

SPEECH

Liquidity Shocks: Lessons Learned from the Global Financial Crisis and the Pandemic

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Lorie K. Logan, Executive Vice President

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Thank you to the Yale Program on Financial Stability and to the Bank for International Settlements for the invitation to speak at today's forum.¹ Financial crises can have deep and lasting effects on the economy. They disrupt the vital flow of credit, damage business and household balance sheets, and result in lost jobs and income for the American public. Given these costs, it is critical that we learn the lessons of past crises and continue to build knowledge about the tools and interventions that will help us respond effectively in the future. Discussions like the one we'll have today are valuable opportunities to evolve our thinking on policy implementation and crisis management.

Today, I'll share some lessons I've taken from two crises that occurred during my time implementing monetary policy: the Global Financial Crisis (GFC) and the coronavirus pandemic shock. I'll discuss liquidity shocks and how central bank actions address them. In particular, I'll focus on a recent decision by the Federal Open Market Committee (FOMC) to establish two standing repo facilities to support the effective implementation of monetary policy and smooth market functioning: the Standing Repo Facility and the FIMA Repo Facility.

Before I begin, let me say that my comments today reflect my own views and not necessarily those of the New York Fed or the Federal Reserve System.

The Crises: Divergent Shocks; Similar Hallmarks

Financial crises emanate from shocks, which often are amplified by vulnerabilities or imbalances in the financial system. Each crisis unfolds in its own way, challenging policymakers to respond to evolving conditions. Still, there are recurring elements to most crises. And in these similarities we can find valuable lessons that help us better prepare for the future.

The GFC and the pandemic crisis resulted from very different events. The GFC was precipitated by a housing market shock that was amplified by weak underwriting standards and highly leveraged financial intermediaries—in particular, in subprime mortgage finance. The crisis unfolded over an extended timeline, punctuated by events that revealed significant vulnerabilities among financial institutions, including in the banking sector. In contrast, the pandemic crisis was caused by an extraordinary exogenous shock to the economic outlook as measures taken to control the coronavirus pandemic threatened to disrupt activity worldwide and raised concern about the ability of financial markets to operate smoothly. The sudden and unprecedented uncertainty resulted in a “dash for cash” that began in the markets for the most liquid and safe investments and unfolded with astonishing speed.² Although banks were a source of strength during the pandemic, the event still revealed vulnerabilities in market structure and among some financial firms.

Even with these very divergent origins, the GFC and pandemic crisis impacted financial markets in some similar ways.

First, both resulted in an extraordinary increase in the demand for dollar liquidity. The demand arose out of both immediate funding needs and the desire to raise precautionary liquidity.³ The supply of liquidity was also curtailed as firms that normally lend instead stockpiled liquidity to meet potential future payment needs. During both crises, this surge in demand for U.S. dollars was global in nature and had significant spillovers to domestic funding conditions.

Second, each crisis revealed vulnerabilities in short-term funding markets—notably among prime money market funds—in which maturity transformation created an unstable source of liquidity during periods of stress, propagating funding strains.⁴

Third, as a result of strained liquidity conditions, credit markets became severely disrupted, threatening the flow of credit to the economy. In both crises, extreme stress in credit markets resulted in elevated risk premia and reduced access to credit, with the potential for harmful effects on aggregate demand and output.

Even with the divergent shocks precipitating each crisis, these common elements resulted in negative feedback loops that led to sharply deteriorating conditions. As funding conditions worsened and volatility increased, investors divested assets to increase liquidity, which in turn resulted in declining prices and a further need to deleverage or raise liquidity.

The Response: Some Things Old; Some Things New

As I've discussed in previous remarks, the Federal Reserve responded to dislocations from the pandemic crisis with swift and decisive actions—many in coordination with the U.S. Treasury—to support smooth market functioning and the flow of credit to the U.S. economy. Bearing in mind lessons from the GFC, policymakers announced actions to address conditions quickly in order to restore confidence. Fortunately, many tools used during the GFC—including expanded U.S. dollar liquidity swap lines, enhanced

Term Asset-Backed Securities Loan Facility (TALF) were all substantively similar to facilities employed during the GFC.⁵ And, during the pandemic, the CPFF and MMLF in particular were highly effective at stabilizing money funds and short-term funding markets.

However, we also developed new approaches and tools to address the unique circumstances associated with the pandemic. The Desk conducted large-scale and effectively full-allotment repo operations to stabilize short term funding markets.⁶ Purchases of U.S. Treasuries and agency mortgage-backed securities (MBS) were initiated with unprecedented speed and scale to address severe dysfunction in the markets for these securities.⁷ The Federal Reserve also introduced a temporary FIMA repo facility to support global dollar funding conditions and to stem sales of Treasury securities.⁸ New lending facilities were established, in coordination with the U.S. Treasury, to directly support the flow of credit to small- and medium-sized businesses and nonprofit organizations, corporations, and state and local governments.⁹

The Federal Reserve's actions—many in close coordination with the U.S. Treasury, and alongside a forceful fiscal response from the U.S. government and the temporary adjustment of regulations to encourage lending—brought confidence back in financial markets.¹⁰ I believe it was this broadly integrated approach, the swift and agile response, and the unwavering commitment by policymakers to using their full range of tools that ultimately helped restore market functioning.

Lessons for the Future: Announcement Effects and Liquidity Needs

As I look back, one thing I reflect on is the notable differences across the various tools in terms of the scale needed to achieve success. In some cases, the announcement of a program or facility was sufficient to inspire a strong positive response in the target markets. Meanwhile, other tools required large-scale usage to achieve desired results. In particular, repo operations, swap lines, and asset purchases all expanded the Federal Reserve's balance sheet on a large scale.

What were the factors that gave rise to these differences, and how can we apply the lessons from this experience?

Announcement effects are a critical element of most central bank actions. Asset prices are forward-looking, and a credible commitment to lend or to purchase assets alleviates strains in the present by shifting expectations about future financial conditions. In financial crises, announcements that central bank liquidity will be available soon can temper asset sales and other actions to raise liquidity. Announcements can also enhance the supply of funding and market liquidity. If intermediaries or end investors are confident that liquidity will be available in the future, either in the form of funding or asset purchases, they may perceive market-making and investing as less risky today—restoring the flow of transactions before any central bank operations are conducted.

As an example, the announcements of credit facilities during the pandemic, including the Corporate Credit Facilities (CCFs) and Municipal Liquidity Facility (MLF), were generally effective at reducing risk premia and restoring the flow of credit in private markets.¹¹ The success of facilities despite limited actual take-up demonstrates that when announcement effects are powerful, take-up is not the best measure of a central bank program's impact.¹² During the GFC, the announcement of the first large-scale asset purchase program in November 2008 substantially improved conditions in MBS markets even before asset purchases began in January 2009.¹³

On the other hand, in my experience, policy announcements are less effective when market dysfunction arises from an immediate demand for U.S. dollars. For example, a firm that needs to meet margin calls or an investor that faces redemptions today must actually obtain the cash; the prospect of cash at some future date is not enough. In these circumstances, the underlying demand for liquidity may not be satisfied by enhancing confidence and limiting negative feedback loops with expectations for future central bank interventions. When this is the case, it is only actually delivering liquidity—through asset purchases or lending—that calms conditions.

At the onset of the pandemic crisis, the immediate and intense demand for cash required substantial interventions. We were fortunate to have repo operations in place at the time that helped limit the intensity of potential pressures. However, it took successive increases in the size of those operations to stabilize repo market conditions. Similarly, initial announcements establishing large-scale Treasury and agency MBS purchases did little to quell pressures, and it was not until actual purchases were increased in size that conditions slowly began to improve.^{14,15}

To summarize, shocks can create rapid shifts in the demand for liquidity that lead to severe financial market dysfunction. To the extent that announcements of central bank actions can reduce that liquidity demand and encourage a return to normal investing and market-making activity, they can significantly improve conditions even with little or no actual activity. However, the most immediate liquidity needs are unlikely to be resolved by announcements alone and thus require active operations to address them. In both of these crises—as well as during other liquidity shocks, such as the one that occurred in September 2019—we learned that when immediate liquidity needs arise, the time needed to put in place a response, even one that is fairly ready for deployment, risks worsening a fragile situation. Central banks should maintain a comprehensive set of tools, some of which are available to meet the most immediate needs, to address these circumstances.

Two New Standing Facilities

So, what does this mean for the future? Certainly, these events will continue to be studied by academics and practitioners for years to come, and the lessons will be many and varied. Today, however, I would like to highlight a few recent decisions by the FOMC.

As many of you may be aware, the FOMC has discussed standing repo facilities for a number of years in the context of its monetary

implementation, particularly during periods of stress in overnight markets, the FOMC renewed its deliberations in recent meetings.¹⁷

At its July meeting, the FOMC established two standing repo facilities as tools in the Fed's policy implementation framework: a domestic standing repo facility (SRF) and a repo facility for foreign and international monetary authorities (FIMA Repo Facility).¹⁸ These facilities will serve as backstops in money markets to support the effective implementation of monetary policy and smooth market functioning.

The SRF enhances control over the federal funds rate by limiting pressures in the repo markets that could spill into other overnight money markets.¹⁹ The facility is positioned and priced as a backstop with a minimum bid rate of 25 basis points, corresponding to the top of the target range for the federal funds rate. This pricing allows for robust private activity to occur under most market conditions, but limits the potential for spikes in repo rates to move the effective federal funds rate outside of the target range. SRF counterparties include primary dealers and will be expanded to include depository institutions that will be able to access liquidity through this facility and at the discount window.²⁰ Treasuries, agency debt, and agency MBS will be accepted to ensure the facility can effectively address pressures that arise in markets for repo backed by high-quality liquid collateral.²¹

The FIMA Repo Facility establishes a standing facility to address global dollar funding pressures that may affect U.S. financial conditions. The facility provides foreign official accounts with a temporary source of liquidity against their holdings of U.S. Treasury securities held in custody at the New York Fed, presenting an alternative to outright sales of those securities. This facility complements the existing U.S. dollar liquidity swap lines by extending access to dollar funding to a broader range of central banks and foreign official institutions. The rate is the same as on the SRF to create alignment across facilities to support effective policy implementation.

The presence of these facilities should create confidence that liquidity at a backstop rate will be available in overnight money markets as needed, potentially limiting the demand for precautionary liquidity and the run-like dynamics that can occur. Equally important, they will be available on a standing basis to meet immediate liquidity needs should they arise.

Conclusion

While I hope we can avoid future shocks to the financial system and the disruptions to the economy that they cause, history teaches us that unpredictable events will challenge financial markets from time to time. Central banks will need to respond to new environments and new shocks. Nonetheless, there are some recurring elements of liquidity shocks from which we can learn. The SRF and FIMA Repo Facility will provide backstops in overnight money markets that help address immediate demand for dollar liquidity, both domestically and internationally, when shocks occur.

I hope that the continued study of crisis events will yield further lessons for central bankers looking to shield economies from the effects of shocks to the financial system.

¹ I would like to thank Linsey Molloy, Matt Raskin, and Patricia Zobel for their assistance in preparing these remarks, and colleagues in the Federal Reserve System for valuable comments and suggestions.

² Mark E. Van Der Weide and Jeffery Y. Zhang, 2021, "Tale of the Tape: Lessons from the 2008 and 2020 Financial Crises," *Stanford Journal of Law, Business & Finance*, 26(2), pp. 413-464.

³ Lorie Logan, *The Federal Reserve's Recent Actions to Support the Flow of Credit to Households and Businesses*, remarks before the Foreign Exchange Committee, Federal Reserve Bank of New York (via webcast), April 14, 2020.

⁴ Lael Brainard, *Some Preliminary Financial Stability Lessons from the COVID-19 Shock*, remarks at the 2021 Annual Washington Conference, Institute of International Bankers (via webcast), March 1, 2021; Lorie Logan, *The Federal Reserve's Recent Actions to Support the Flow of Credit to Households and Businesses*, remarks before the Foreign Exchange Committee, Federal Reserve Bank of New York (via webcast), April 14, 2020; Randal K. Quarles, *What Happened? What Have We Learned From It? Lessons from COVID-19 Stress on the Financial System*, remarks at the Institute of International Finance in Washington D.C. (via webcast), October 15, 2020.

⁵ While these facilities were substantively similar to facilities employed during the GFC, some of the facilities' specific terms varied from the original programs or were customized to address the unique circumstances associated with the pandemic crisis. See *Commercial Paper Funding Facility, Money Market Mutual Fund Liquidity Facility, Primary Dealer Credit Facility, Term Asset-Backed Securities Loan Facility*, Board of Governors of the Federal Reserve System (March 2020).

⁶ See *Statement Regarding Repurchase Operations* (March 9, 2020), *Statement Regarding Repurchase Operations* (March 11, 2020), *Statement Regarding Treasury Reserve Management Purchases and Repurchase Operations* (March 12, 2020), *Statement Regarding Repurchase Operations* (March 16, 2020), *Statement Regarding Repurchase Operations* (March 17, 2020), and *Statement Regarding Repurchase Operations* (March 20, 2020).

⁷ See *Statement Regarding Treasury Reserve Management Purchases and Repurchase Operations* (March 12, 2020), *Statement Regarding Treasury Securities, Agency Mortgage-Backed Securities, and Repurchase Agreement Operations* (March 15, 2020), and *Statement Regarding Treasury Securities and Agency Mortgage-Backed Securities Operations* (March 23, 2020).

⁸ See *Federal Reserve Announces Establishment of a Temporary FIMA Repo Facility to Help Support the Smooth Functioning of Financial Markets*, Board of Governors of the Federal Reserve System (March 31, 2020).

⁹ See *Main Street Lending Program, Municipal Liquidity Facility, Paycheck Protection Program Liquidity Facility, Primary Market Corporate Credit Facility and Secondary Market Corporate Credit Facility*, Board of Governors of the Federal Reserve System (March and April 2020).

¹⁰ Examples of supervisory and regulatory measures designed to help support financial institutions as they met the challenges of the pandemic include the reduction of reserve requirement ratios to zero, the temporary exclusion of reserves and Treasuries from the Supplementary Leverage Ratio (SLR), and the increased availability of daylight credit.

¹¹ Valentin Haddad, Alan Moreira, and Tyler Muir, *When Selling Becomes Viral: Disruptions in Debt Markets in the COVID-19 Crisis and the Fed's Response*, NBER Working Paper No. 27168, 2020; and Antonio Falato, Itay Goldstein, and Ali Hortaçsu, *Financial Fragility in the COVID-19 Crisis: The Case of Investment Funds in Corporate Bond Markets*, NBER Working Paper No. 27559, 2021.

¹² Sam Schulhofer-Wohl, August 17, 2020, *The Influence and Limits of Central Bank Backstops*, Chicago Fed Insights.

Did They Work? Federal Reserve Bank of New York Staff Report no. 441.

¹⁴ Annette Vissing-Jorgensen, *The Treasury Market in Spring 2020 and the Response of the Federal Reserve*, Working Paper, July 2021.

¹⁵ Treasury and agency MBS market liquidity metrics, such as bid-ask spreads, continued to deteriorate after the purchase announcements and improved slowly after the size of actual purchases increased. Conditions in the agency MBS markets were also supported by purchases for near-term settlement to help ease pressures on dealer balance sheets, which is different than the Desk's usual practice of purchasing in the forward-settling market.

¹⁶ See Minutes of the Federal Open Market Committee from June 2019 and October 2019.

¹⁷ See Minutes of the Federal Open Market Committee from April 2021 and June 2021.

¹⁸ See *Statement Regarding Repurchase Agreement Arrangements*, Board of Governors of the Federal Reserve System (July 28, 2021).

¹⁹ In a repo transaction, the Fed purchases eligible securities from a counterparty subject to an agreement to resell the securities at a later date. Eligible securities include Treasury, agency debt, or agency MBS. A Fed repo transaction is economically similar to a collateralized loan.

²⁰ Depository institutions will be allowed to participate in the SRF without the requirements associated with becoming a primary dealer. Primary dealers must meet certain expectations on an ongoing basis, including bidding on a pro-rata basis in all Treasury auctions as well as consistently participating in open market operations, and three banks are already primary dealers. For more information on expectations and requirements for primary dealers, see *Federal Reserve Bank of New York Policy on Counterparties for Market Operations*.

²¹ These represent the same securities that have been eligible for temporary open market operations since 1999.
