty about the outlook, a worsening of industry-specific problems, and a reduced tolerance for risk. Only a few banks indicated that a deterioration in their bank's current or expected capital position had played a significant role.¹⁸

Thus, the current program, which is more effective in addressing balance sheet constraints than concerns about loan risk, may not give enough encouragement to banks to participate. However, while banks may want to avoid lending to riskier firms on their own, the fees on MSLP loans should make them more willing to do so. For example, under the New and Priority Loan Facilities, banks extend only 5 percent of the loan, but they receive an origination fee of up to 100 basis points of the loan, and then a servicing fee of 25 basis points of the remaining 95 percent of the loan each year. Thus, the total fees paid to the banks are more than 40 percent of the portion of the loan that the banks retain—a significant

¹⁸ Of course, banks may be wary of reporting concerns about their capital positions on a Federal Reserve survey – even in the global financial crisis, when many banks faced severe capital pressures, survey respondents pointed primarily to higher risk and decreased risk tolerance as the reasons for tighter lending standards.

incentive to lend to firms that may benefit from the credit but are not strong enough to obtain loans directly from the bank.

Banks also may be less willing to participate if there is uncertainty about the costs associated with workouts of loans to defaulting borrowers. The program requires that the banks, which have considerable experience in managing troubled loans, will be responsible for any workouts. Thus, in evaluating participation in the program, banks will need to take account of the likely costs they will incur in the case of loan defaults. One problem with this approach, however, is that banks may view the workouts as too burdensome, or be concerned that in situations where loan losses are high, they will face large workout costs that they will find hard to manage. In such situations, banks also may face funding pressures and so may be inclined to limit workout costs by moving quickly to close defaulting firms. By contrast, the Fed and Treasury do not face funding pressures, and they can take account of the social benefits to keeping firms going during the recovery and avoiding liquidations—hence they would be inclined to be more flexible in workouts. To encourage the banks in this regard, the Fed and Treasury could pay higher servicing fees for delinquent loans, particularly in periods of generally high loan delinquencies, which would encourage more loan originations and more efficient workouts.¹⁹

7. How to make the MSLP more effective

This paper has laid out the key elements of the MSLP program as a solution to the problem of increasing bank lending to firms that need to obtain credit to survive the health crisis, subject to the constraints of the Fed and the Treasury. We define success as an increase in loans to such borrowers relative to the level that banks would have provided on their own, subject to the Fed’s legal constraints to lend only to solvent borrowers and be secured to its satisfaction, and with losses at a level acceptable to the Treasury. Since many of the firms that could benefit from the program are inherently risky, if there are no losses to the Treasury, the program probably did not take enough risk. Moreover, unlike in 2008, when the intention of Fed lending programs was primarily to counter a run on the financial system, the intention of the MSLP is for the government to share the risk of losses caused by the shutdown and the associated changes in economic behavior.

The MSLP uses a loan participation structure between the bank and government, with the program terms designed to address the asymmetric information, adverse selection, poor targeting, and moral hazard problems that arise as a result of the differing information and incentives of the borrowers, banks, and the government. In particular, the various terms and conditions are calibrated to encourage banks to participate and to encourage use of the program by borrowers that can benefit from it. The calibration of the parameters of the MSLP is difficult, given that it is a new program being introduced in an entirely novel situation. The two sets of adjustments that the Fed has made already to the original proposal based on more than 2,200 comment letters and other feedback from potential borrowers and lenders illustrate the difficulty of designing a program that can be effective. This paper, which highlights why private lending may not be sufficient in the current situation and the challenges in setting up a government program to support such lending, provides a framework to understand adjustments of the parameters of the program and the tradeoffs between borrowers, lenders, and the government.

¹⁹ An alternative approach would be to use the SPV or a separate “resolution” SPV to manage the troubled loans on behalf of the Federal Reserve and Treasury and enter into loss-sharing arrangements with the banks. This approach would help to align the incentives of those conducting the workout with the interests of the Federal Reserve and Treasury, and so could lead to better outcomes. Allowing for troubled loans to be pooled across the program also could increase returns, particularly if the troubled loans were ultimately securitized and sold. Hiring asset managers with skills in working out troubled credits could free the Fed and Treasury from those responsibilities, which require specialized skills and could be politically fraught. And, while it would take some time to contract with appropriate asset managers, there likely would be time because program loans do not require payments in the near term.

One reason the program may not be effective is because targeted firms do not see the program terms as attractive enough. Since the set of firms that could benefit from the MSLP varies widely, from small private borrowers that have limited debt to very large, complex companies with significant debt, the terms of the program should be better tailored to the risks and needs of the borrowers. In particular, we think that the terms for the New Loan facility should be eased relative to those for the Priority and Extended facilities, since the smaller firms that would likely borrow under the New Loan facility are, because of their lower leverage, likely simpler and less risky, and have fewer alternatives to avoid liquidation or inefficient bankruptcies. As a consequence, we propose, first, that loan spreads be recalibrated to reflect differences in credit quality across the three loan facilities, and that the New Loan facility have a lower spread, given the better credit quality of the borrowers. In addition, the paperwork required for loans in the New Loan facility should be streamlined, if possible. Currently the borrower and lender certification requirements appear to reflect the participation by large banks and large, complicated firms, which have the legal staff needed to comply with them. However, the smaller banks and simpler borrowers that might use the New Loan facility will likely find these certifications daunting.

Second, we fully agree with the recent changes to lengthen loan maturities from four to five years, and the pushback in repayment schedules and required amortization. These changes give borrowing firms more time to recover, and they may be especially helpful in the case of a protracted post-coronavirus recession. For comparison, investment-grade and fallen angel firms borrowing from the PMCCF can issue loans or bonds for a five-year term with repayment only at maturity, so five-year loans with some amortization under the Main Street program seem less favorable to the borrowers. Another possible comparison is to SBA 7(a) loans, which can be extended for ten years (maximum statutory maturity). If it appears that borrowers would find that longer maturity loans would be helpful, we would support going beyond five years. The program could offer a longer-term loan where the interest rate begins to increase after five years, which gives borrowers an incentive to repay the loan after five years but allows for greater flexibility.

While maximum debt-to-EBITDA ratios have been set for each of the facilities, which helps to address adverse selection, better targeting, and moral hazard concerns, there may be situations where borrowers would exceed the limits, but banks believe that such lending would benefit the borrower and the economy. The current program does not allow for this type of flexibility, but if policymakers wanted to permit it in some situations, they could require the banks to retain a larger share of the loan in exchange, so the Federal Reserve and Treasury would still be adequately protected.

In addition, we believe it is important for the Fed and Treasury to provide greater clarity regarding what is meant by “commercially reasonable efforts” to maintain employment. Providing more clarity on what adjustments would be deemed reasonable would reduce uncertainty for businesses considering a MSLP loan and encourage take-up. In practice, we also believe that firms should be given significant flexibility to respond appropriately in order to stay commercially viable because COVID-19 may require firms to make some important changes to their operations and business models to respond to changes in the behavior of their customers and suppliers.

Another reason the MSLP could get limited use is because banks do not find it attractive. The participation structure of the current program helps banks to manage balance sheet constraints they may face, but does less to reduce loan risk than a loan guarantee program would. However, commercial bankers have attributed their current tighter lending standards more to heightened uncertainty and reduced risk tolerance rather than balance sheet constraints. That being said, balance sheet constraints could become more pronounced if the economy remains very weak, and the MSLP could become more attractive to banks over time with needed balance sheet relief and fee income. We believe, though, that it is important for the program to aim to boost credit sooner rather than later. That increase would reduce the likelihood that the sharp decline in current activity leads to significant permanent reductions because businesses could not survive the immediate crisis.

To encourage bank participation in the program if they lack the risk appetite to make the desired loans, we recommend, first, that the government increase fees, giving banks a larger part of the spread on the entire loan, to provide greater compensation for the risk that banks retain. The government could even pay a higher fee to banks that do more lending under the program; this additional incentive for greater program use would be similar in spirit to the approach taken to reward lenders for more SME lending in the Bank of England's term funding scheme. Second, given that banks may be concerned about the costs associated with a higher than usual level of loan workouts, the program could pay higher servicing fees for delinquent loans, particularly in periods of generally high loan delinquencies, in order to encourage banks to do loan workouts that are more efficient than those that only minimize the banks' short-term costs.

Of course, some of these changes could worsen the adverse selection and moral hazard problems the program is designed to address, and they would also require the government to accept an increased risk of loss. Since some of the other 13(3) programs (PDCF, CPFF, MMLF) are likely to make money, the Treasury could, in effect, mutualize the programs using gains on some programs to offset the losses on others. Policymakers should prepare for the possibility that interest in the program remains weak and be ready to make additional adjustments as needed. The Fed and the Treasury have been aggressive thus far in their response to the coronavirus, and they may need to be even more so to make the MSLP a success.

However, policymakers also should be prepared for the possibility that even an aggressive MSLP program consistent with the CARES Act may not be sufficient to meet the financial needs of many businesses. In that case, they should quickly try an alternative approach. One possibility would be for the Federal Reserve to introduce a funding for lending program to reduce bank funding costs that might be limiting their willingness to lend. More broadly, the Federal Reserve and the Treasury could go back to Congress and ask for changes to the CARES Act that would allow for a more effective support program. For example, Congress could authorize a loan guarantee program that should increase banks' willingness to lend despite a limited risk appetite. Such a program could be structured like an expanded SBA 7(a) program, and it would be similar to the programs that have been introduced in some other countries. Alternatively, Congress could allow the Federal Reserve or the Treasury to purchase preferred stock, or even common equity, which would avoid the problems associated with debt overhang, and so allow support to be provided to many more firms. Finally, Congress could lift the prohibition on loan forgiveness contained in the CARES Act, allowing the Fed and Treasury to forgive loans if the effects of the coronavirus on borrowers turn out to be significantly larger than anticipated. Such forgiveness would effectively provide insurance against future shutdowns caused by the coronavirus, and so could support both banks' willingness to lend and firms' willingness to borrow.²⁰

²⁰ Metrick (2020) outlines a possible structure for such a program.

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Table A1: Summary of U.K. COVID-19 Business Credit Support Programs

Source of Support	Type of Support	Eligibility	Terms
British Business Bank Bounce-back Loans	Guarantee	SMEs (SMEs are defined as a business with less than 250 employees and either (a) a turnover of less than £44.45m or (b) a balance sheet of less than £38.22m.)	100 percent guarantee of loans of £2000 to the lesser of 25 percent of business turnover or £50,000. Loan term of 6 years, loan interest rate of 2.5 percent. No fees and no payments for a year. Government pays interest for the first year.
British Business Bank Business Interruption Loans	Guarantee	SMEs (SMEs are defined as a business with less than 250 employees and either (a) a turnover of less than £44.45m or (b) a balance sheet of less than £38.22m.)	80 percent guarantee of loans over £50,000 and up to £5 million. No interest and fees for the first year.
British Business Bank Large Business Interruption Loans	Guarantee	Larger firms with turnover greater than £44.45 million.	80 percent guarantee of loans up to £25 million for firms with turnover from £ 44.45 million to £250 million and up to £50 million for those with turnover above £250 million. Term of up to 3 years No interest and fees for the first year.
British Government Future Fund	Convertible loan	Newer, faster growing firms.	Bridge financing of between £125,000 and £5,000,000, matching private funds raised. Interest rate of 8 percent for a maximum of three years. Converts to equity at the next funding round of the firm with a 20 percent discount.
Bank of England COVID Corporate Finance Facility	Primary and secondary market purchases of commercial paper	Firms that were investment grade prior to the crisis.	Terms comparable to those in the market prior to the crisis.

(Joint program of the BOE and Treasury)			Maturity of up to a year. Minimum purchase is £1 million. Maximum total purchase is £1 billion for large, highly rated firms.
Bank of England Term Funding Scheme with additional incentives for SMEs (TFSME)	Low-cost funding	British depository institutions	Floating rate funding with a 4-year term. Priced at Bank Rate, unless lending to British businesses and households declines, in which case it increases by as much as 25 bps. Quantity of low-cost funding depends on the level of lending to businesses and households in the UK, plus increases in such lending over a base period. Increases in lending to SMEs get a multiple of 5 in the calculation.

Sources: British Business Bank (2020a), British Business Bank (2020b), Bank of England (2020a), Bank of England (2020b).

Table A2: Summary of German COVID-19 Business Credit Support Programs

Source of Support	Type of Support	Eligibility	Terms
KfW Instant Loan (KfW backed by the German Government)	Guarantee of loan for investment or operating costs. (Loan can't be used to payoff other loans or to invest in other firms.)	German firms with more than 10 employees and positive profit in 2019 or on average over 2017-2019. Firms not in troubled condition at the end of 2019.	100 percent guarantee of a loan of up to lesser of €500,000 and 25 percent of 2019 turnover for firms with up to 50 employees, and lesser of €800,000 and 25 percent of 2019 turnover for firms with more than 50 employees. Term is up to 10 years. Fixed rate, currently 3.0 percent. No underwriting by the bank. Limits on executive compensation, dividends, and distributions of capital.
KfW Startup Loan -- Universal	Guarantee of loan for investment or operating costs. (Loan can't be used to payoff other loans or to invest in other firms.)	German firms in existence for 3- 5 years. Firms not in troubled condition at the end of 2019. (SMEs are firms with fewer than 250 employees and turnover of less than €50 million OR assets of less than €43 million.)	Guarantee of 90 percent of loans for SMEs and 80 percent of loans for larger firms. Maximum loan size of €1 billion (with other limits based on annual turnover, wage costs, debt, and financing needs). Term of up to 10 years. Fixed Rate, currently 2.0 to 2.12 percent. Limits on executive compensation, dividends, and distributions of capital.
KfW Entrepreneur Loan	Guarantee of loan for investment or operating costs. (Loan can't be used to payoff other loans or to invest in other firms.)	Firms operating in Germany in existence for more than 5 years. Firms not in troubled condition at the end of 2019. (SMEs are firms with fewer than 250 employees and turnover of less than €50 million	Guarantee of 90 percent of loans for SMEs and 80 percent of loans for larger firms. Maximum loan size of €1 billion (with other limits based on annual turnover, wage costs, total debt, and financing needs). Term of up to 10 years.

		OR assets of less than €43 million.)	Rate is based on risk. Current range is from 1.03 to 7.43 percent. Limits on executive compensation, dividends, and distributions of capital.
KfW Syndicate Loans	Participation in loan for investment and operating costs.	Firms operating in Germany with 50 or more employees. Firm can't be in default, and the bank must state that the firm can repay the loan.	KfW provides up to 80 percent of the loan, with a limit of 50 percent of the total debt of the firm. Minimum size of €25 million, with limits on size. Maturity of up to 6 years. Rate and other terms are the same as for the private lenders. Limits on executive compensation, dividends, and distributions of capital.
Economic Stabilization Fund (WSF)	Debt guarantees for up to 60 months	Troubled German firms that are two of: Assets over €43 million, revenues over €50 million, and 250 or more employees; and have experienced financial hardship as a result of COVID-19.	Total guarantees of up to €400 billion.
Economic Stabilization Fund (WSF)	Purchases of capital instruments	Troubled German firms that are two of: Assets over €43 million, revenues over €50 million, and 250 or more employees; and have experienced financial hardship as a result of COVID-19. There must be an important interest of the federal government in the stabilization of the company.	Total investments of up to €100 billion.
ECB Pandemic Emergency Longer-term Refinancing Operations (PELTROs)	Low-cost funding	Euro area banks	Full allotment operations providing liquidity at a rate 25 bps below the rate on

			Main Refinancing Operations (currently -25 bps).
ECB Targeted Long-term Refinancing Operations (TLTROs)	Low-cost funding	Euro area banks	Rate on TLTRO III operations can be as low as -100 bps through March 2021. Banks will receive this low rate if their loans do not decline over the year.

Note: The German government and the state governments also have programs to provide support to firms.

Source: KfW (2020); Juenemmn, Wirtz, and Leitmann (2020); Lane (2020).



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