Improving The Government's Lender of Last Resort Function: Lessons From SVB and Signature Bank

Greg Baer, Bill Nelson, Patrick Parkinson and Brett Waxman | April 24, 2023

While failures of SVB and Signature Bank have raised questions about examination, regulation and resolution, a fourth area requires considerable review and likely reform: the lender of last resort function.

Banking is the business of liquidity transformation – funding illiquid loans with demandable deposits. As a result, banks are inherently unstable. *Ex ante*, the government attempts to improve stability by capital regulation (designed to ensure solvency and thereby inspire confidence), liquidity regulation (designed to allow banks to survive a run) and examination (designed to identify weaknesses in a bank's operations not addressed adequately by regulation). Those policies are essential. However, they necessarily reduce the potential supply of credit to the economy, and therefore require managing the tradeoff between safety and economic growth, which is a very difficult task. Traditionally, the lender of last resort function has been an attempt to mitigate those costs.

Why is this so important now? Many policymakers and pundits have focused attention on the speed of the run at SVB, noting how funds can move quickly and how runs can be spurred by social media. They therefore urge that regulators no longer treat uninsured deposits as "sticky" liabilities at any bank — not just banks with the unusual funding model of SVB. Leaving aside the merits of that prescription, note that under current regulation any increase in the runoff assumptions for deposits leads automatically to a requirement that banks hold more high-quality liquid assets: that is, reserves at the Fed and Treasury and agency securities. Yes, these are the same government and agency securities that produced the fatal interest rate risk at SVB. Far more importantly, though, increasing the required percentage of reserves and government securities on bank balance sheets means banks making fewer loans and becoming more like government money market funds; in other words, it makes banks less bank-like by reducing their liquidity transformation mission. The largest banks already use more than 20 percent of their balance sheets to fund the government rather than the economy.

Fortunately, there is an alternative to banks preparing for a run by buying still more government debt: making it a viable option to meet a run through discount window borrowing. That means encouraging banks to pre-pledge loans or other economic-growth-enhancing assets as collateral and requiring bank examiners to recognize this reality when they assess a bank's liquidity position. Doing so requires some effort, but failing to do so would doom the country to slower economic growth, permanently.

Key Questions

Under stress, a lack of stability is addressed in two ways: deposit insurance and a LOLR. Deposit insurance, which now effectively functions as a bank-owned cooperative, comes with moral hazard and other problems beyond the scope of this note. The LOLR function, though, is brought into sharp focus by the failures of Silicon Valley Bank and Signature Bank. LOLR reform appears to present the best opportunity to address those failures effectively at the lowest societal cost.

Reform requires considering both policy and operational problems with the existing LOLR function.

First, as a *policy* matter, what are the relative roles of the Federal Reserve and the Federal Home Loan Bank System in serving as a lender of last resort? Within the Federal Reserve System, what are the roles of the discount window and the standing repo facility (and now, for the foreseeable future, the Bank Term Funding Program)?

Second, as an *operational* matter:

1. How do the terms or conditions of FHLB versus Federal Reserve lending affect bank decisions about where to borrow?
2. Do examiner mandates and other non-public pressure from the federal banking agencies steer banks towards or away from one form of borrowing or another?
3. Do the mechanics of posting collateral inhibit banks' ability to obtain LOLR funding from the Federal Reserve?
4. Are banks sufficiently prepared to borrow from the Federal Reserve in emergencies?

Specifically, in the case of SVB, it appears that the bank was unprepared to borrow from the Federal Reserve, the Federal Reserve was unprepared to lend and the FHLBs were lending until they weren't.

In this note, we will explain how FHLBs and the Fed each provide credit to the banking system and how they interact. We will then discuss whether banks are sufficiently prepared to borrow at the discount window, why they might not be and how to fix it. We conclude with some recommendations.

Background

The Central Bank as Lender of Last Resort

Illiquidity—the inability of a solvent bank (one whose assets are worth more than its liabilities) to meet its scheduled payments, deposit withdrawals and draws on lines of credit—is what economists call a market failure, and fixing a market failure is an unambiguous gain for the economy. If a bank has assets that are worth more than its liabilities, then it should be able to repay all its liabilities. If, despite being solvent, it cannot do so because it cannot either (i) liquidate its assets quickly enough without steep fire-sale pricing or (ii) raise money without paying an exorbitant interest rate, then those are problems that arise from market illiquidity and information asymmetries.

Illiquidity could be avoided entirely in two ways. On the liability side of the balance sheet, banks could be funded exclusively by equity and term debt; on the asset side of the balance sheet, they could be required to hold only liquid assets (reserves, Treasury bills), as opposed to loans. Both those solutions effectively nullify the core liquidity transformation mission of banks; thus central banks have been empowered to lend to solvent but illiquid banks.

The central bank itself is not subject to any liquidity risks because it can literally create the money it needs to meet its payments. Moreover, the central bank, via its own or its fellow agencies' supervisory responsibilities, should have an informed view of the financial condition of a bank requiring LOLR support.

Consequently, the central bank is uniquely positioned to correct a market failure that causes a solvent bank to default by lending to the bank on a collateralized basis. And when it does so, the liquidity problem evaporates. The illiquid but solvent bank is now a liquid and solvent bank. The loss of credit and deposit services from a bankruptcy are avoided, and the real risk of contagion to other banks is prevented.

Moreover, the moral hazard costs of a central bank extending a well-collateralized loan at an above-market rate to a bank are minor (although there is a perpetual debate on this point). While before the Global Financial Crisis some central banks sought to retain "constructive ambiguity" about their willingness to provide LOLR support in an effort to contain alleged moral hazard, that view is effectively dead.[1] The mantra now in central bank circles is that the central bank should provide liquidity aggressively and quickly.[2] As such, the view on LOLR has returned full circle to the approach recommended by Bagehot when he spoke highly of how his predecessors had addressed the panic of 1825:

> The success of the Bank of England on this occasion was owing to its complete adoption of right principles.[...] the Bank directors lent money by every possible means, and in modes which we had never adopted before; we took in stock on security, we purchased Exchequer Bills, we made advances on Exchequer Bills, we not only discounted outright, but we made advances on deposits of bills of exchange to an immense amount – in short, by every possible means consistent with the safety of the Bank.[...] and we were not on some occasions over nice. Seeing the dreadful state in which the public were, we rendered every assistance in our power.[3]

To be sure, it is not clear that either SVB or Signature Bank was, in fact, solvent and therefore that their failures were unambiguously liquidity related rather than solvency failures. However, even if SVB and Signature Bank were not solvent, central bank loans are normally provided to get the bank to the weekend, or at least the end of the day, to facilitate a more orderly resolution. The agencies succeeded in doing this with Signature Bank but not with SVB, which was put into receivership on a Friday morning after its East Coast branches had been open for three hours.

Unlike a solvent bank, a bank whose assets are worth *less* than its liabilities does *not* have the resources to repay its creditors, and these banks' solvencies hinge on how one views unrealized losses on investment securities held by the banks. Nevertheless, a well-functioning LOLR function from the central bank is a necessary and welfare-enhancing tool in the government's toolkit to support banks in performing their core function of liquidity transformation. While banks should be expected to self-insure against liquidity risks, only the Fed can sell them to necessary insurance, funding that is available instantly that nevertheless enables banks to keep lending to businesses and households.

The Federal Home Loan Banks and Federal Reserve System as lenders to banks.

Federal Home Loan Banks

The Federal Home Loan Bank System was created by the Federal Home Loan Bank Act in 1932 as a government sponsored enterprise to provide liquidity to its members to support mortgage lending and community investment. The FHLB system is currently composed of 11 regional banks, and FHLB members include commercial banks, thrifts, credit unions, and insurance companies, as well as community development financial institutions.

The FHLBs provide liquidity to their members by way of secured loans known as "advances", based on the creditworthiness and financial condition of the borrowing institutions, with maturities ranging from overnight to 30 years and with a variety of fixed, adjustable or floating rate structures. Although the original purpose of FHLB advances was to support housing finance, there is no requirement that the advances provided by FHLBs be used to support housing; the only linkage to that purpose is the restriction on qualifying collateral, which primarily includes

[1] Domanski, Dietrich, Richhild Moessner, and William R. Nelson. "Central banks as lenders of last resort: experiences during the 2007-10 crisis and lessons for the future." *BIS Paper* 79c (2014).
[2] Bernanke, Ben S., Timothy F. Geithner, and Henry M. Paulson Jr. *Firefighting: the financial crisis and its lessons*. Penguin, 2019.
[3] Bagehot, Walter, *Lombard Street, A Description of the Money Market*, 1873, reprinted by William Clowes and Sons, 1915, pp 52 and 192.

mortgage loans and mortgage-backed securities. As a result, following the Global Financial Crisis, during which the FHLB system served as a lender of next-to-last resort, the role and utilization of FHLBs has changed significantly. In 2000, thrifts were the main borrowers from FHLBs and large commercial banks made up less than two percent of FHLB advances. By 2016, large commercial banks accounted for almost 50 percent of FHLB advances.

The Federal Home Loan Bank Act includes provisions that, notwithstanding any other provision of law, any security interest granted to an FHL Bank is entitled to a priority over the claims and rights of any party (including any receiver, conservator, trustee, or similar lien creditor) with limited exceptions.[4] In practice, FHLBs collateralize most of their loans by taking a blanket lien against all of the borrower's assets. As discussed next, this practice of securing its loans with a blanket lien on the borrowing banks' assets can interfere with the Fed's performance of its LOLR function.

Federal Reserve System

The Federal Reserve System was created in 1913 to provide collateralized loans to banks, thereby allowing the banking system to accommodate seasonal or episodic swings in the demand for currency, central bank reserves and commercial bank credit. The objective was to enhance the provision of credit and to reduce the likelihood of financial crises that had regularly occurred when liquidity became strained.

Currently, the Fed provides three types of regular discount window credit: primary credit, secondary credit, and seasonal credit. All are provided under Section 10B of the Federal Reserve Act, which authorizes the Fed to lend to depository institutions. Seasonal credit is provided to small banks to meet seasonal funding needs and is not used for LOLR purposes.

Primary credit is what people normally mean when they refer to discount window credit. Primary credit is used both to assist in the implementation of monetary policy and to provide contingency funding to banks experiencing liquidity difficulties. Primary credit is only available to financially sound depository institutions, defined as at least adequately capitalized and CAMELS 3 rated. These are relatively mild financial condition requirements; a bank that does not meet these conditions has significant difficulties. For eligible banks, primary credit is intended to be provided on a "no questions asked" basis, although reportedly, even if the discount officer doesn't ask the reason for borrowing, the bank's examiners will ask (see "Bank Treasurers' Views on Liquidity Requirements and the Discount Window"). Although most primary credit loans have overnight maturities, the Fed will extend banks loans with maturities of up to 90 days (the maximum allowed under Section 10B) "renewable and repayable" on the request of the borrower.

A Reserve Bank may extend secondary credit to a bank if it does not qualify for primary credit. Secondary credit would be used, for example, to get a troubled bank to the end of the day or to the weekend, so that it can be resolved in an orderly fashion. The secondary credit rate is 50 basis points above the primary credit rate.

All discount window loans have to be "collateralized to the satisfaction of the lending reserve bank." The Fed accepts essentially all bank assets as collateral for the discount window, including, in particular, loans. Banks typically pre-pledge collateral to the discount window so that they have the capacity to borrow when needed. That collateral usually consists of large books of loans. Collateral – loans and securities—is valued at fair value (market value or an estimate of market value), to which a haircut is applied to get the lendable value. The Fed's haircut schedule is available here. As of Feb. 26, 2020, banks had collateral pledged to the Fed that provided borrowing capacity of $1.6 trillion (see the footnote to table 5 on page 13 of the Fed's quarterly balance sheet report available here).

[4] These exceptions include claims and rights that (1) would be entitled to priority under otherwise applicable law, and (2) are held by actual bona fide purchasers for value or by actual secured parties that are secured by actual perfected security interests.

Relative merits of FHLB and Fed lending

In many jurisdictions, the central bank provides ongoing funding to commercial banks. For example, adhering to the principles of the Bundesbank, loans to banks were the primary asset of the ECB when it was created. Indeed, owning government securities was considered to be recklessly monetizing government debt. In the United States, the Federal Reserve has the opposite view – providing ongoing funding to banks is an unnecessary intrusion of the government into private markets, and government securities are the preferred asset to own. Apart from the tiny seasonal credit program, the Fed only lends to meet contingencies or crises.

Instead, the FHLBs have evolved into the instrument by which the government provides ongoing funding to banks. Federal Home Loan banks are ill-suited to be the LOLR, however, and this division of responsibility interferes with the Fed's ability to do so.

The FHLBs are ill-suited to be the LOLR for three related reasons. First, to provide a substantial loan, FHLBs first have to raise the funds in the marketplace. They do not have hundreds of billions of dollars sitting in their account at the Fed, ready to be deployed. This is a serious problem because LOLR credit often has to be provided almost immediately and sometimes in giant sizes. For example, when Bear Stearns nearly failed, it informed the New York Fed Thursday evening that it would need funds Friday morning or it would default.[5] More to the point of this note, as described in the Wall Street Journal article "How the Last-Ditch Effort to Save Silicon Valley Bank Failed," the day before SVB failed it had sought a $20 billion loan from the FHLB of San Francisco, but the FHLB was only willing to provide a smaller amount, perhaps because it did not have the cash on hand and would need to raise it.

Second, when the Fed creates a loan, the loan is a new asset and therefore expands its balance sheet, creating reserve balances; when the FHLB makes a loan, reserve balances are not created. As a result, only Fed lending can address a shortfall of reserve balances for the banking system that materializes later in the day. Addressing such shortfalls is how primary credit aids in the conduct of monetary policy, and how the Fed addresses problems, such as the repo market turmoil in September 2019.

Third, the Fed is the last mover. Banks can receive a discount window loan up to and past the closing of Fedwire, which is usually at 7 p.m. ET.

Furthermore, FHLB lending can interfere with the ability of the Fed to be LOLR. For the Fed to extend a loan, it requires a "perfected security interest" in the collateral backing the loan, that is, it requires certainty that it can seize the collateral if the bank fails and fails to repay the its discount window loan.[6] The FHLB's blanket lien can block the Fed from perfecting an interest in the loans and securities a bank seeks to pledge to the Fed to secure a discount window loan.

Under normal circumstances, the Fed and FHLB work out their competing claims, and banks are able to pre-position collateral at the discount window to back loans the bank may need in contingencies. In effect, the FHLB waives its blanket lien with respect to specific assets which the bank then pledges to the Fed. However, the process takes time and, as noted, LOLR lending can require speed. For example, in the case of SVB when it was trying to borrow against its assets to meet depositor redemption requests on the Thursday before its failure, the WSJ article also states:

[5] Report Pursuant to Section 129 of the Emergency Economic Stabilization Act of 2008: Bridge Loan to The Bear Stearns Companies Inc. Through JPMorgan Chase Bank, N.A., Federal Reserve Board, https://www.federalreserve.gov/monetarypolicy/files/129bearstearnsbridgeloan.pdf
[6] In reality, in such circumstances, the FDIC repays the Fed and takes possession of the collateral, but that arrangement depends on the Fed having a perfected claim to the collateral.

> The bank hit another roadblock. The transfer required procedural steps. SVB had outstanding loans at the San Francisco FHLB, which had to determine how much collateral it needed to hold, the people familiar with the matter said.

FDIC Chairman Gruenberg stated in testimony that that the Fed and FDIC also had to scramble to get collateral in position for Signature Bank, although in that instance they succeeded.

> Bank management could not provide accurate data regarding the amount of the deficit, and resolution of the negative balance required a prolonged joint effort among Signature Bank, regulators, and the Federal Home Loan Bank of New York to pledge collateral and obtain the necessary funding from the Federal Reserve's Discount Window to cover the negative outflows. This was accomplished with minutes to spare before the Federal Reserve's wire room closed.[7]

Are banks sufficiently prepared to borrow from the discount window?

The difficulties encountered arranging for SVB and Signature Bank to have sufficient collateral at the discount window raise the question of why they hadn't prearranged such capacity beforehand. As we described in a recent blog, "Why Regulators Should Consider Banks' Borrowing Capacity from the Fed in Liquidity Assessments," a key reason is that banks receive no credit for access to the discount window either in regulation or examination. For example, SVB had a large portfolio of agency MBS, but given its business model would not have had normal, ready access to the repo market to convert the MBS immediately into cash. If SVB had pledged its MBS to the Fed, it would still not have been able to state to its examiners that its plan for raising cash using those securities was to borrow from the discount window. The Fed's new Standing Repo Facility would have been another way to convert the MBS into cash, but examiners would also have not allowed SVB to state that its plan was to use the SRF, which is perhaps why SVB had not signed up for the facility.[8] This treatment by examiners is particularly perplexing given that there is supervisory guidance that specifically recognizes the value of the discount window as a source of contingency funding – SR 03-15. (Any investigation of the SVB episode should include a review of what examiners were telling SVB on these fronts.)

While banks have good reasons to prepare for discount window usage regardless of discouraging examiner mandates, the widespread bias among bank management and examiners against using the discount window appears to result in some banks being insufficiently prepared. As we discussed in "A Major Limit on the Fed's Crisis Toolkit: Shame," the stigma associated with the discount window materially degrades the discount window as a tool for addressing liquidity strains. As described in "Discount Window Stigma: We Have Met the Enemy, and He Is Us," there has been a stigma associated with the discount window since the founding of the Federal Reserve System, in part because the Fed has created the stigma to discourage banks from overusing the window.

Stigma has very real consequences. The run on SVB was triggered by the bank selling most of its available-for-sale investment account securities and trying but failing to raise equity. SVB sold the securities in part to raise funds to meet the steady decline of deposits as the VC industry slowed down. If SVB had, instead, borrowed against those

[7] Remarks by Chairman Martin J. Gruenberg on Recent Bank Failures and the Federal Regulatory Response before the Committee on Banking, Housing, and Urban Affairs, United States Senate, March 27, 2023. https://www.fdic.gov/news/speeches/2023/spmar2723.html

[8] The SRF is strictly inferior to primary credit as a source of LOLR funding for a commercial bank. It only lends against Treasury securities, agency securities, and agency MBS, all collateral also accepted at the discount window. It lends at the same rate as the discount window. It only conducts one operation a day at 1:30 pm. Consequently, in this note we focus on primary credit.

securities at the discount window to raise funds, the run on SVB, and therefore perhaps the run on other banks, could perhaps have been avoided entirely. That would have provided time for banks to adjust their portfolios in an orderly way, quite possibly without any failures or FDIC resolutions. SVB may have been unwilling to make use of the discount window because the window is widely seen by bank management and by bank examiners as something to be avoided at all costs.

As noted, as of 2020, banks had pledged collateral with a lendable value of $1.6 trillion.[9] Banks have $21 trillion in liabilities of which $17 trillion are domestic deposits and $7 trillion are uninsured deposits.[10] Whether lendable value of $1.6 trillion is sufficient capacity depends in part on its distribution, but it seems low.

Indeed, the Fed's actions in response to the bank failures suggest it, too, judged the amount of discount window borrowing capacity to be low. Specifically, the Fed not only reduced the haircuts on Treasury and agency collateral to zero but created a new lending option, the Bank Term Funding Program, to provide loans to banks up to the full par value of such securities. That is, under the BTFP, the Fed's haircuts are actually negative.

The Federal Reserve's [in]actions to secure collateral from SVB

Prepositioned collateral isn't necessary if collateral can be very quickly pledged when necessary, but the SVB and Signature Bank experiences illustrate the pitfalls of such an approach. Most discount window collateral takes the form of loans; by lending against illiquid collateral the discount window's function of providing liquidity is maximized. But it takes time to pledge loans. Book entry securities can in principle be pledged instantaneously, but according to the *WSJ* article cited above, SVB encountered roadblocks to pledging securities as well. Specifically, as it scrambled on Thursday to move securities from its custodian into its Fed account, it ran out of time when the Fed's book entry system closed at 7 p.m. ET. Chairman Gruenberg's account quoted above indicates the 7 p.m. closing time for Fedwire also nearly prevented the movement of necessary collateral for Signature Bank.

It is unclear whether the Fed took all the reasonable actions available to it to prevent SVB's disorderly failure. For example, on Friday evening, after the bank-panic horse had left the barn, the Fed kept Fedwire open until midnight. If the Fed had kept its book-entry system open late on Thursday and managed to secure the collateral being transferred by its custodian, it could have extended SVB a loan that would have prevented it from ending the day with a negative balance in its account.

While the additional discount window credit available would have been insufficient to meet the $100 billion of pending withdrawals Friday morning, if SVB had been able to meet its obligations in an orderly manner on Thursday, it might have changed the entire dynamic; perhaps the run on Friday would have been much smaller.

Recommendations

Below are a few potential policy changes in response to the SVB and Signature episodes. Of course, other policy responses might also be merited. Most notably, these changes would appear to come at zero cost to economic growth and market functioning. They require only effort and leadership.

- The Federal Reserve should issue and enforce clear examiner guidance stating that access to the standing repo facility and discount window should be considered by examiners in internal liquidity stress tests and in recovery and resolution plans.

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[9] We encourage the Fed to resume its practice of publishing this statistic each quarter because it is important information for the public and Congress to judge the resilience of the banking system.

[10] FDIC Quarterly Banking Profile for the Fourth Quarter 2022, March 16, 2023. https://www.fdic.gov/analysis/quarterly-banking-profile/qbp/2022dec/qbp.pdf#page=1

- Federal Home Loan Banks should stop using blanket liens to collateralize their loans. Instead, they should take a security interest in specific assets.
- The Federal Reserve should take aggressive steps to reduce the stigma associated with the discount window.
    - Fed leadership should educate Congress and the public that borrowing from the discount window is a business decision by a bank and not a bailout, and that it is critical that banks be willing to borrow from the discount window for the Fed to be able to implement monetary policy and implement its LOLR function.
    - The Fed should also conduct a liquidity scenario exercise modeled after the Bank of England's exercise in 2019 (for more details see here) in which banks and bank examiners jointly practice banks' making use of the discount window to meet their contingency funding needs.
    - Lastly, the Fed should provide banks for a fee committed lines of credit – "Committed Liquidity Facilities" – (described further here) collateralized by banks' loans to business and households that count as HQLA. CLFs would allow banks to continue to provide credit to Main Street while providing banks same-day liquidity to meet any future runs by uninsured depositors.

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