The Paycheck Protection Program Liquidity Facility

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OVERVIEW

• The Federal Reserve established the Paycheck Protection Program Liquidity Facility (PPPLF) in April 2020 to boost lender participation in the Small Business Administration's Paycheck Protection Program (PPP), which offered small businesses forgivable government-guaranteed loans to keep workers paid and employed amid the COVID-19 outbreak.

• This article describes the features and goals of the PPP and the PPPLF, and analyzes the facility's loan take-up and its impact on lender participation in the PPP and PPP loan disbursements.

• The findings suggest that by supplying liquidity to smaller lenders such as community banks and fintechs, the PPPLF helped bolster the PPP's effectiveness by increasing loan origination to the smaller businesses served by these lenders, across wide geographic areas.

Starting in early spring of 2020, the COVID-19 outbreak caused unprecedented widespread disruptions to economic activity that had a significant impact on businesses and state and local municipalities, as well as individuals. To mitigate some of these disruptions and provide relief to entities affected by the economic fallout from the measures to contain COVID-19, Congress signed the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) into law on March 27, 2020. Among other provisions, the CARES Act established funding for forgivable government-guaranteed loans to small businesses under the Small Business Administration's (SBA) Paycheck Protection Program (PPP).[1]

The PPP was aimed at providing a lifeline to small businesses to help them maintain payroll and keep workers paid and employed. Small businesses could apply for loans through an extended list of lenders, which included then-current SBA-approved lenders and, over time, newly approved lenders such as banks, credit unions, financial technology firms (fintechs), and online marketplaces. The program went through several phases, characterized by new batches of funding, deadline extensions, and refinement and clarification of rules and guidelines. The SBA reimbursed

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lenders with generous loan origination and processing fees; in addition, for larger approved lenders, the loans provided an attractive interest rate relative to the cost of funding. However, for some smaller lenders, including community banks and fintechs, these incentives were perceived to be insufficient to induce broad participation in the program. Balance-sheet constraints were an additional hindrance to lender participation.

To provide an impetus for program participation, as well as liquidity at attractive rates, the Federal Reserve, with the backing of the Secretary of the Treasury, established the Paycheck Protection Program Liquidity Facility (PPPLF) on April 8, 2020.[2] Pursuant to Section 13(3) of the Federal Reserve Act, the regional Federal Reserve Banks were authorized to extend nonrecourse credit to eligible financial institutions participating in the PPP, with PPP loans as collateral. While the facility's direct aim was to bolster the effectiveness of the PPP and thereby provide relief to small businesses affected by COVID-19, more generally it served a purpose similar to that of other 13(3) facilities in providing liquidity to credit markets, as per the Federal Reserve's role as lender of last resort when private liquidity becomes scarce. By extending much needed cheap liquidity to small PPP lenders, the PPPLF helped boost PPP loan origination across wide geographic areas and in underserved and underprivileged business communities, in line with the guidance in the CARES Act.

In this article, we lay out the background and main features of the PPPLF, discuss the intended aim of the facility, and analyze loan take-up, the facility's impact on lender participation in the PPP, and PPP loan disbursements.

1. The Paycheck Protection Program

The CARES Act was aimed at responding to the COVID-19 outbreak and addressing its economic impact. Among other provisions, the act extended relief to small businesses affected by COVID-19 by establishing funding for forgivable bridge loans and providing additional funding for grants and technical assistance. The PPP, a Section 7(a) loan program of the Small Business Act (15 U.S.C 636), was an important part of these efforts, aimed at providing a lifeline to small businesses to help them maintain payroll, thereby keeping workers paid and employed during the crisis. Congress issued guidance to prioritize small businesses that operate in underserved and rural markets and/or that are controlled by veterans, members of the military, or individuals from socially or economically disadvantaged communities. Initially, $349 billion was authorized in PPP funds for forgivable government-guaranteed loans to small businesses to cover their costs related to payroll (including salaries and benefits), as well as utility, mortgage, and rent payments.

The general features of the program were laid out in the CARES Act and detailed further in the interim final rule issued by the SBA in consultation with the Secretary of the Treasury. The first phase of the program was open from April 3 to June 30, 2020; however, available funds were quickly exhausted. Given the PPP's popularity and the continuing need to support small businesses as the pandemic persisted, lawmakers replenished the total available funds, refined rules and requirements, and extended the program until May 31, 2021. As of that date, 11,823,594 loans were approved for a total of nearly $800 billion.

1.1 Eligible Borrowers

To be eligible for PPP loans, businesses needed to have 500 or fewer employees[3] and be adversely affected by COVID-19 and the measures enacted to contain its spread. Businesses had to be operational on February 15, 2020, in order to be eligible and must have had employees for whom they paid salaries and payroll taxes, or hired independent contractors.[4] The same loan terms applied to all applicants, and full principal loan amounts qualified for forgiveness as long as employee and compensation levels were maintained (with some caveats). Businesses had to submit a PPP loan application to an SBA-approved lender, along with the documentation necessary to establish eligibility, including payroll records and tax filings or income and expenses from a sole proprietorship.[5] As part of the application, the borrower had to provide a good-faith certification that the current economic uncertainty made the loan necessary to support ongoing operations and that the loan would be used to retain workers and maintain payroll or to make mortgage, lease, and utility payments. No pledge of collateral and no personal guarantee were required. Loans were initially capped at one per applicant; however, a second draw was later allowed. Loan applications were processed in the order in which they were received by the SBA, not by when the applications were submitted to lenders, an approach that, especially in the first round of the program, had significant implications for loan allocations.

1.2 Terms of Credit

The maximum PPP loan amount for which businesses could apply was set to the lesser of $10 million or an amount equal to 2.5 times the average monthly payroll costs from the previous year.[6] The interest rate on the loan was set at a fixed rate of 1 percent, in order to provide low-cost funding for borrowers and at the same time offer an attractive interest rate for lenders relative to the cost of funding for comparable maturities.[7] Borrowers were not required to pay PPP loan fees to either the lender or the SBA, and interest payments were deferred initially for six months (then extended to ten months) after the covered period. The loans had a two-year maturity after approval, extended to five years for loans issued after June 5, 2020. Prepayment was possible, with no prepayment fees or penalties. For loans with a remaining balance after a reduction based on loan forgiveness, the remaining balance was guaranteed by the SBA and forgiven loan amounts were tax free for federal tax purposes.

An important feature of the PPP was loan forgiveness. To qualify for forgiveness, borrowers had to show that they had not decreased their full-time employee head count or reduced salaries and wages by more than 25 percent (later increased to 40 percent) for any employee who made less than $100,000 in 2019. They needed to maintain payroll levels and employee count for the covered period (between eight and twenty-four weeks after the loan was originated). Firms that had laid off employees or reduced salaries were given time to restore their full-time employment and salary levels to qualify for loan forgiveness. The amount eligible for loan forgiveness was conditional on the total loan amount and its use (that is, the proportion of the loan used to finance eligible qualifying expenses, such as payroll, salaries, mortgage/rent payments, and utilities as detailed above). At least 75 percent (lowered eventually to 60 percent) of the loan proceeds had to be used for payroll expenses for the loan's entire principal to be forgiven. If a lesser amount was dedicated to payroll, the forgivable amount would be reduced proportionally.

1.3 Eligible Lenders

Normally, SBA-guaranteed loans are issued by an existing network of banks that are SBA-approved lenders; however, for the purposes of the PPP, the list of lenders with authority to make covered loans was extended to include additional lenders determined by the SBA and the Secretary of the Treasury to have the necessary qualifications to process, close, disburse, and service SBA-guaranteed loans. Many banks, credit unions, fintech lenders, and online lending marketplaces that were not already SBA-approved lenders but were willing to participate in the program were encouraged to apply to become PPP lenders. To provide expeditious relief to small businesses, the SBA gave delegated authority to all approved PPP lenders and streamlined the requirements of the regular Section 7(a) loan programs. Existing SBA loan programs required lenders to assess the borrower's creditworthiness and required borrowers to post collateral and issue a personal guarantee for the loan, as well as a certification that the borrower couldn't secure credit elsewhere. These requirements and other regular 7(a) lending criteria were waived for PPP loans; lenders could rely instead on certifications of the borrower in order to determine borrower eligibility, as well as eligibility of the loan amount, the use of loan proceeds, and the forgivable amount. Lenders had to comply with the applicable lender obligations set forth in the SBA's interim final rule but were not held liable for borrowers' failure to comply with program criteria or for any misrepresentations made by borrowers in connection with a request for PPP loan forgiveness.

1.4 Incentives for Lenders

The SBA reimbursed authorized lenders for originating and processing covered loans at a rate based on the balance of the financing outstanding for the disbursement of the loans,[8] a rate that ranged from 1 percent to 5 percent. In particular, lenders originating PPP loans with total loans outstanding of up to $350,000 would receive a fee of 5 percent of the principal; lenders with PPP loans outstanding from $350,000 to $2 million would receive a fee of 3 percent of the principal; and lenders with PPP loans outstanding above $2 million would receive a fee of 1 percent of the loan principal.

By originating and holding PPP loans on their balance sheets, banks could potentially be exposed to increased regulatory capital requirements.[9] While the CARES Act specified that PPP-covered loans originated by a banking organization would carry a zero percent risk weight and therefore would not affect the bank's risk-based capital requirements, PPP loans held on a bank's balance sheet could potentially affect the bank's leverage-based regulatory capital requirements and its liquidity coverage ratios (LCR). To alleviate this issue and give lenders an incentive to participate, the pertinent regulatory agencies—the Federal Reserve, the Office of the Comptroller of the Currency (OCC), and the Federal Deposit Insurance Corporation (FDIC)— further specified that PPP loans and the lines of credit extended under the PPPLF would be exempt from inclusion in calculations of all regulatory capital requirements of banks and bank holding companies, including risk-based and leverage-based capital and for LCR purposes.

The federal agencies that regulate financial institutions generally require institutions to classify certain loan modifications as troubled debt restructurings (TDRs). The CARES Act and the interim final rule issued by the SBA, in consultation with the Secretary of the Treasury, allowed financial institutions to suspend such requirements on PPP loan modifications. To provide further incentives for lenders to participate, covered PPP loans were eligible to be sold in the secondary market. No fees would be collected by the SBA for any guarantee sold into the secondary market and the loans would continue to receive a risk weight of zero percent. Insured depository institutions and credit unions that would restructure PPP-covered loans were given temporary relief from TDR accounting standards and disclosures for the purposes of compliance with FDIC requirements.

1.5 Program Implementation Hurdles and Overall Success

Since the volume of applications for PPP loans was a multiple of the regular volume for SBA loans, a variety of technical implementation issues arose in the program's initial phase. In the first few days of the PPP, the large volume of applications overwhelmed the SBA's application system and its computers crashed,[10] raising the need to create a backup system. The internal processes of small banks and other approved small lenders faced similar constraints in dealing with the unprecedented volume of applications. Even larger banks such as Wells Fargo and Bank of America ran into capacity problems.[11] Some lenders cited uncertainty about the nature of accountability in borrower screening as another factor that delayed the processing of applications. In the initial phase of the PPP, many of the details about program implementation remained somewhat unclear.

Overall, the PPP provided attractive incentives for both borrowers and lenders to participate in the program. PPP loans had very generous terms compared to existing SBA-backed loans, with an interest rate substantially lower than that under regular 7(a) loan programs (which are commonly used in lender-of-last-resort situations), requiring no SBA and lender fees, and deferring interest and principal payments for at least six months. At the same time, from the lenders' perspective, the interest rate on the loans and the generous origination and processing fees were quite attractive in an environment of very low interest rates. The PPP provided significant flexibility along many dimensions: Because of the reduced eligibility requirements, it had a broad base of potential borrowers; it did not discriminate against applicants who had been denied credit previously; and no pledges of collateral or personal guarantees were needed. Furthermore, the program significantly extended the base of potential lenders beyond existing SBA-approved lenders to include small banks, fintechs, and online marketplaces.

Critical views regarding the program's design and effectiveness were raised along a few dimensions, including whether the program was sufficiently funded to meet the demand for loans, whether credit allocation was in line with the intended aim of the program, and whether the program had the intended effects on employment. While the allocated funds in the first round of the PPP were clearly insufficient, they were replenished in the subsequent rounds. Liu and Volker (2020a) and Granja et al. (2020) show that the geographical distribution of PPP loans in the first round of funding did not reflect the severity of the economic impact of the pandemic. This uneven distribution was later mitigated with the subsequent rounds of funding. Liu and Volker (2020a) point to the importance of relationship lending for the allocation of PPP loans in the first round of the program and to the significant role played by community banks. James, Lu, and Son (2021) confirm these findings and suggest that the focus on relationship lending allowed community banks to respond faster to PPP loan requests than larger banks and to lend more than larger banks relative to their assets. Li and Strahan (2020) also find that bank relationships helped firms access PPP lending. In terms of funding allocation, Barrios et al. (2020) suggest that funds from the PPP have been broadly allocated according to the distribution of eligible payrolls. Granja et al. (2020) suggest that the employment effects of the PPP were small, while Autor et al. (2020) and Barraza, Rossi, and Yeager (2020) find that the program was somewhat successful in meeting its objective of preserving jobs during the pandemic, and that it had statistically and economically significant effects on employment.

2. The Paycheck Protection Program Liquidity Facility (PPPLF)

In order to provide quick relief to small businesses across all affected geographic areas, the SBA encouraged non-SBA-approved lenders to apply to participate in the PPP, pledging an expeditious approval process should applicants be deemed to possess the necessary qualifications to issue SBA-guaranteed loans. There was some initial uncertainty about the criteria that potential lenders would have to meet, raising concerns about the breadth of participation among small lenders. Furthermore, some smaller lenders, community banks, and fintechs reported that given their higher funding costs relative to those of larger banks, the loan terms were not attractive enough to encourage broad participation. Another issue affecting small lenders' incentives to participate in the PPP was their balance-sheet capacity. For larger regulated bank holding companies, a disincentive was the potential effect that holding PPP loans on balance sheet would have on their regulatory capital.

To address funding cost issues, improve liquidity, and create the right incentives for the broadest possible base of PPP-participating lenders, the Federal Reserve, with the backing of the Secretary of the Treasury, announced on April 6, 2020, that it would establish a new Section 13(3) facility to facilitate lending to small businesses through the PPP. Section 13(3) of the Federal Reserve Act allows the Federal Reserve, with prior approval of the Secretary of the Treasury, to extend lending in unusual and exigent circumstances to individuals, partnerships, and corporations through programs with broad-based eligibility. The new facility, the Paycheck Protection Program Liquidity Facility, was aimed at bolstering the PPP by supplying liquidity to financial institutions participating in the program in the form of term financing on a nonrecourse basis backed by the SBA's PPP loans. Liu and Volker (2020b) provide an overview of the intended aim of the facility. Ultimately, the new facility would serve a purpose broadly similar to that of other Section 13(3) facilities—that is, to provide liquidity to credit markets and balance-sheet relief to financial institutions with the aim of supporting economic activity, in line with both the Federal Reserve's role as lender of last resort and its monetary policy mandate. While other emergency facilities set up by the Federal Reserve in response to COVID-19 potentially exposed taxpayers to a small risk of losses due to potential borrowers' default or a fall in the market value of the securities, the full principal of PPPLF credit extensions was backed by PPP loans as collateral, loans that in turn have a full SBA guarantee on their principal value. This lack of credit-risk exposure allowed the Federal Reserve to impose no PPPLF participation fees on borrowers and to charge a low interest rate, thereby encouraging relatively high take-up rates and acting as a significant boost to the PPP.

2.1 Eligible Borrowing Institutions

On April 7, 2020, the Federal Reserve Board, with the approval of the Secretary of the Treasury, authorized each of the regional Federal Reserve Banks to participate in the PPPLF, pursuant to Section 13(3) of the Federal Reserve Act. Initially, the Board announced that eligible borrowers under the PPPLF would be limited to depository institutions originating PPP loans, with a plan to quickly expand eligibility to all other nondepository institutions participating in the PPP. On April 30, 2020, access to the PPPLF was extended to all PPP lenders that had a corresponding banking relationship with a depository institution with a master account at the Federal Reserve. These included banks, credit unions, community development financial institutions (CDFIs),[12] members of the Farm Credit System, small business lending companies, and financial technology firms. Eligible PPPLF borrowers that were depository institutions or credit unions would participate in the facility through the regional Federal Reserve Bank in whose District they were located. CDFIs would apply for a PPPLF credit line extension through the Federal Reserve Bank of Cleveland; members of the Farm Credit System and small business lending companies that were not depository institutions or credit unions would apply through the Federal Reserve Bank of Minneapolis; and all other eligible borrowers would apply through the Federal Reserve Bank of San Francisco. The initial announcement stated that the facility would be operational for extending new lines of credit until September 30, 2020. However, because the PPP was extended beyond the initial phases, the PPPLF termination date for new lines of credit was also extended and was ultimately set at July 30, 2021.

2.2 Terms of Credit

Financial institutions participating in the PPP could finance themselves for issuing PPP loans through the PPPLF, at attractive low rates of 35 basis points (65 basis points below the 1 percent fixed interest on PPP loans) and with no facility participation fees. Only SBA-guaranteed PPP loans would be eligible to serve as collateral for borrowing under the PPPLF, with the principal amount of an extension of credit equal to the principal amount of the PPP loan pledged as collateral.[13] There was no cap on the amount of credit that could be extended to eligible financial institutions, except that the principal could not exceed that of the PPP loans pledged as collateral. Eligible borrowers could pledge PPP loans that they had originated or purchased in the secondary market. Eligible borrowers pledging PPP loans purchased on the secondary market needed to document that they were the beneficiary institution of the SBA guarantee for the loan in order to get a PPPLF credit extension backed by the purchased PPP loans. Extensions of credit under the facility would be made without recourse to the borrower, given that the PPP loans pledged as collateral are fully guaranteed by the SBA. The maturity date of an extension of credit under the facility was set to equal the maturity date of the PPP loan pledged to secure the extension of credit. It would be accelerated if the underlying PPP loan went into default, and the eligible PPPLF borrower would sell the PPP loan to the SBA to exercise the SBA guarantee. Similarly, the maturity date of the extension of credit would be accelerated to the extent of any loan forgiveness reimbursement received by the PPPLF borrower from the SBA. The PPPLF credit line would be extinguished should a borrower sell its PPP loans in the secondary market.

2.3 Impact of Loans on Institutions' Balance Sheets and Their Regulatory Capital

One source of concern about lenders' ability to participate in the PPP was balance-sheet capacity and the effect of loans on regulatory requirements. Capital rules imposed by the federal regulatory agencies (the Federal Reserve, the OCC, and the FDIC) require supervised banking organizations to comply with risk-based capital requirements (based on risk-weighted assets) and leverage capital requirements (based on average total assets or total leverage exposure). By virtue of originating PPP loans and holding them on their balance sheets, banks participating in the PPPLF could potentially be subject to increased regulatory capital requirements. Since PPP loans pledged at the PPPLF do not expose the bank pledging them to any credit or market risk (given the nonrecourse nature of the extension of credit under the PPPLF), the regulatory agencies deemed it appropriate to exclude the effects of PPP-covered loans from banks' regulatory capital. In particular, banks could exclude exposures pledged as collateral to the PPPLF from their total leverage exposure as well as from their average total consolidated assets, their advanced approaches total risk-weighted assets, and their standardized total risk-weighted assets. Similarly, PPP loans would be excluded from calculations pertinent to the community bank leverage ratio. The interim final rule issued by the Federal Reserve in conjunction with the OCC and the FDIC codified these exemptions by specifying that banks originating PPP loans relying on financing under the PPPLF would be exempt from the regulatory capital requirements applied to bank holding companies.

These exemptions, combined with the attractive interest rate, loan origination fees, and the liquidity provided under the PPPL facility, helped give lenders an incentive to participate in the PPP. The additional liquidity PPP lenders obtained through the PPPLF helped increase their capacity to originate additional PPP loans and satisfy the large demand from small businesses for such loans. The lifeline to small businesses that the PPP provided and the boost to the PPP through the PPPLF liquidity injections helped to limit small business failures and to keep workers employed and the economy going.

2.4 Community Development Financial Institutions (CDFIs)

One group of PPP lenders that was strongly encouraged to participate in the PPP and that particularly benefited from access to the PPPLF were community development financial institutions. CDFIs are mission-oriented lenders certified by the Treasury Department that focus on financing small businesses and individuals in low economic opportunity areas, and communities with minority or underprivileged backgrounds. The cost of funding for CDFIs is generally higher than that for traditional banks, which can access the Federal Reserve's discount window and borrow at reasonably low rates in credit markets in the current low-rate environment. Around half of the existing CDFIs are depository community banks, while the rest are loan funds and other nondepository institutions.

CDFIs that are depository institutions and have a master account at a Federal Reserve Bank have access to the Federal Reserve's discount window, while loan funds do not. For loan funds, access to the PPPLF constituted a major incentive to participate in the PPP, by providing a cheap funding source to finance the origination of PPP loans. Access to the PPPLF was also very useful for depository CDFIs that may not have been in "generally sound financial condition" and therefore did not qualify for the discount window's primary credit. The rate for the discount window's secondary credit, at 50 basis points plus the primary credit rate, is significantly higher than the rate for extensions of credit under the PPPLF.

Initially, CDFI loan funds faced hurdles in accessing credit through the PPPLF because of the need to have a corresponding banking relationship with a depository institution with a master account at the Federal Reserve, due to the latter's operational complexities and capacity limits for approvals, as well as the perceived risk. In the early summer of 2020 and during the second round of the PPP, this issue was significantly mitigated as many depository institutions agreed to establish correspondent banking relationships with loan funds and other nondepository institutions participating in the program (Eggleston 2021). CDFIs' broad participation in the PPP was strongly encouraged, given their mission-oriented nature in serving underprivileged communities, which typically have a harder time accessing credit through traditional financial institutions. The CARES Act specifically instructed the SBA to issue guidance to lenders to prioritize small businesses in underserved and rural markets, and those controlled by veterans, members of the military, and individuals in socially and economically disadvantaged communities.

2.5 Fintechs

Media coverage reported that as soon as the CARES Act was announced, and especially once the PPPLF was announced with its attractive incentives for small lenders, several fintech companies lobbied the Treasury Department to allow them to participate in the PPP.[14] On April 9, 2020, the Treasury announced that it would allow fintechs to apply to become PPP lenders. In the first few weeks of the PPP's launch, the SBA approved the applications of a few fintech companies, including PayPal, Intuit, and Square. PayPal announced that it received approval on April 10, and as of the following Monday, it had already received applications and had approved PPP loans. Similarly, on April 13, Square Capital and Intuit's QuickBooks Capital announced they had received approval to become PPP lenders. QuickBooks Capital launched a new, free website, "Intuit Aid Assist," to help small businesses and self-employed individuals assess their eligibility to borrow under the PPP as well as their eligible loan amount. Square Capital announced that it would operate in partnership with Celtic Bank. In the later days of phase one of the PPP and in phase two, several other fintech lenders were approved and disbursed loans, some in collaboration with established traditional bank holding companies. Expansion of the pool of approved PPP lenders to fintech companies sped up and simplified the loan application and disbursement process for many small businesses, given the fintechs' broad geographic coverage, their automated application process, and their relatively more rapid and flexible innovation capabilities compared to the more bureaucratic traditional banks. The presence of fintech lenders may also have helped expand the pool of potential applicants in the first phase of the PPP, since traditional bank lenders had prioritized borrowers with existing banking relationships because doing so involved a lesser need for extensive screening.

2.6 The Program's Effectiveness

Overall, there is evidence that the PPPLF was successful in bolstering the effectiveness of the Paycheck Protection Program. The liquidity provision through the PPPLF enhanced the ability of many small lenders to originate PPP loans, and PPPLF take-up increased significantly in the second half of 2020 and early 2021. Arguably, the introduction of the PPPLF mitigated many of the initial setbacks of the PPP, when small businesses' demand for PPP loans was significantly higher than lenders' capacity to originate and process loans and when the insufficient PPP funds in place were being rapidly exhausted. For example, Anbil, Carlson, and Styczynski (2021), using an instrumental variables approach, find that commercial banks that accessed PPPLF funding originated more than twice as many PPP loans relative to their total assets than banks that did not access PPPLF funding. Lopez and Spiegel (2021) find that both the PPP and the PPPLF had a positive effect on the growth in small business and farm lending in the first half of 2020, with the PPPLF having a significant impact on increasing lending of small and medium-sized banks. The results presented in the next section are in line with these findings, with smaller depository institutions and nondepository institutions relying more on PPPLF funding to finance PPP loan origination.

3. PPPLF Take-Up

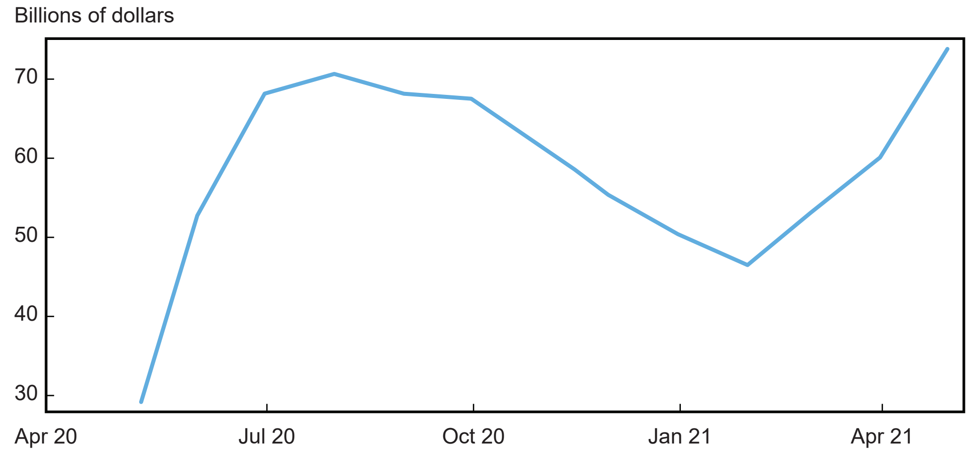
As required by Section 13(3) of the Federal Reserve Act, the Federal Reserve has each week publicly disclosed PPPLF credit extensions on a nationwide aggregated basis. In this section, we examine the distribution of PPPLF loans over time by PPPLF borrower/PPP lender size and industry.

3.1 Aggregate Lending

We begin with the total outstanding balance of PPPLF loans over time, shown in Chart 1. We can see that the aggregate balance jumped sharply in the first few months after the PPPLF became operational; it then gradually declined before rebounding again. The aggregate balance of PPPLF credit extensions can decline for the following reasons: (1) forgiveness of the underlying PPP loans pledged as collateral by the borrowing financial institution; (2) repayment of the underlying PPP loans; or (3) sale by the borrowing institution of the underlying PPP loans in the secondary market or to the SBA to realize the full principal guarantee. As small businesses that received PPP loans apply for and are granted forgiveness, the PPP lenders with PPPLF credit extensions backed by those loans need to draw down the PPPLF balance accordingly, because the collateral needs to match the disbursement. For a similar reason, the PPPLF balance declines when the underlying PPP loans pledged as collateral are repaid by small businesses.

Chart 2 shows the total cumulative balance of PPPLF loans disbursed over time. We can see that the balance gradually increases over the life of the program, with steeper climbs around the early months when the PPPLF became operational in the spring of 2020 and at the

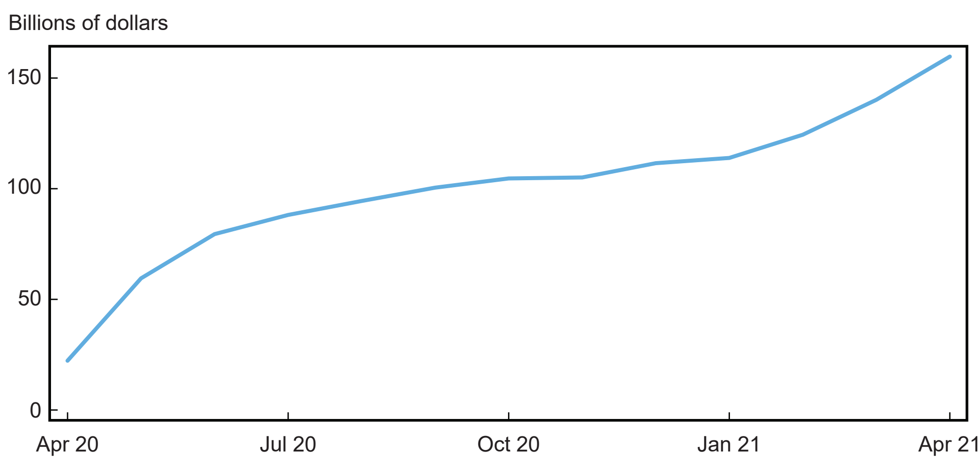
Chart 1
PPPLF Aggregate Loans Outstanding



Sources: PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; authors' calculations.

Note: The chart shows the total outstanding amount of active PPPLF loans from each monthly report for the PPPLF.

Chart 2
Aggregate Cumulative Origination of PPPLF Loans



Sources: PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; authors' calculations.

Note: The chart shows the total cumulative amount of PPPLF loans originated over time.

beginning of 2021. The later jump in the PPPLF can be explained by a rule in the Economic Aid Act, passed on December 27, 2020. The rule allowed both first-draw loans for small businesses that did not borrow in the first and second rounds of the PPP and second-draw loans for those that had existing PPP loans and applied for new loans due to continuing exigence. The extension of eligibility to second-draw loans stimulated another wave of PPP lending, followed by PPPLF applications for credit extensions by PPP lenders.

3.2 PPPLF Loan Distribution by PPPLF Borrower/PPP Lender Category

To understand the distribution of PPPLF credit lines by borrowing financial institutions, Charts 3 and 4 break down outstanding balance and cumulative origination by borrower type.

We determine PPPLF borrower/PPP lender type by merging PPPLF data with RSSD attributes and bank asset sizes (based on RSSD ID or ABA number)[15] as per the December 2020 disclosure summary of the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository Public Data Distribution website, which contains call reports and uniform bank performance reports for most FDIC-insured institutions.

We classify regional banks (including national banks) as participating institutions with more than $10 billion in total assets, community banks (including CDFIs that are depository institutions) as those having less than $10 billion in assets, and the remaining institutions for which assets and attributes are not available based on the FFIEC repository as nondepository institutions. All PPPLF-participating financial institutions are classified into one of the three categories.

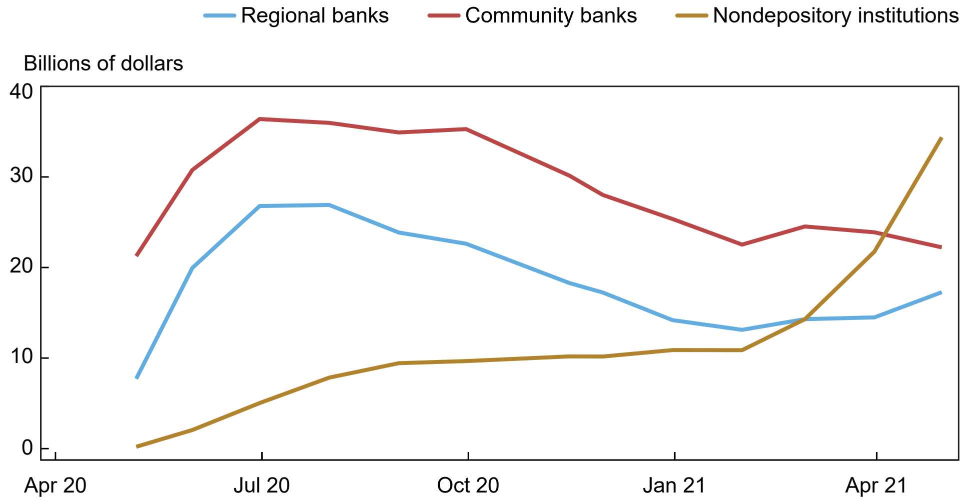
From Charts 3 and 4, we can see that at the beginning of the PPPLF, increases in the balance were mainly driven by national, regional, and community banks. The second surge in the PPPLF balance in early 2021 largely came from nondepository institutions.

To shed more light on the distribution of PPPLF loans by PPPLF borrower/PPP lender category relative to PPP loan originations, we merged the above data (PPPLF disclosures, RSSD attributes, and asset size from the FFIEC reports) with the PPP data disclosed by the SBA. The main difficulty in merging the data is that the SBA's PPP disclosures do not provide the ABA number or RSSD ID of the lending financial institutions. Participating institutions originating PPP loans are instead identified in the data based on their unique name and the city and state in which they are located. While the matching is not perfect, we follow a detailed data-cleaning process to match the reported names and locations with the information available from the PPPLF disclosures, and we manually confirm that the maximum number of lenders is matched across data sets.

Next, we study reliance on the PPPLF by institution type. Chart 5 illustrates cumulative PPPLF credit lines by institutional category following the classification delineated above. Community banks and CDFIs that are depository institutions borrowed the most from the PPPLF, followed by nondepository institutions. National and regional banks borrowed the least.

Chart 6 shows the total PPP distributed loan amounts by lender type, for the matched sample with PPPLF borrowing institutions. Since not all PPP lenders applied for PPPLF

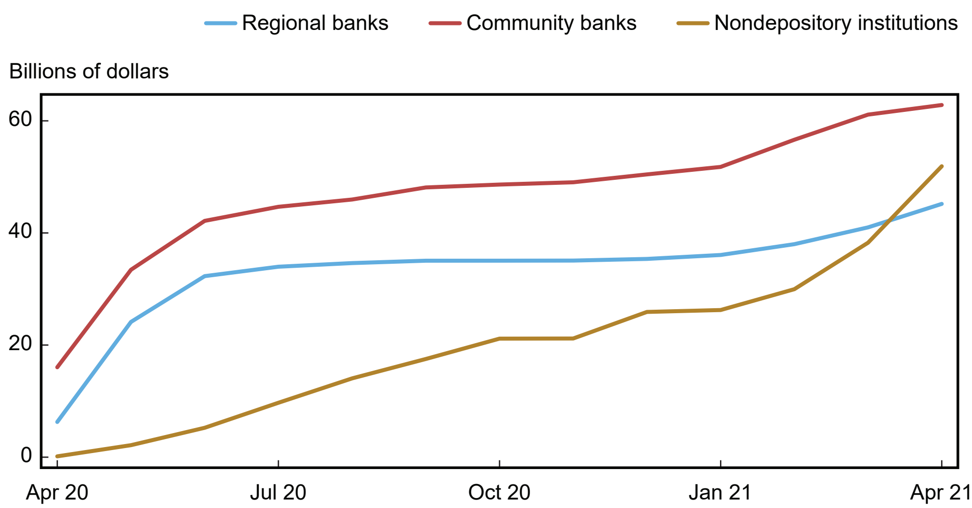
Chart 3
PPPLF Loans Outstanding by PPPLF Borrower



Sources: PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the total outstanding amount of active PPPLF loans, broken down by PPPLF borrower.

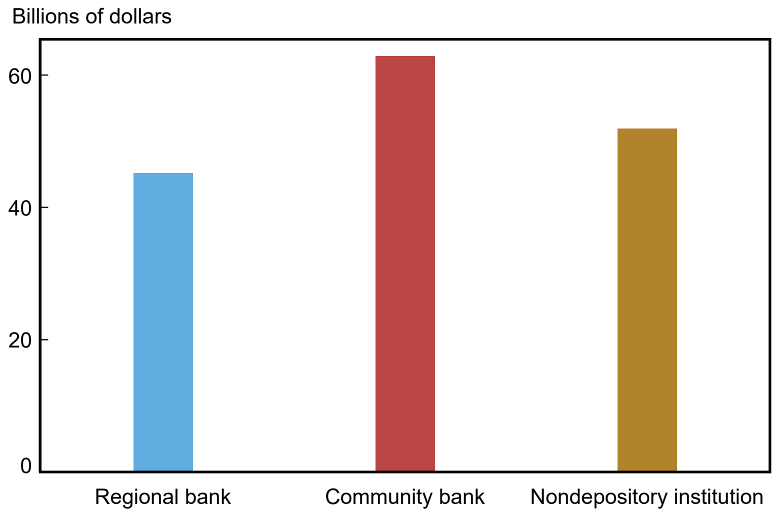
Chart 4
Cumulative PPPLF Loan Origination by PPPLF Borrower



Sources: PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the total cumulative amount of PPPLF loans originated over time, broken down by PPPLF borrower.

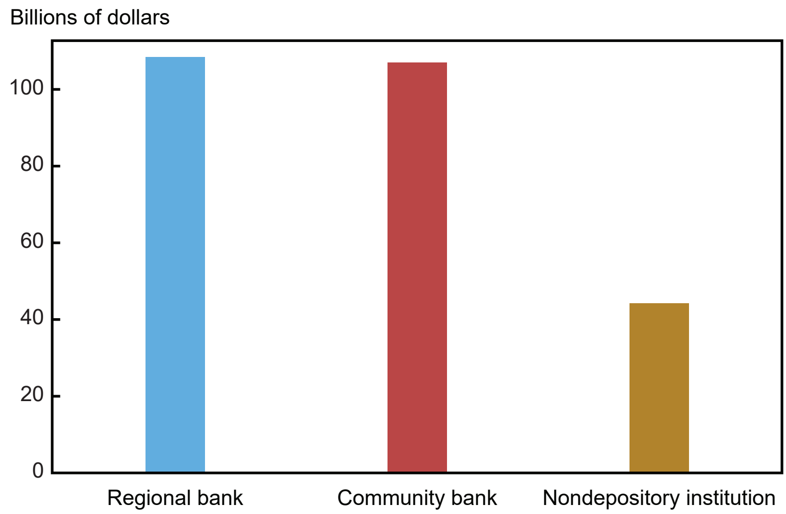
Chart 5
Total PPPLF Borrowed by Institution Type



Sources: PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the cumulative PPPLF amount borrowed by institution type.

Chart 6
Total Dollar Amount of PPP Loans Disbursed by PPP Lender



Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows total PPP loans originated by each lender type for the matched sample of PPP lenders with PPPLF borrowers.

credit lines, the total PPP loan amounts shown in the chart are only a fraction of the entire PPP loan disbursements[16]. The limited coverage may also be due (although to a lesser extent) to the inherent issues with matching the data, given that the reported classifications of PPP lenders and PPPLF borrowers in the data disclosures are not perfectly aligned.

The matched data suggest that regional and national banks, as well as community banks (including CDFIs that are depository institutions), were the largest PPP loan originators, lending at similar levels in terms of dollar amount among the matched PPPLF borrower/PPP lender group. Nondepository institutions, on the other hand, originated less than half the dollar amount of PPP loans originated by regional and community banks as per our classification.

This may be the case for several reasons. First, nondepository institutions are more likely than depository institutions to lend to the smallest of small businesses, since larger and more established small businesses are more likely than smaller ones to have existing banking relationships. The maximum principal dollar amount of PPP loans is based on payroll numbers (over a representative month in the previous year); therefore, smaller businesses can apply for smaller loans relative to larger businesses with higher payroll numbers. Second, nondepository institutions had a slower start in participating in both the PPP and the PPPLF—the PPP because of the requirement to be an SBA-approved lender, and the PPPLF because of the delayed eligibility and the need to have a correspondent banking relationship with a depository institution with a master account at the Federal Reserve. Third, again the limitations inherent in the data matching and classification given the data constraints in the disclosures imply that some misclassification of institutions or matched PPP lender/PPPLF borrower pair cannot be ruled out.

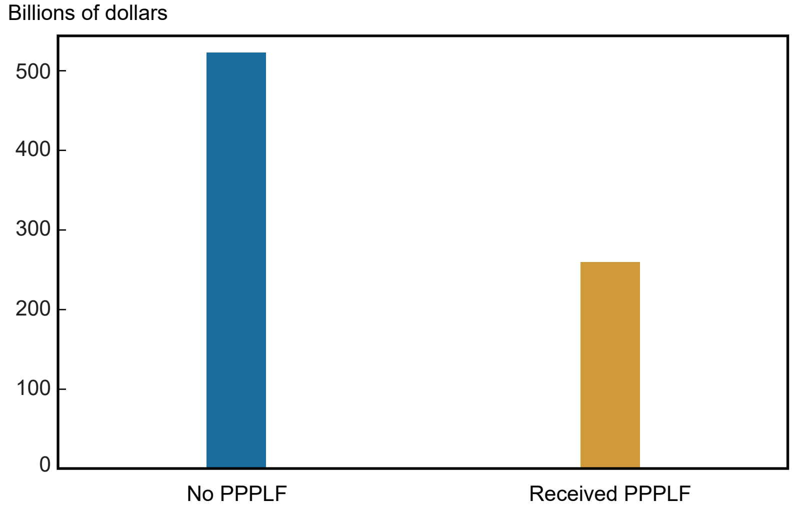
Looking at this issue from a different angle, Chart 7 shows the total PPP distributed loan dollar amounts for PPP lenders with PPPLF credit lines compared with those that relied on other funding sources to finance PPP loan origination.

As we can see, PPP lenders that borrowed from the PPPLF to finance PPP loan originations issued a significantly smaller PPP loan dollar amount. Since PPP loans are proportional to the small businesses' payroll numbers, the dollar amount of PPP loans originated depends on the average size of the small businesses served by the PPP lender. A lender could originate many PPP loans and still have a relatively low total dollar amount of PPP loans outstanding depending on its PPP clientele base. This is confirmed by Charts 8 and 9. Chart 8 shows the total number of PPP loans originated by each lender category for the matched PPP lender/PPPLF borrower sample. Nondepository institutions originated a disproportionately large number of loans relative to the total disbursed dollar amount. Chart 9 shows total PPP loans disbursed by PPP lenders that received PPPLF credit extensions and those that did not. The difference in the number of PPP loans disbursed by PPPLF participating and nonparticipating institutions is a lot smaller than that based on dollar amount disbursed. Taken together, these results are in line with the conjecture that smaller PPP lenders and nondepository institutions are more likely to attract small businesses at the lower end of the size scale, which have fewer employees and lower payroll costs.

Chart 10 adds to these findings by showing the ratio of the PPPLF credit line balance to the dollar amount of PPP loans extended for each institution type in the matched PPPLF

Chart 7

Total PPP Loan Dollar Amount Disbursed

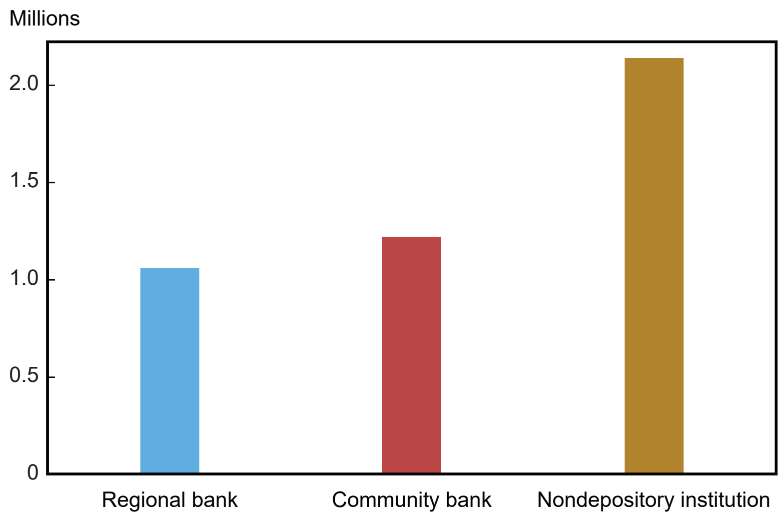


Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the total dollar amount of PPP loans disbursed by PPP lenders that received PPPLF credit extensions and those that did not.

Chart 8

Total Number of PPP Loans Disbursed by Lender Type

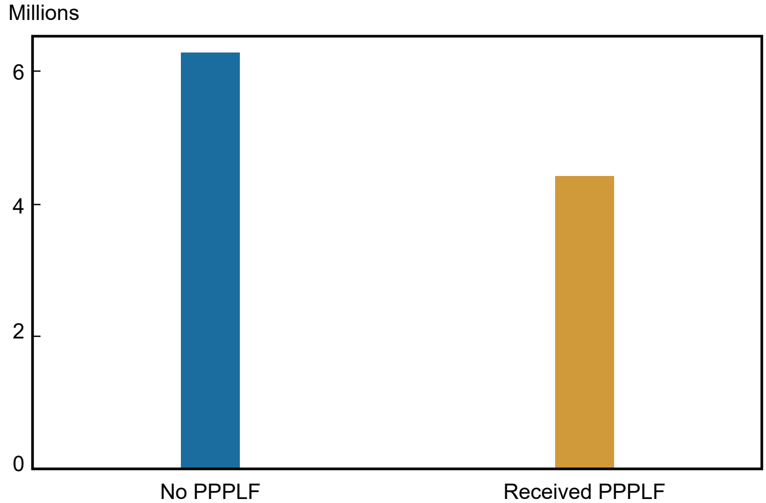


Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows total PPP loans originated by each lender type for the matched sample of PPP lenders with PPPLF borrowers.

Chart 9

Total Number of PPP Loans Disbursed by PPPLF Participation Status

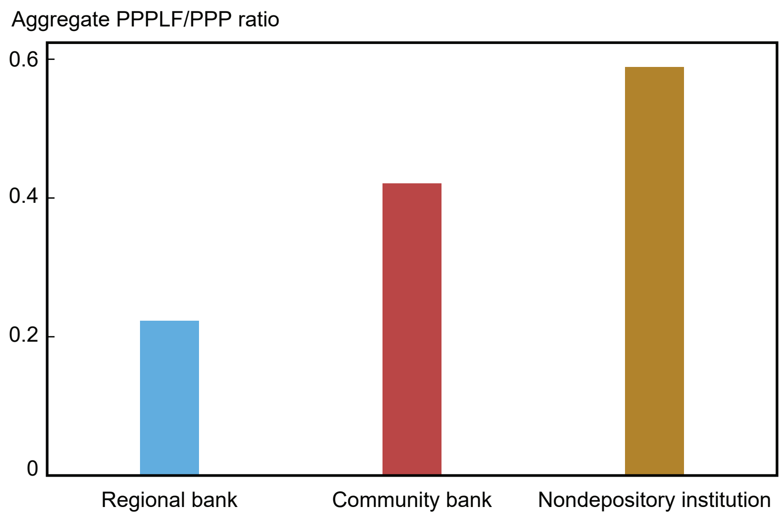


Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows total PPP loans disbursed by PPP lenders that received PPPLF credit extensions and those that did not.

Chart 10

Fraction of PPP Loans Funded with PPPLF Borrowing



Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the fraction of PPP loans originated that were funded by PPPLF borrowing, broken down by lender type.

borrower/PPP lender sample. We can see that reliance on PPPLF borrowing to finance PPP loan originations declines with the asset size of the financial institution. National and regional banks (with more than $10 billion in assets) rely the least on the PPPLF to finance PPP loans, with about 20 percent of the PPP loans financed by liquidity obtained through the PPPLF.

Community banks and nondepository institutions, on the other hand, relied more heavily on PPPLF financing, with about 40 percent and 60 percent, respectively, of their PPP loan originations funded through the PPPLF. One explanation for the lower use of the PPPLF by national and regional banks is that during the course of the pandemic, banks saw a large inflow of deposits from both consumers and corporate clients, providing an alternative funding source. This is in line with the pattern of PPPLF usage seen in Chart 5.

Erel and Liebersohn (2020) find that fintechs were disproportionately used in zip codes with fewer bank branches, lower incomes, and a larger minority share of the population, as well as in industries with little ex ante small business lending, suggesting that fintechs expanded the overall supply of PPP lending rather than substituting for traditional banks. Our results suggest that nondepository institutions (which include fintechs) took disproportionate advantage of the PPPLF to fund PPP loans and were likely to have served smaller businesses. Taken together with the evidence in Erel and Liebersohn (2020), our results indicate that the PPPLF played an important role in expanding the supply of credit to PPP lenders, allowing the origination of more PPP loans in underserved areas.

3.3 Geographical Distribution of Loans for Community Banks

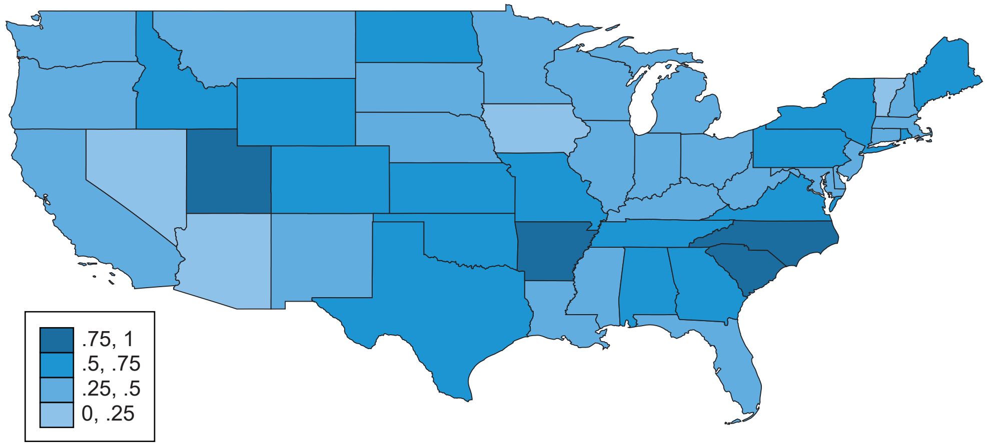
The ratio of the cumulative dollar amount of PPPLF borrowing to the cumulative dollar amount of PPP loans originated by community banks by state is shown in Exhibit 1. Community banks here are defined as depository financial institutions with less than $10 billion in total assets, including CDFIs that are depository institutions. While the geographical distribution of PPPLF borrowing by community banks for PPP loan origination is fairly equal across states, community banks located in the Great Plains, the South, and the Northeast seem to have borrowed relatively more from the PPPLF to finance PPP loan origination.

3.4 Loan Distribution by Industry

In what follows, we look at the breakdown by industry of the small businesses that received PPP loans, for those loans originated by PPP lenders that received PPPLF funding and those that did not receive PPPLF funding. To do this, we first calculate the cumulative PPP loans received by small businesses in a given industry (based on NAICS codes) that were originated by each type of financial institution (using our three-category classification for lender type based on total assets). We then link these to the matched PPPLF borrowing/PPP lending financial institutions to obtain the industry breakdown of PPP loans originated for financial institutions that received PPPLF funding.

Exhibit 1

PPPLF Borrowing/PPP Lending Ratio for Community Banks by State



Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The map shows the ratio of cumulative PPPLF borrowing to PPP loans originated for community banks, based on the state in which the community bank is located.

Chart 11 shows this breakdown. As we can see, PPP lenders that received PPPLF funding disbursed PPP loans to small businesses across different industries in a way that is largely similar to that of PPP lenders that did not receive PPPLF funding.

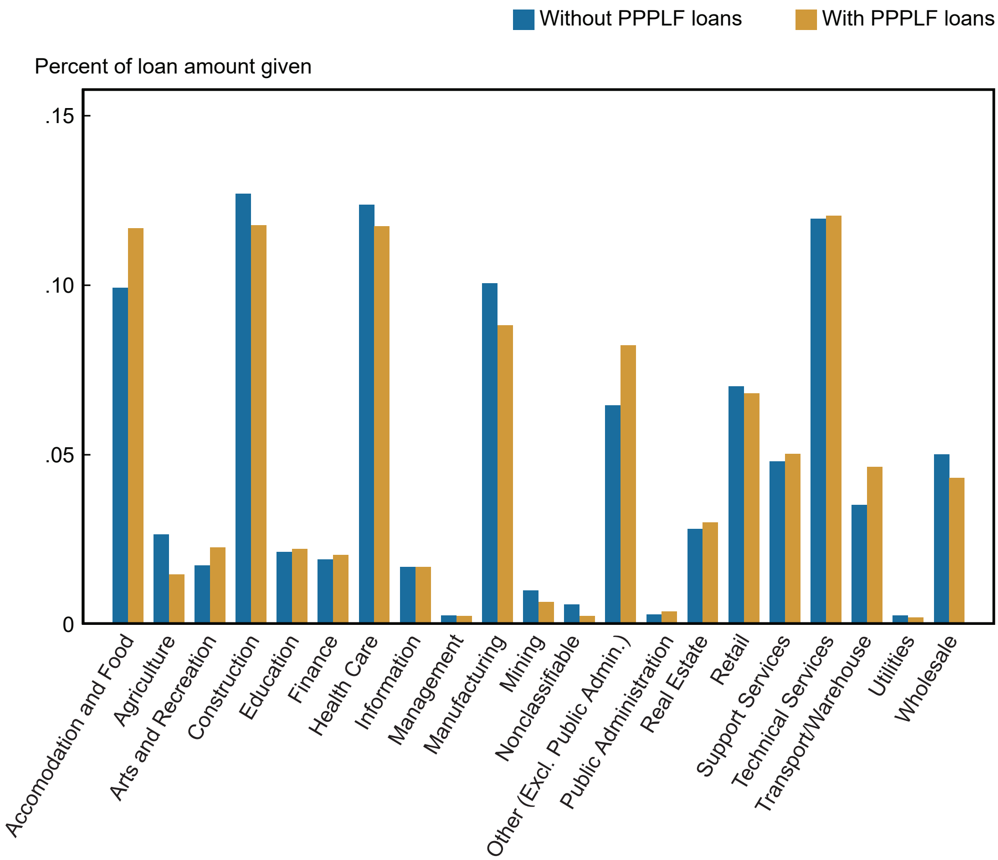
We take a deeper look at this issue and show the breakdown by industry (of the small businesses receiving PPP loans) for PPP lenders that did receive PPPLF funding, broken down by lender type. We proceed as above and calculate total PPP loans by industry for each financial institution type. Then we match the PPPLF borrowers to PPP lenders and categorize the loans according to institution type (using our categorization based on total assets: regional bank, community bank, and nondepository institution), conditioned on having received PPPLF funding. We then show the (dollar amount) ratio of PPP loans disbursed by industry for each institution type relative to its total PPP loans disbursed.

Chart 12 shows this breakdown. Regional and community banks behaved similarly in terms of disbursing PPP loans to small businesses across sectors. However, nondepository institutions that borrowed from the PPPLF seem to have financed a slightly different clientele of small businesses with PPP loans, with a higher concentration in Transport and Warehouse Services, Support Services, Retail, and "Other" (which includes all other sectors not categorized, excluding Public Administration).

Overall, the evidence presented in this section suggests that PPPLF take-up has been significant. Furthermore, it suggests that smaller PPP lenders (including nondepository institutions) relied more heavily on PPPLF financing to originate PPP loans, and that they were likely to serve smaller businesses with fewer employees and lower payroll costs. When it comes to loan

Chart 11

Industry Breakdown of PPP Loans Originated by Financial Institutions That Received and Did Not Receive PPPLF Funding



Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the share of PPP loans given to small businesses in different industries by institutions that received PPPLF funding and those that did not.

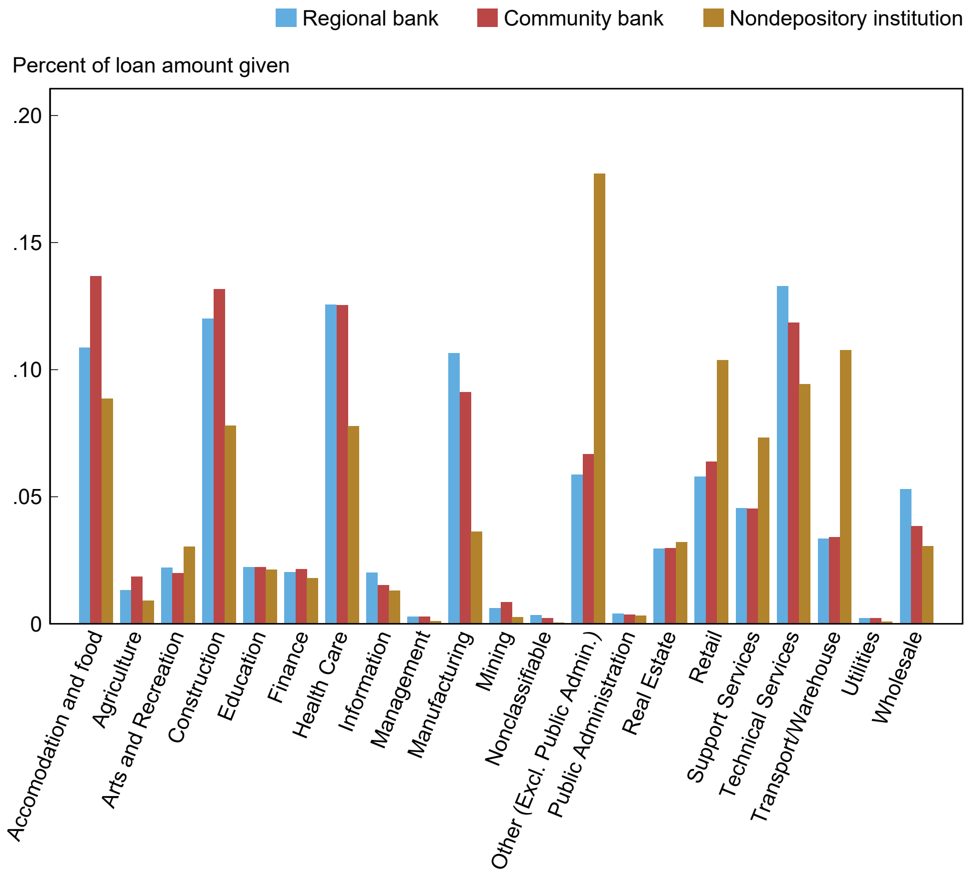
distribution by industry, there are no major differences between PPPLF-participating and PPLF-nonparticipating institutions.

4. Conclusion

In this article, we laid out the background and rationale for the creation of the Federal Reserve's Paycheck Protection Program Liquidity Facility. We covered the salient features of the PPP and the PPPLF, discussed the intended aim of the facility, and analyzed the facility's

Chart 12

Industry Breakdown of PPP Loans Originated by Type of Financial Institution, Conditional on Receiving PPPLF Funding



Sources: PPP reports from the U.S. Small Business Administration; PPPLF transaction-specific disclosures from the Board of Governors of the Federal Reserve System; institution characteristics from the Federal Financial Institutions Examination Council's (FFIEC) Central Data Repository; authors' calculations.

Note: The chart shows the breakdown by industry of PPP loans originated for PPP lenders that received PPPLF funding, by lender type.

loan take-up and impact on lender participation in the program and on PPP loan disbursements.

Empirical evidence based on the available data suggests that the PPPLF helped bolster the Paycheck Protection Program's effectiveness. By facilitating access to credit for all PPP lenders at low rates and with a duration matching that of the underlying PPP loans, it gave lenders an incentive to participate in the PPP. The affordable access to credit was of particular relevance for smaller institutions with less than $10 billion in total assets and for nondepository institutions, increasing the ability of these lenders to originate PPP loans. We showed that smaller PPP lenders (including nondepository institutions) relied more heavily on PPPLF financing to originate PPP loans. Given that smaller lenders are generally more likely to reach communities underserved by larger traditional banks, the facility may have helped satisfy the guidance in the CARES Act to focus especially on providing relief to small businesses in underprivileged communities.

Furthermore, by giving favorable regulatory capital treatment to PPP loans pledged as collateral to the facility by supervised depository institutions and creating the necessary conditions for a liquid secondary market for PPP loans, the PPPLF may have helped give further impetus to broader participation by lenders in the PPP. Even though PPPLF participation is lower for larger banks than for smaller banks and nondepository institutions, the assurance of having backstop PPPLF funding available to finance PPP loan origination is likely to have positively affected PPP loan origination by larger banks as well. The positive impact of the establishment of the PPPLF comes with no expected loss to the Federal Reserve and hence taxpayers. Access to PPPLF credit is fully collateralized by pledged PPP loans, with the same principal amount and maturity as the extended loans, and PPP loans enjoy a full SBA guarantee with respect to both principal and interest.

Notes

Acknowledgments: The author thanks Haoyang Liu for helpful discussions and feedback, an anonymous referee, and Dean Parker for excellent research assistance.

[1] Details on the program can be found at https://www.sba.gov/funding-programs/loans/covid-19-relief-options/paycheck-protection-program.

[2] An overview and details on the facility can be found at https://www.federalreserve.gov/monetarypolicy/ppplf.htm.

[3] Eligible businesses included nonprofits, sole proprietorships, eligible self-employed individuals, independent contractors, veterans' organizations, and Tribal business concerns. Freelancers or contract or gig economy workers could also apply. The term "employee" included individuals employed on a full-time, part-time, or other basis, and businesses in certain industries could have more than 500 employees (up to 1,500 employees) if they met certain SBA criteria. The SBA applies complex affiliation criteria about parent companies and subsidiaries in order to determine a business's size; however, these were waived for the purposes of PPP loans for certain businesses. The SBA's interim final rule further specified that a business's employees must have their principal place of residence in the United States.

[4] Applicants were ineligible for PPP loans if they were household employers, if any of the business's owners were delinquent or had defaulted on a loan from any federal agency, or if they had engaged in illegal activity or had been convicted of a felony in the last five years.

[5] Borrowers that did not have such documentation were required to provide other supporting documentation, such as bank records, to demonstrate a qualifying payroll amount.

[6] The maximum loan amount calculation was subject to a cap of $100,000 annual salary per employee. For seasonal employers, this was set to 2.5 times the average monthly payments for payroll during the twelve-week period beginning February 15, 2019, or March 1, 2019.

[7] The CARES Act specifies that the interest rate on these loans should not exceed 4 percent. The SBA and the Secretary of the Treasury initially set the interest rate at 0.5 percent. However, at a news conference on April 2, Secretary Mnuchin announced that the interest rate would be raised to 1 percent to encourage smaller lenders, including community banks, to participate in the program.

[8] The fee reimbursement was to be made no later than five days after the disbursement of the covered loan.

[9] Lenders could request that the SBA purchase the expected forgiveness amount of the PPP loan or pool of loans at the end of week seven of the covered period of an originated PPP loan. Before that date, the lender had to either hold the loan on its balance sheet or sell it in the secondary market.

[10] See "SBA Computer System Crash Further Tangles PPP Loan Process," *PYMNTS.com*, April 7, 2020, at https://www.pymnts.com/loans/2020/sba-computer-system-crash-further-tangles-ppp-loan-process and "Small Business Loans Site Crashes On First Day Of Reopening," *NPR*, April 27, 2020, at https://www.npr.org/sections/coronavirus-live-updates/2020/04/27/846197794/small-business-loans-site-crashes-on-1st-day-of-reopening.

[11] See "How Central Texas' Community Banks Are Handling the Deluge of PPP Loan Applications," *Austin Business Journal*, April 6, 2020, at https://www.bizjournals.com/austin/news/2020/04/06/how-central-texas-community-banks-are-handling-the.html; "Judge: Banks Can Restrict PPP Applicants to Current Customers," *Arkansas Bankers Association*, April 14, 2020, at https://www.arkbankers.org/ABA/Resource_Center/bank_industry_news/Judge__Banks_Can_Restrict_PPP_Applicants_to_Current_Customers.aspx; and "Bank of America Fields 10,000 Applications Hourly for SBA's Small Business Relief Program," *San Francisco Business Times*, April 3, 2020, at https://www.bizjournals.com/sanfrancisco/news/2020/04/03/bank-of-america-fields-10-000-applications-hourly.html.

[12] CDFIs are financial institutions, as defined in Article 12 U.S.C. Section 4702, that are not depository institutions or credit unions.

[13] PPP loans pledged as collateral would be valued at the full principal amount of the PPP loans, given the full SBA guarantee.

Notes (Continued)

[14] See, for example, "Lenders Get 2nd Chance to Correct PPP Flaws," *Banking Dive*, April 27, 2020. https://www.bankingdive.com/news/lenders-second-chance-correct-ppp-flaws/576811/.

[15] RSSD IDs are unique identifiers assigned to commercial banks or bank holding companies by the Federal Reserve, used to identify institutions in regulatory reports, such as the Call Report and Y9-C. ABA routing numbers are identifiers assigned by the American Bankers Association to federal or state chartered financial institutions eligible to maintain an account at a Federal Reserve Bank.

[16] As described in Section 1, PPP loan approvals through May 31, 2021, amounted to nearly $800 billion.

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