Fed Brief

15 April 2020

A summary of Fed policy responses to COVID-19

As the coronavirus disease 2019 (COVID-19) pandemic reached a critical stage in the US in March 2020, the Federal Reserve ("the Fed") moved quickly to add liquidity, lower borrowing costs, and support credit flows to affected households and businesses. Beginning with a cut to the target for the federal funds rate after an unscheduled meeting on 3 March, and continuing as the scope of the crisis became clearer, the Fed employed a rapidly growing list of tools—some familiar and some novel—to aid market functioning, limit harmful fire-sale dynamics, and promote credit provision to households and businesses affected by COVID-19. The volume of the Fed's asset purchases has already exceeded those made during the first two months of the global financial crisis. In this report we summarize the main components of the Fed's recent policy actions.

Conventional monetary policy tools

Among the Fed's earliest actions were cutting interest rates and signaling about the course of the federal funds rate, enhancing the use of the discount widow, and lowering reserve requirements to zero.

Federal funds rate reduced to the effective lower bound; qualitative forward guidance.

The federal funds rate is the overnight lending rate at which banks borrow reserves from one another. Calling it "the" federal funds rate is shorthand; the "effective federal funds rate", which is commonly but somewhat inaccurately referred to as the federal funds rate, is the volume-weighted median of rates charged on overnight loans in the fed funds market, which can span a wide range.

Though it does not control federal funds rates directly, the Fed sets a target range for the effective federal funds rate as a matter of policy and then influences the rate primarily through the Fed's own administered rates, the interest rate on excess reserves (RIOER) and the overnight reverse repo rate (RON-RPP). The federal funds rate influences other short-term rates. In principle, lower interest rates reduce the cost of borrowing and thereby stimulate economic activity. Since the end of the global financial crisis, the Fed has generally moved the target gradually, in 25 basis-point increments. This March, in two steps announced on 3 March and 15 March, the Fed slashed the target by 1½ percentage points to a range of 0% to ¼%, the "effective lower bound". It was only getting started with its COVID-era policy moves.

The Fed's signaling of its intentions for future interest-rate policy, a practice called "forward guidance", is another key tool of monetary policy used since the global financial crisis. The Fed uses forward guidance to guide market expectations and ensure better transmission of its interest rate policy from short-term rates to longer-term bond yields and borrowing costs. Forward guidance in the Fed's COVID-19 messaging has been notably vague in the sense that it is not conditioned on specific, verifiable performance benchmarks for the economy. Vague guidance reflects a high degree of uncertainty about the length of time during which it will be appropriate to hold the federal funds rate close to zero. It also possibly reflects concern that more-explicit forward guidance might convey too much pessimism by policymakers about the economic outlook, undermining confidence further. Instead, the

Contacts
David Deull, david.deull@ihsmarkit.com
Ken Matheny, ken.matheny@ihsmarkit.com

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Fed is attempting to convey a "whatever-it-takes" posture, as in remarks by Chair Powell on 9 April, in which he stated that the Fed would "continue to use these powers forcefully, proactively, and aggressively until we are confident that we are solidly on the road to recovery".

Discount window borrowing encouraged

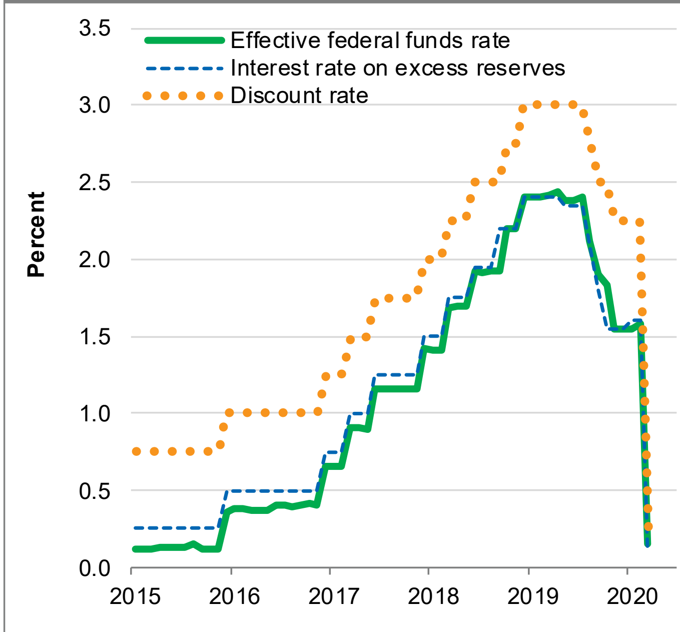
The Fed's discount window provides a backstop of liquidity to the banking system. Through the discount window, the Fed offers collateralized loans to banks at set rates including the "primary credit" rate, also known as the "discount rate", which is typically above the federal funds rate. The discount window acts as a safety valve by ensuring that banks always have a source of liquidity available even when they experience difficulties sourcing liquidity elsewhere. In normal times, the discount window is rarely used by banks that are in sound financial condition, as borrowing from the discount window is usually more expensive than borrowing in the federal funds market. Stigma also typically plays a role in limiting the discount window's use: banks perceive that borrowing from the discount window could be interpreted as a sign of financial distress.

The Fed announced on 15 March that it would make the terms for borrowing from the discount window substantially more generous to ease burdens on banks and better enable them to extend credit. First, the Fed lowered the discount rate to 0.25%, thereby reducing to zero (from 0.50%) the spread to the upper end of the target range for the federal funds rate. This resulted in a 200 basis-point reduction in the discount rate during the month. Second, the Fed made available loan maturities of up to 90 days, when previously such loans were only provided on a very short-term basis (typically overnight). In addition, Fed messaging encouraged the use of the discount window in an attempt to destigmatize it. The following day, some of the largest and best-capitalized banks announced they would borrow at the discount window.

Reserve requirements lowered to zero

Historically, banks have been obligated to maintain reserves at least equal to a specified ratio to certain

Federal reserve interest rates



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deposits, a rule known as "reserve requirements". In theory, the reserve requirements ratio (expressed as the ratio of required reserves to relevant deposits) influences the size of banks' balance sheets and the availability of bank-intermediated credit; a lower reserve requirement creates more room to expand credit and can contribute to lowering borrowing costs.

Since the global financial crisis, when the Fed vastly expanded its holdings of securities and began paying banks interest on reserves, reserve requirements have played a very minor role as banks typically maintain reserves far in excess of their requirements. Nevertheless, on 15 March, the Fed reduced reserve requirements all the way to zero for the first time, essentially expanding the capacity of the banking system to provide loans.

Large-scale asset purchases and short-term repo lending

During the global financial crisis, the Fed purchased Agency debt, Agency Mortgage-Backed Securities (AMBS), and Treasury securities (Treasuries) at a variety of maturities in programs informally known as "quantitative easing" (QE). Its goal was to lower interest rates for long-term securities in addition to the short-term rates over which the Fed had more direct control. As of 2014, the Fed had approximately $2.5 trillion of Treasury securities and $1.5 trillion of AMBS on its balance sheet. In late 2018, the Fed judged that the economic recovery had gained enough traction to allow it to gradually draw down its holdings of these securities, which it did at rates of up to $50 billion a month.

This phase, referred to by some as "quantitative tightening", didn't last long. In September 2019, as bank reserve balances had declined to less than $1.4 trillion, stress developed in short-term funding markets, suggesting that the level and distribution of reserves in the banking system were insufficient to meet heightened demand for liquidity arising from quarterly tax payments and a bulge in settlements for Treasury auctions. The Fed reacted initially by offering short-term repurchase agreements ("repos") to financial institutions, which injected reserves into the banking system on a temporary basis. In October, it resumed purchases of Treasuries and AMBS to effect a more durable increase in bank reserves.

In response to the COVID-19 crisis, the Fed has put large-scale asset purchases and short-term repo operations into overdrive, vastly expanding the volume of its purchases as well as broadening the types of securities on its balance sheet. To wit:

- **Repos.** As of the end of December 2019, the Fed had offered a daily limit of at least $150 billion in overnight repo. In March, it expanded this limit to $175 billion, as well as adding offerings for repos of longer maturities: a daily limit of at least $45 billion for 14-day term repos, and several times per week, a combination of one- and three-month repo offerings with greatly expanded limits of at least $500 billion. In practice, demand for funds through the Fed's repo operations took place far below the offering limits, including some instances beginning in late March when demand was close to zero, indicating that the financial system had ample liquidity for short-term funding.
- **Treasuries.** From October 2019 through February 2020, the Fed purchased Treasury securities at the pace of approximately $60 billion per month. Moving forward to 23 March, the Fed announced it intended to purchase approximately $75 billion of Treasuries each business day in that week, to be continued as needed to support market functioning. All told, the Fed's holdings of Treasury securities expanded by $993 billion between 18 March and 8 April, to $3,634 billion.
- **Agency mortgage-backed securities (AMBS).** On 23 March the Fed expanded its program of large-scale purchases of AMBS (which are issued by one of the three major quasi-governmental mortgage agencies). Between 18 March and 8 April, the Fed's holdings of AMBS expanded by $93 billion to $1,456 billion.
- The Fed also announced on 23 March that it would include **agency-guaranteed commercial mortgage-backed securities (ACMBS)** in its purchases, which it had not previously done, in response to signs of distress and illiquidity in the commercial mortgage market. As of 8 April, the Fed held nearly $3.5 billion in ACMBS.

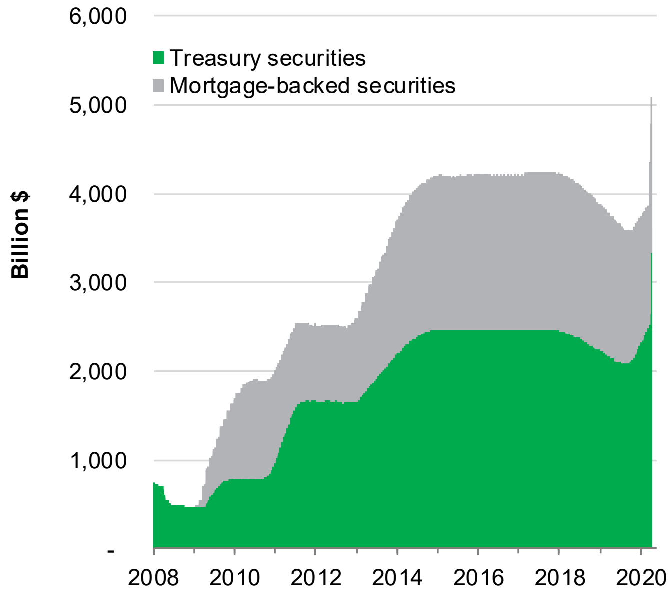
As of 8 April, the total assets on the Fed's balance sheet had expanded to $6.0 trillion, from $4.2 trillion on 4 March. This $1.8-trillion increase outpaced the $1.3 trillion expansion between early September 2008 and mid-November 2008, during the first wave of purchases undertaken by the Fed to combat the spreading global financial crisis.

Other lending facilities

In addition to those measures, the Fed has revived, and in some case innovated, a host of new programs designed to offer credit and liquidity to several specific sectors. The programs with precedents in the global financial crisis include:

- **The Commercial Paper Funding Facility (CPPF).** This program, announced 17 March, commits the Fed to purchasing highly rated, US dollar-denominated commercial paper (CP), a common type of unsecured, short-term corporate debt. The Fed will lend to a Special Purpose Vehicle (SPV) to provide this funding in order to comply with statute.[1] Purchases of CP through the CPFF will expand the size of the Fed's balance

Federal Reserve securities holdings



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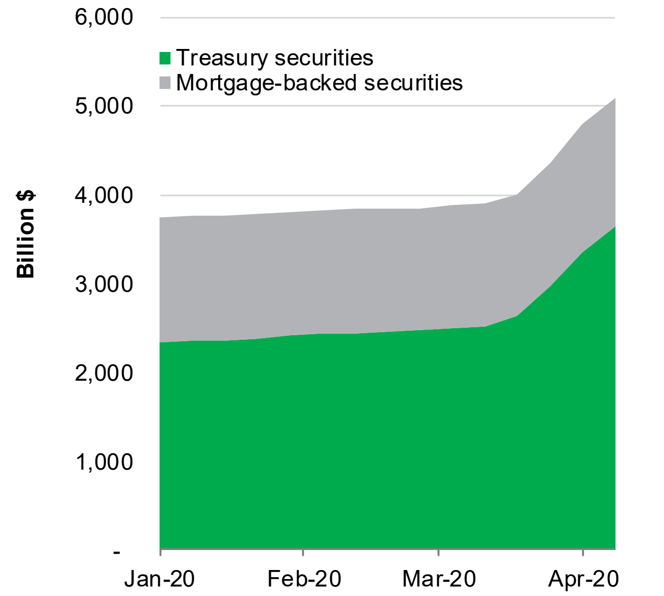

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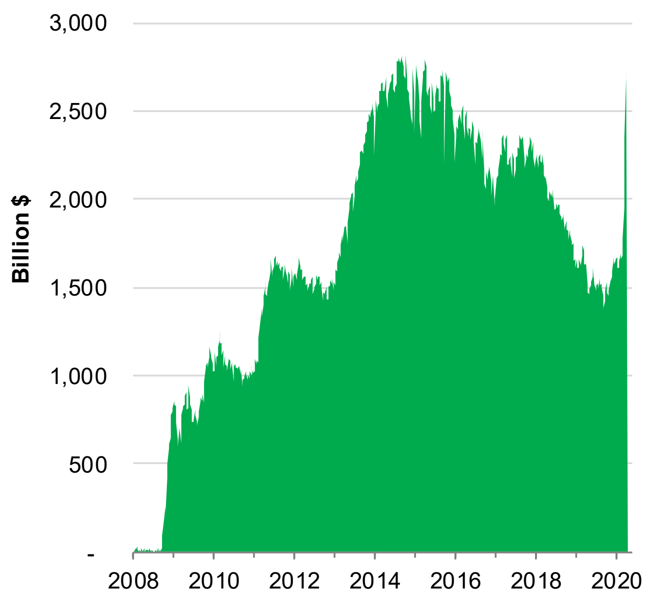
Reserve balances with the Fed



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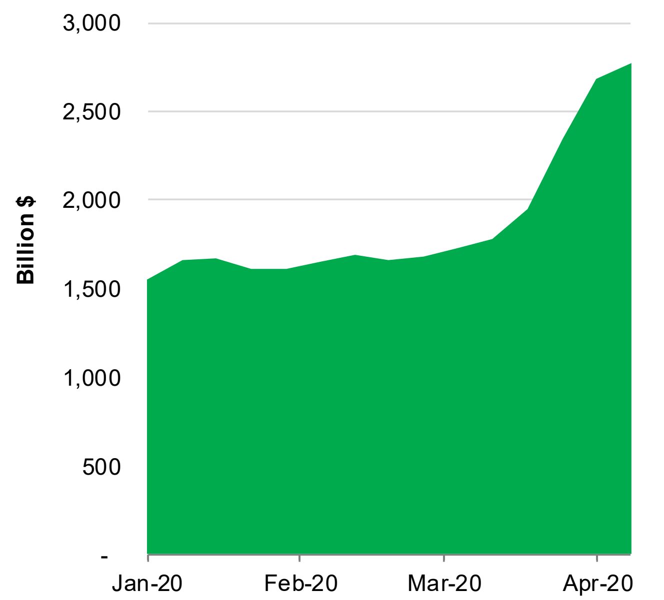

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1. **Special Purpose Vehicles (SPVs) and Section 13(3) authorization:** The Federal Reserve was established by Congress with the passage of the Federal Reserve Act of 1913, which delineates its statutory mandates, authorities, and limitations. Most credit facilities discussed here are authorized under Section 13(3), which was added by amendment in 1932. This section provides the Fed with powers of emergency lending in "unusual and exigent circumstances". Long dormant, Section 13(3) was used by the Fed during the global financial crisis of 2007–2009 to authorize several market interventions. To expand the types of and sectors to which the Fed could provide funding, during the last crisis the Fed created special purpose vehicles (SPVs), subsidiary legal entities which it controlled and used to facilitate specific market operations. The Fed lends to the SPVs, which purchase securities or lend to financial institutions under rules set for the specific Fed program.

2. **The Department of Treasury, the Exchange Stabilization Fund (ESF), and the CARES Act:** Though not explicit, it is the Fed's long-standing interpretation of its authority as a regulator under Section 13(3) that it cannot extend credit for which it lacks a reasonable expectation of being fully repaid. (Indeed, the Fed's lending under Section 13 (3) during the global financial crisis did not incur any losses—it even made a profit.) To protect the Fed from losses, the Department of the Treasury has provided equity to the SPVs used in many of the emergency lending facilities to enable to Fed to undertake riskier and more aggressive credit support than it might otherwise. Funds for the Treasury's investments in the Fed's emergency lending programs in some cases are provided from the Exchange Stabilization Fund (ESF), an emergency reserve fund established in the 1934 Gold Reserve Act and amended in 1970 to allow the Treasury Secretary to deal in instruments of credit and securities. In addition, the Coronavirus Aid, Relief, and Economic Security (CARES) Act, passed on 27 March, allocated $454 billion to be invested in the Fed's emergency credit facilities.

sheet. The Treasury Department will also have a stake in this facility, making an initial equity investment of $10 billion.[2] The Fed operated a CPFF during the last financial crisis, from 2008 to 2010, and at its peak in late 2008 it held about $350 billion, equal to more than a fifth of the total commercial paper outstanding at the time. The CPFF will purchase 3-month CP beginning on 14 April. It is intended to stabilize the commercial paper market, which has shown signs of stress, with issuers expressing concern about being unable to refinance maturing CP. On 23 March, the Fed lowered the CPFF's pricing and expanded it to include tax-exempt commercial paper.

- **The Primary Dealer Credit Facility (PDCF).** Through the PDCF, the Fed extends credit to the Federal Reserve Bank of New York's primary dealers, who are conduits for the implementation of the Fed's monetary policy. Primary dealers also buy government securities at auction and help to make markets in those securities. Announced on 17 March, the PDCF gives primary dealers access to credit from the Fed under terms broadly similar to the credit extended to banks through the Fed's discount window, and at the same rate. Unless offset, loans made under the PDCF expand the Fed's balance sheet. The Fed operated a broadly similar PDCF from 2008 to 2010; at the maximum in October 2008, $147 billion in credit was outstanding.
- **The Term Asset-Backed Securities Loan Facility (TALF).** This program, launched on 23 March, revives a program used during the last financial crisis to stabilize markets for asset-backed securities (ABS) and is intended to support the flow of credit to consumers and businesses. ABS are collateralized by assets such as loans, receivables, or other income streams. Through the TALF, the Fed uses an SPV to lend to holders of ABS backed by newly and recently originated consumer and small business loans, including student loans, auto loans, credit card loans, loans guaranteed by the Small Business Administration (SBA), and certain other types of loans. As with the CPFF, the Treasury Department will make an equity investment of $10 billion to protect the Fed against potential losses. Among the liquidity facilities used in the global financial crisis, the prior incarnation of the TALF was one of the smallest, peaking at just under $50 billion outstanding in March 2010. The Fed announced an expected capacity of $100 billion for the current iteration of TALF.
- **Foreign exchange swap lines with major central banks.** International swap lines represent agreements between central banks to extend credit to one another. The Fed has historically maintained swap facilities with several major central banks, including the Bank of Canada, the Bank of Japan, the European Central Bank, the Swiss National Bank, and the Bank of England, to which the Fed lends dollars so that they may in turn lend dollars in their respective jurisdictions. These transactions are structured as currency swaps and create essentially zero risk to the Federal Reserve, including zero foreign exchange risk. During the global financial crisis, international swap lines were the largest of the Fed's liquidity facilities, reaching a peak of nearly $600 billion outstanding in December 2008. This March, central bank swap lines were enhanced and extended to 9 other central banks. The rate for borrowing dollars from the Fed was reduced, and longer-term loans with an 84-day maturity were introduced, in addition to the 1-week maturities offered previously. Temporary swap lines were created with 9 more central banks, including those of Australia, Brazil, South Korea, Mexico, Singapore, Sweden, Denmark, Norway, and New Zealand, with a combined capacity of $450 billion.
- **The Money Market Mutual Fund Liquidity Facility (MMLF).** The Fed announced this program on 18 March, by means of which the Boston Fed extends loans to financial institutions secured by high-quality assets purchased from money market mutual funds (MMMFs). These funds invest only in highly liquid, short-term securities and are considered to be low-risk; however, during March, some MMMFs were deluged with demands for redemptions and experienced a liquidity crunch. The MMLF is intended to assist MMMFs in meeting demands for liquidity. It resembles a financial crisis-era facility called the Asset-Backed Commercial Paper Money Market Mutual Fund Liquid-

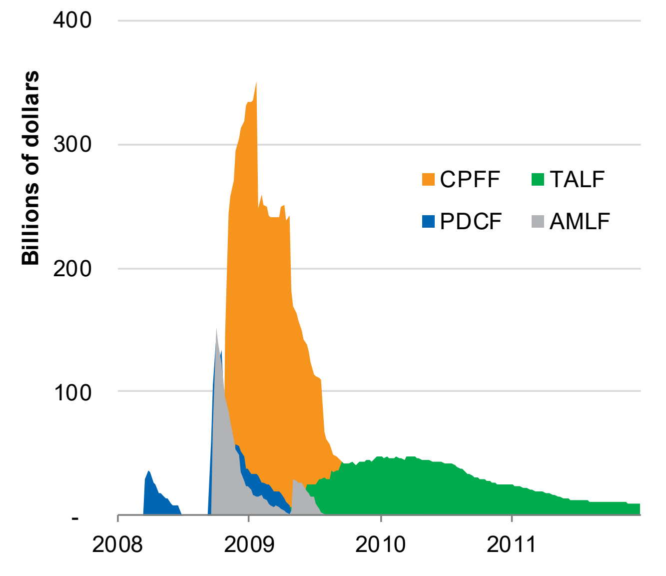
ity Facility (AMLF), which at its peak in early October 2008 held an outstanding loan balance of $152 billion. When the new MMLF opened on 23 March 2020, the Fed specified it would also extend loans through this facility secured by bank certificates of deposit (CDs), as well as state and municipal bonds, including a type of municipal instrument called variable rate demand notes (VRDNs).[3] Both market segments had been showing signs of stress. The Treasury will provide $10 billion of credit protection to the Fed for this program.

In general, actual take-up of the global financial crisis-era programs, especially the TALF, were much lower than the announced limits.

Going beyond precedent, the Fed has also announced new lending facilities in recent weeks, including:

- **The Primary Market Corporate Credit Facility (PMCCF).** This program, established on 23 March, will allow the Fed to extend credit via an SPV to businesses raising funds through new bond and loan issuance. It is intended to provide bridge financing during the period of dislocation and disrupted economic activity accompanying the COVID-19 pandemic. Through the PMCCF, the Fed will support credit to corporates that are rated investment grade, and under certain conditions, those that are rated below investment grade ("high yield"). Borrowers are permitted to defer principal and interest payments for up to 6 months, extendable at the Fed's discretion. The Treasury will initially provide $50 billion in equity to the PMCCF.
- **The Secondary Market Corporate Credit Facility (SMCCF).** Similar to the PMCCF above, with analogous goals and established at the same time, the SMCCF is an SPV used by the Fed to purchase corporate debt in the secondary market. In addition, the SMCCF may purchase US-listed Exchange Traded Funds (ETF's) whose investment objective is to provide broad exposure to the market for US corporate bonds. While initially only investment-grade corporate bonds were to be purchased by the PMCCF and SMCCF, on 9 April the Fed expanded their scope to include low investment-grade and some high-yield corporate debt. The Treasury will initially provide $25 billion in equity to the SMCCF. The Fed expects the combined PMCCF and SMCCF to support up to $750 billion in credit. Both the PMCCF and SMCCF are authorized under 13(3) as emergency lending facilities (see footnote 1).
- **The Foreign and International Monetary Authorities (FIMA) Repo Facility.** Announced on 31 March, the FIMA Repo Facility will allow foreign international and monetary authority (FIMA) account holders, consisting of central banks and other international monetary authorities, to borrow dollars in repo transactions backed by Treasury securities. This is intended to augment the central bank swap lines already in place by helping FIMAs to convert their Treasury holdings into dollars more easily. In particular, the FIMA repo facility is available to a much larger set of official institutions than the central bank swap lines described above. Because funds extended under this facility are collateralized with Treasury securities, there is little risk to the Federal Reserve.

Loans outstanding under GFC-era credit facilities



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3. VRDNs are floating rate municipal debt instruments which, despite typically having long maturities, carry "put options" making them payable on demand. These put options render VRDNs relatively liquid and make them eligible for purchase by money market funds.

- **The Main Street Lending Program (MSLP).** The Fed announced on 23 March its intent to establish a new facility to support lending to small and medium-sized businesses and elaborated with details on 9 April. The MSLP will take the form of an SPV and provide term loans through banks to businesses in good financial standing with up to 10,000 workers or (annual) revenue of less than $2.5 billion. Banks can use the program to either originate new loans to businesses or to expand existing ones, but businesses can avail themselves of credit through only one of the two options. Borrowing businesses must attest that they will make reasonable efforts to maintain payroll and retain employees during the term of the loan and can elect to defer principal and interest payments for up to one year. The Treasury will provide an initial equity investment of $75 billion, and the Fed announced the Main Street facilities will have "up to $600 billion" in credit capacity.
- **The Paycheck Protection Program Liquidity Facility (PPPLF).** On 6 April, the Fed announced a facility to support lending to small businesses via the Small Business Administration (SBA)'s Paycheck Protection Program (PPP). Established on 27 March by the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the PPP is a $349 billion fund intended to provide loans to businesses with fewer than 500 employees that are forced to close or restrict operations during the pandemic. These loans are potentially forgivable, effectively making them grants, provided that loaned funds are used only on certain allowed expenses (primarily payrolls), and that employee and compensation levels are maintained. The PPPLF will extend credit to financial institutions that originate PPP loans, taking the loans as collateral at face value and on a non-recourse basis. Because the underlying loans will be guaranteed by SBA, the Federal Reserve does not expect to suffer losses and no direct Treasury support is needed.
- **The Municipal Liquidity Facility (MLF).** Announced on 9 April, this facility is intended to mitigate cashflow pressures experienced by state and local governments. The MLF will be set up as an SPV to provide up to $500 billion in lending to states and to larger counties and cities. The Treasury will make an initial equity investment of $35 billion. Borrowers can request additional funding from the MLF to support "instrumentalities" that are not directly eligible for funding through the MLF.

Taken together, these steps represent a wide-ranging commitment by the Federal Reserve to use its full range of authorities, in concert with the US Treasury, other banking regulators, and international monetary authorities, to support the financial system and the economy during this crisis. There remain yet more avenues for financial support by the Fed and the Treasury that would require Congressional action.

Though monetary policy is an imperfect tool for responding to a public health crisis, there are some early indications that market functioning has improved. Risk spreads remain elevated but in some instances have moderated from their highest levels in March. The spread between the Baa corporate bond yield and comparable Treasuries gapped more than two hundred basis points between late February and 23 March, to 395 basis points; it has since eased back to 334 basis points as of 9 April. Spreads on investment-grade commercial paper, municipal debt, and mortgage-backed securities have followed qualitatively similar paths over the past several weeks, with sharp increases followed by modest declines. Nevertheless, daunting challenges remain, both in and out of financial markets. As Fed credit programs ramp up, we will watch for signs of changing market behavior and risk-pricing.

Outstanding Federal Reserve assets
(millions of dollars)

	Pre-COVID-19 (11 March)	8 April
Treasury securities	2,523,031	3,634,386
Agency mortgage-backed securities	1,371,846	1,459,701
Repurchase agreements	242,375	192,751
Discount window - Primary credit	11	43,449
Discount window - Secondary and seasonal credit	0	0
International central bank swap lines	58	358,077
Primary Dealer Credit Facility	0	33,018
Money Market Mutual Fund Liquidity Facility	0	53,171

Note: As of 8 April, the following credit facilities still had $0 in outstanding assets: Primary Market Corporate Credit Facility, Secondary Market Corporate Credit Facility, Term Asset-Backed Securities Loan Facility, Commercial Paper Funding Facility, FIMA Repo Facility, Main Street Lending Program, Paycheck Protection Program Liquidity Facility, Municipal Liquidity Facility

Contacts

Joel Prakken
VP & Co-Heads US Economics
joel.prakken@ihsmarkit.com

Chris Varvares
VP & Co-Heads US Economics
chris.varvares@ihsmarkit.com

Ben Herzon
Executive Director
ben.herzon@ihsmarkit.com

Ken Matheny
Executive Director
ken.matheny@ihsmarkit.com

Patrick Newport
Executive Director
patrick.newport@ihsmarkit.com

Kathleen Navin
Director
kathleen.navin@ihsmarkit.com

James Bohnaker
Associate Director
james.bohnaker@ihsmarkit.com

Mike Montgomery
Associate Director
mike.montgomery@ihsmarkit.com

David Deull
Principal Economist
david.deull@ihsmarkit.com

Michael Konidaris
Principal Economist
michael.konidaris@ihsmarkit.com

Juan Turcios
Principal Economist
juan.turcios@ihsmarkit.com

Gordon Greer III
Senior Economist
gordon.greer@ihsmarkit.com

Rebecca Mitchell
Senior Economist
rebecca.mitchell@ihsmarkit.com

Lawrence Nelson
Senior Economist
lawrence.nelson@ihsmarkit.com

Akshat Goel
Economist
akshat.goel@ihsmarkit.com

IHS Markit Customer Care

CustomerCare@ihsmarkit.com
Americas: +1 800 IHS CARE (+1 800 447 2273)
Europe, Middle East, and Africa: +44 (0) 1344 328 300
Asia and the Pacific Rim: +604 291 3600

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