

## **LENDER OF LAST RESORT: THE 2023 BANKING CRISIS AND COVID**

Hal S. Scott & Connor R. Kortje\*

### **Abstract**

In March 2023 Silicon Valley Bank, the 16<sup>th</sup> largest bank in the United States, was forced into FDIC-administered receivership and sold to a private acquirer after it experienced a bank run of a size and speed that were unprecedented in U.S. banking history. Its failure set off runs on two other large U.S. banks, Signature and First Republic, which were also forced into receivership and sold to private acquirers. Though each bank sought liquidity from the Federal Reserve as the lender of last resort, in no case was the lender of last resort successful in averting the bank's collapse. This article seeks to understand why. We document operational, procedural, and policy flaws in the design of the lender of last resort function and the manner in which it was deployed by the Federal Reserve and Federal Home Loan Banks. We find that these flaws rendered the lender of last resort function ineffective in preventing contagion arising from a liquidity crisis, the very purpose for which it was intended. We discuss the protection of uninsured depositors as part of the resolution of each of these banks, and the relative roles of emergency lending and deposit insurance in stemming and responding to contagion. We also examine the Federal Reserve's use of its emergency lending powers during the 2020 COVID crisis for purposes other than acting as lender of last resort. We then make twelve recommendations for how policymakers can improve the lender of last resort function and aspects of the bank liquidity and deposit insurance framework so that they can prevent the recurrence of similar crises.

\* Hal S. Scott is the Emeritus Nomura Professor of International Financial Systems at Harvard Law School and President of the Committee on Capital Markets Regulation (the "Committee"). Connor R. Kortje is a Senior Research Fellow at the Committee. This article represents the views of the authors and does not necessarily reflect the views of the Committee or its members. The authors wish to thank Jonathan Ondrejko for his valuable research assistance.

In this article we examine the actions taken by the Federal Reserve and Federal Home Loan Banks as lenders of last resort in connection with the March 2023 failure of Silicon Valley Bank and the resulting contagion in the U.S. banking system, which caused the failures of two other large banks: Signature and First Republic, as well as the resolution of each of these banks by the Federal Deposit Insurance Corporation. Part I describes what happened. Part II presents recommendations for reforms to the lender of last resort function and aspects of the deposit insurance and liquidity frameworks to prevent and deal with the recurrence of similar crises. Part II also addresses the Federal Reserve’s use of its emergency lending and asset purchase powers during the 2020 COVID crisis for purposes other than acting as lender of last resort.

## Contents

I. The Failure of SVB and Federal Banking Supervisors .....	2
A. SVB’s failure originated with its failure to manage interest rate risk and the failure of federal supervisors and SVB to take remedial action. ....	3
1. SVB’s balance sheet consisted largely of long-term fixed-rate assets and short-term uninsured deposits. ....	3
2. Federal bank supervisors and SVB management were aware of SVB’s interest rate risk and other risk management deficiencies but did not require remedial action. ....	7
3. The run on SVB.....	7
B. The FHLB and Fed did not respond quickly or completely enough as lenders of last resort.	9
1. The FHLB’s lending procedures were too slow to meet SVB’s acute liquidity needs....	9
2. The Fed’s lending procedures were too slow to meet SVB’s acute liquidity needs. ....	10
3. The Fed’s ostensible conclusion that SVB had insufficient collateral is questionable..	11
C. Consequences of the failure of SVB.....	12
1. The failure of SVB set off a contagion in the U.S. banking system. ....	13
2. The failure of SVB prompted the FDIC to recommend, and the U.S. Treasury Secretary to invoke, the systemic risk exception and the Fed to establish a new emergency lending facility.....	14
3. The failures of SVB and Signature resulted in uninsured depositors being made whole at the expense of the FDIC’s Deposit Insurance Fund; the resolution of First Republic imposed no costs on uninsured depositors. ....	17
II. Recommendations for Reforming Lender of Last Resort and the Deposit Insurance and Bank Liquidity Frameworks.....	24
A. Lessons from the SVB Crisis.....	24
1. The Fed must be prepared to lend to banks that are still solvent with adequate collateral.	24
2. The Fed should publicly voice its intention to support liquidity to solvent banks in a crisis.....	26

3. Operational improvements to lender of last resort are necessary.....	27
4. Liquidity lending to banks should occur through the discount window (Section 10B) and not under the emergency lending statute (Section 13(3)). .....	29
5. The policy of the Fed to lend to bridge banks that are less than “super solvent” should be evaluated. ....	34
6. Policymakers must consider how the Fed’s new policy to lend to bridge banks squares with OLA.....	35
7. The FHLBs should not have a role as lender of last resort. ....	36
8. The respective roles of the lender of last resort function and deposit insurance in stemming contagion must be clarified.....	37
9. The FDIC should use its authority to claw back compensation from a failed bank’s executives if their gross negligence imposes costs on the Fed, the Deposit Insurance Fund, or taxpayers.....	39
10. The SVB crisis raises important questions about the utility of the current liquidity regime in stemming contagion and whether a discount window borrowing capacity-based requirement is superior. ....	40
B. Lessons from the COVID Crisis .....	43
1. The Fed’s lending facilities should be for the purpose of acting as lender of last resort only and should not be used for fiscal policy. ....	43
2. The Fed’s intervention in securities markets should similarly not expose the Fed to credit risk, regardless of how accomplished.....	44
III. Conclusion.....	46

## **I. The Failure of SVB and Federal Banking Supervisors**

Silicon Valley Bank (“**SVB**”) was a California-based bank that specialized in lending to and taking deposits from venture capital (“**VC**”) firms and VC-financed companies. It was a state-chartered bank supervised at the state level by California, and as a member of the Federal Reserve system, its primary federal supervisor was the Federal Reserve (the “**Fed**”).<sup>1</sup> In the years leading up to its failure, it had grown substantially as a result of its customers obtaining large amounts of cash from IPOs, venture capital investments, and other fundraising activities, and depositing those funds into SVB accounts.<sup>2</sup> Between 2019 and 2022, the assets of SVB’s parent holding company, Silicon Valley Bank Financial Group (“**SVBFG**”), tripled from \$71 billion to \$212 billion.<sup>3</sup> Although

---

<sup>1</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM [“**FEDERAL RESERVE**”], REVIEW OF THE FEDERAL RESERVE’S SUPERVISION AND REGULATION OF SILICON VALLEY BANK 17 (2023), <https://www.federalreserve.gov/publications/review-of-the-federal-reserves-supervision-and-regulation-of-silicon-valley-bank.htm>.

<sup>2</sup> SVB FINANCIAL GROUP, *Annual Report on Form 10-K for fiscal year ended Dec. 31, 2022* (filed Feb. 24, 2023), <https://d18rn0p25nwr6d.cloudfront.net/CIK-0000719739/f36fc4d7-9459-41d7-9e3d-2c468971b386.pdf>.

<sup>3</sup> FEDERAL RESERVE, *supra* note 1 at 18.

SVBFG had other direct subsidiaries, they accounted for less than 1% of SVBFG’s total assets.<sup>4</sup> By 2022 SVB was the 16<sup>th</sup>-largest bank in the United States.<sup>5</sup> SVB was forced into a receivership proceeding administered by the Federal Deposit Insurance Corporation (“FDIC”) on March 10, 2023, after it experienced the largest single-day run on deposits, totaling \$42 billion, in U.S. banking history. In Part I we identify the causes and consequences of SVB’s failure, including the ensuing failures of Signature Bank and First Republic, and examine the response of the Fed and Federal Home Loan Banks (“FHLBs”) as lenders of last resort, as well as the FDIC’s process for resolving the failed banks. A full account of these events would require an accounting of the assets and liabilities of each failed bank at the time it was placed in a receivership. Although such an accounting is not available and is unlikely to become available, in October 2023, the FDIC published high-level versions of the balance sheets for each of the SVB, Signature, and First Republic receiverships. These balance sheets provide a general description of the assets and liabilities of these entities as of September 30, 2023. We have sought to make reasonable inferences about the resolution of each of the banks based on the banks’ 2022 year-end financial statements, the FDIC-prepared receivership balance sheets, and other publicly available transaction documents.

A. SVB’s failure originated with its failure to manage interest rate risk and the failure of federal supervisors and SVB to take remedial action.

SVB became vulnerable to failure because its portfolio of long-term fixed-rate assets combined with its high concentration of uninsured deposit liabilities made it susceptible to interest rate increases and unexpected deposit withdrawals. Federal banking supervisors repeatedly identified these risks in the years before SVB’s failure but did not require remedial action.

1. SVB’s balance sheet consisted largely of long-term fixed-rate assets and short-term uninsured deposits.

The substantial amounts of funding available to SVB’s startup clients during the 2019-2022 period not only meant that SVB took in more deposits from its clients, but also that its clients required fewer loans. SVB therefore needed to find other uses for its cash. It chose to invest a substantial portion of this cash in long-term debt securities, primarily fixed-rate mortgage-backed securities and Treasury securities, nearly four-fifths of which it accounted for as “held to maturity” assets. SVBFG’s balance sheet as of December 31, 2022, is displayed on the following page as Figure 1.

---

<sup>4</sup> *Id.* at 17.

<sup>5</sup> David French, et al., *SVB Is Largest Bank Failure Since 2008 Financial Crisis* REUTERS (Mar. 11, 2023), <https://www.reuters.com/business/finance/global-markets-banks-wrapup-1-2023-03-10/>.

Figure 1: SVBFG Consolidated Balance Sheet as of December 31, 2022.<sup>6</sup>

		December 31,	
		2022	2021
<b>(Dollars in millions, except par value and share data)</b>			
<b>Assets</b>			
Cash and cash equivalents	\$	13,803	\$ 14,586
Available-for-sale securities, at fair value (cost of \$28,602 and \$27,370, respectively, including \$530 and \$61 pledged as collateral, respectively)		26,069	27,221
Held-to-maturity securities, at amortized cost and net of allowance for credit losses of \$6 and \$7 (fair value of \$76,169 and \$97,227, respectively)		91,321	98,195
Non-marketable and other equity securities		2,664	2,543
Total investment securities		120,054	127,959
Loans, amortized cost		74,250	66,276
Allowance for credit losses: loans		(636)	(422)
Net loans		73,614	65,854
Premises and equipment, net of accumulated depreciation and amortization		394	270
Goodwill		375	375
Other intangible assets, net		136	160
Lease right-of-use assets		335	313
Accrued interest receivable and other assets		3,082	1,791
<b>Total assets</b>	<b>\$</b>	<b>211,793</b>	<b>\$ 211,308</b>
<b>Liabilities and total equity</b>			
<b>Liabilities:</b>			
Noninterest-bearing demand deposits	\$	80,753	\$ 125,851
Interest-bearing deposits		92,356	63,352
Total deposits		173,109	189,203
Short-term borrowings		13,565	71
Lease liabilities		413	388
Other liabilities		3,041	2,467
Long-term debt		5,370	2,570
<b>Total liabilities</b>		<b>195,498</b>	<b>194,699</b>
Commitments and contingencies (Note 21 and Note 26)			
SVBFG stockholders' equity:			
Preferred stock, \$0.001 par value, 20,000,000 shares authorized; 383,500 and 383,500 shares issued and outstanding, respectively		3,646	3,646
Common stock, \$0.001 par value, 150,000,000 shares authorized; 59,171,883 and 58,748,469 shares issued and outstanding, respectively		—	—
Additional paid-in capital		5,318	5,157
Retained earnings		8,951	7,442
Accumulated other comprehensive income (loss)		(1,911)	(9)
<b>Total SVBFG stockholders' equity</b>		<b>16,004</b>	<b>16,236</b>
Noncontrolling interests		291	373
Total equity		16,295	16,609
<b>Total liabilities and total equity</b>	<b>\$</b>	<b>211,793</b>	<b>\$ 211,308</b>

“Held to maturity” (“**HTM**”) is a GAAP accounting designation that applies when a company intends to retain a debt security until maturity and collect the principal amount.<sup>7</sup> Securities classified as HTM are recorded on a company’s balance sheet at cost and do not reflect fluctuations in market value, though the market value must be disclosed in the notes to the financial statements.<sup>8</sup> This rule applies to all companies and is not limited to banks. The regulations that determine a bank’s capital requirements apply the same approach: a decline in the market value of HTM securities does not increase a bank’s capital requirements and an increase in market value does not lower a bank’s capital requirements.<sup>9</sup>

<sup>6</sup> Because SVB accounted for substantially all of SVBFG’s assets and liabilities, we hereafter refer to SVBFG’s Dec. 31, 2022, balance sheet as that of SVB.

<sup>7</sup> PwC, LOANS AND INVESTMENTS, *Chapter 3: Accounting for Investments in Debt Securities* 3-8 et seq. [https://viewpoint.pwc.com/dt/us/en/pwc/accounting\\_guides/loans\\_and\\_investment/assets/pwcloansinvestments0922.pdf](https://viewpoint.pwc.com/dt/us/en/pwc/accounting_guides/loans_and_investment/assets/pwcloansinvestments0922.pdf) (last updated September 2022).

<sup>8</sup> *Id.* at 3-22.

<sup>9</sup> OFFICE OF THE COMPTROLLER OF THE CURRENCY [“**OCC**”], *Bank Accounting Advisory Series* (2023), <https://www.occ.treas.gov/publications-and-resources/publications/banker-education/files/bank-accounting->



SVB's liabilities consisted largely of demand deposits. However, as of year-end 2022, SVB reported that 93.8% of its deposits were not insured by the FDIC.<sup>22</sup> This was the highest percentage of total deposits that were uninsured of any U.S. bank with at least \$50 billion in assets<sup>23</sup> and more than double the average figure among banks with more than \$100 billion in assets.<sup>24</sup> It also exceeded the equivalent figure among smaller banks: For 85% of banks with assets between \$1 billion and \$50 billion, uninsured deposits constituted 50% or less of total domestic deposits.<sup>25</sup> Its balance sheet also shows that SVB had non-deposit liabilities of approximately \$22 billion, which accounted for approximately 11% of its total liabilities, \$13 billion of which consisted of secured short-term loans from the FHLB.<sup>26</sup>

Uninsured deposits are more susceptible to rapid withdrawals than insured deposits.<sup>27</sup> This is because a depositor that fears its bank will be unable to honor withdrawals in the future is more likely to withdraw its deposit if the deposit is uninsured. Although the existence of a longstanding operational relationship between a business entity depositor and a bank can mitigate the speed at which such deposits are withdrawn, uninsured deposits of business entities (which accounted for all of the largest deposits at SVB) are generally assumed to be subject to faster withdrawal rates than uninsured deposits of retail customers in times of stress.<sup>28</sup>

Moreover, FDIC data indicates that SVB's 10 largest depositors had an average balance of \$1.3 billion and together accounted for approximately 8% of SVB's total deposits.<sup>29</sup> Although comprehensive data on other banks' depositor concentrations is generally not publicly available, the FDIC has suggested that the percentage of SVB's deposits attributable to large depositors was high relative to other banks.<sup>30</sup>

---

<sup>22</sup> David Hayes, S&P GLOBAL MARKET INTELLIGENCE, *SVB, Signature Racked Up Some High Rates of Uninsured Deposits* (March 14, 2023), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/svb-signature-racked-up-some-high-rates-of-uninsured-deposits-74747639>.

<sup>23</sup> *Id.*

<sup>24</sup> FEDERAL RESERVE, *supra* note 1 at 22.

<sup>25</sup> Martin J. Gruenberg, Chairman, FDIC, *Remarks on The Resolution of Large Regional Banks — Lessons Learned* (Aug. 14, 2023), <https://www.fdic.gov/news/speeches/2023/spaug1423.html>.

<sup>26</sup> SVB FINANCIAL GROUP, *supra* note 2 at 81, 95 (total liabilities of \$195 billion minus total deposit liabilities of \$173 billion).

<sup>27</sup> Christopher Martin et al., FDIC, *Deposit Inflows and Outflows in Failing Banks: The Role of Deposit Insurance* 3 (2018), <https://www.fdic.gov/analysis/cfr/working-papers/2018/cfr-wp2018-02-update-2022-07.pdf>.

<sup>28</sup> BANK FOR INTERNATIONAL SETTLEMENTS, *Liquidity Coverage Ratio, Cash Inflows and Outflows*, [https://www.bis.org/basel\\_framework/chapter/LCR/40.htm?inforce=20191215&published=20230330#paragraph\\_LCR\\_40\\_20191215\\_40\\_40](https://www.bis.org/basel_framework/chapter/LCR/40.htm?inforce=20191215&published=20230330#paragraph_LCR_40_20191215_40_40) (last updated Mar. 30, 2023) (assigning a minimum run-off rate of 20% to uninsured deposits of non-financial corporate depositors and 10% to uninsured deposits of retail depositors).

<sup>29</sup> Jonathan Rose, *Understanding the Speed and Size of Bank Runs*, FEDERAL RESERVE BANK OF ST. LOUIS: ECONOMIC SYNOPSIS (2023), <https://research.stlouisfed.org/publications/economic-synopsis/2023/05/26/understanding-the-speed-and-size-of-bank-runs-in-historical-comparison> citing Martin J. Gruenberg, Chairman, FDIC, *Statement Before the Committee on Banking, Housing, and Urban Affairs, United States Senate “Recent Bank Failures and the Federal Regulatory Response”* 13 (Mar. 28, 2023), <https://www.banking.senate.gov/imo/media/doc/Gruenberg%20Testimony%2023-28-23.pdf>.

<sup>30</sup> FDIC, *FDIC's Supervision of Signature Bank* 11 (2023), <https://www.fdic.gov/news/press-releases/2023/pr23033a.pdf> (“Similar to SVB, SBNY had also developed a concentration of very large depositors.”).

2. Federal bank supervisors and SVB management were aware of SVB's interest rate risk and other risk management deficiencies but did not require remedial action.

Fed supervisors repeatedly identified SVB's vulnerability to interest rate risk and deficient risk management systems more generally in the years before its failure. However, neither supervisors nor SVB took action to address these issues.

For example, in January 2019, the Fed notified SVB that the bank's risk management systems were deficient.<sup>31</sup> In 2021, supervisors at the San Francisco Fed flagged SVB's liquidity risk management as a "matter requiring immediate attention."<sup>32</sup> Despite flagging interest rate risk deficiencies in each of SVB's 2020, 2021, and 2022 Capital, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk (CAMELS) exams and repeated breaches of internal risk limits, the Fed continued to rate SVB as "Satisfactory-2."<sup>33</sup> In November 2022, Fed supervisors planned to downgrade SVB's CAMELS rating for interest rate risk, ineffective board oversight, risk management weaknesses, and improper internal audit functions, but did not finalize the downgrade before SVB failed in March 2023.<sup>34</sup> It was only as of mid-February 2023 that Fed supervisory staff raised the issue of SVB's interest rate risk to the Fed's Board of Governors.<sup>35</sup>

3. The run on SVB

Over the course of 2022 and early 2023 the Fed raised interest rates by 4.5% to combat inflation.<sup>36</sup> As a result, VC financing became scarcer and SVB's VC clients began to draw down on their deposits. SVB's total deposits fell from \$198 billion in Q1 2022<sup>37</sup> to \$173 billion in Q4 2022.<sup>38</sup>

The release of SVB's year-end 2022 financial statements on February 24, 2023, revealed that the unrealized losses on SVB's HTM portfolio had grown to \$15 billion. This news prompted speculation among analysts and investors about SVB's stability.<sup>39</sup> Then, in the evening of Wednesday March 8, SVB announced that earlier that day it had sold substantially all of its \$26.1

---

<sup>31</sup> Andrew Ackerman & Dave Michaels, *Fed Raised Concerns About SVB's Risk Management in 2019* WALL STREET JOURNAL (Mar. 19, 2023), <https://www.wsj.com/articles/fed-raised-concerns-about-svbs-risk-management-in-2019-4a1d802c>.

<sup>32</sup> FEDERAL RESERVE BANK OF SAN FRANCISCO, *Letter to Greg Becker, SVB Financial Group* (Nov. 2, 2021), <https://www.federalreserve.gov/supervisionreg/files/svbf-g-liquidity-planning-target-supervisory-letter-20231102.pdf>.

<sup>33</sup> FEDERAL RESERVE, *supra* note 1 at ii. The CAMELS rating system applies to all FDIC-insured depository institutions. FEDERAL RESERVE, *Commercial Bank Examination Manual* (2021), <https://www.federalreserve.gov/publications/files/cbem.pdf>.

<sup>34</sup> FEDERAL RESERVE, *supra* note 1 at ii.

<sup>35</sup> *Id.* at 14.

<sup>36</sup> ST. LOUIS FED, *Economic Data, Federal Funds Effective Rate*, <https://fred.stlouisfed.org/series/FEDFUNDS> (last visited Aug. 30, 2023).

<sup>37</sup> SVB FINANCIAL GROUP, *Form 10-Q* 4 (Mar. 31, 2022), [https://www.sec.gov/ix?doc=/Archives/edgar/data/719739/000071973922000040/sivb-20220331.htm#fb06c5d4850746debf6165bf026a314\\_19](https://www.sec.gov/ix?doc=/Archives/edgar/data/719739/000071973922000040/sivb-20220331.htm#fb06c5d4850746debf6165bf026a314_19)

<sup>38</sup> SVB FINANCIAL GROUP, *supra* note 2 at 6.

<sup>39</sup> Tabby Kinder et al., *Silicon Valley Bank Profit Squeeze in Tech Downturn Attracts Short Sellers* FINANCIAL TIMES (Feb. 22, 2023), <https://www.ft.com/content/0387e331-61b4-4848-9e50-04775b4c3fa7>.

billion AFS security portfolio and realized a \$1.8 billion loss on the sale.<sup>40</sup> It also announced that it was attempting to raise \$2.25 billion in equity capital by issuing new stock.<sup>41</sup> It later emerged that the buyer of SVB's AFS portfolio was Goldman Sachs, which had purchased the securities at a discount to market value and was also managing SVB's attempted capital raise.<sup>42</sup> Later that evening, Moody's downgraded SVBFC's credit rating.<sup>43</sup> SVBFC's stock immediately began to decline during after-hours trading on the evening of March 8.<sup>44</sup> As far as we know, the run did not actually start during business hours on March 8; any requests for withdrawals after the close of business hours, under normal bank operating procedures, would only have been honored on March 9.

When the stock market opened at 9:30am ET/6:30am PT on Thursday, March 9, SVBFC's stock immediately declined by 30%, and ultimately declined by 60% over the course of the day.<sup>45</sup> Presumably, the run started at the opening of the bank, as the bank then honored after-hours requests from March 8 and new requests from March 9.

The pace of these withdrawals was likely accelerated by the interconnectedness of SVB's depositors. For example, many VC firms with SVB accounts advised their portfolio companies that also had SVB accounts to withdraw funds as well.<sup>46</sup> The news also spread in social media group chats among startup founders and CEOs.<sup>47</sup> By the time it closed for business on March 9, SVB had received \$42 billion in withdrawal requests,<sup>48</sup> representing 25% of its deposits, the largest single-day run in U.S. banking history.<sup>49</sup>

It is unclear what portion of these withdrawals SVB honored before it closed on Thursday March 9, and thus how much cash it would have had when it opened for business on Friday March 10. SVB's December 31, 2022, balance sheet recorded approximately \$13 billion in cash and cash equivalents.<sup>50</sup> Assuming it still had this cash plus the \$26.1 billion from the sale of AFS securities the prior day, its total cash of \$39.1 billion was \$2.9 billion short of the \$42 billion of withdrawal

---

<sup>40</sup> SVB, *Message to Stakeholders Regarding Recent Strategic Actions Taken by SVB* (Mar. 8, 2023), [https://s201.q4cdn.com/589201576/files/doc\\_downloads/2023/03/r/Q1-2023-Investor-Letter.FINAL-030823.pdf](https://s201.q4cdn.com/589201576/files/doc_downloads/2023/03/r/Q1-2023-Investor-Letter.FINAL-030823.pdf).

<sup>41</sup> *Id.*; Anna Maria Andriotis et al., *Fed, SEC Probing Goldman Sachs's Role in SVB's Final Days* WALL STREET JOURNAL (June 15, 2023), <https://www.wsj.com/articles/fed-sec-probing-goldman-sachss-role-in-svbs-final-days-a4683b5b>.

<sup>42</sup> Anna Maria Andriotis et al., *How Goldman's Plan to Shore Up Silicon Valley Bank Crumbled* WALL STREET JOURNAL (Mar. 15, 2023), [https://www.wsj.com/articles/how-goldmans-plan-to-shore-up-silicon-valley-bank-crumbled-96bb44bb?mod=article\\_inline](https://www.wsj.com/articles/how-goldmans-plan-to-shore-up-silicon-valley-bank-crumbled-96bb44bb?mod=article_inline).

<sup>43</sup> Candice Choi, *The Banking Crisis: A Timeline of Key Events* WALL STREET JOURNAL (May 11, 2023), <https://www.wsj.com/articles/bank-collapse-crisis-timeline-724f6458>.

<sup>44</sup> Hakyung Kim, *Stocks Making the Biggest Moves After Hours: Silvergate Capital, MongoDB, Uber and More*, CNBC (Mar. 8, 2023), <https://www.cnbc.com/2023/03/08/stocks-moving-big-after-hours-si-mdb-uber.html>.

<sup>45</sup> Krystal Hu et al., *Silicon Valley Bank Scrambles to Reassure Clients After 60% Stock Wipe-Out*, REUTERS (Mar. 10, 2023), <https://www.reuters.com/business/finance/silicon-valley-bank-sell-stock-cope-with-cash-burn-2023-03-09/>

<sup>46</sup> Ben Foldy et al., *How Silicon Valley Turned on Silicon Valley Bank* WALL STREET JOURNAL (Mar. 12, 2023), <https://www.wsj.com/articles/how-silicon-valley-turned-on-silicon-valley-bank-ee293ac9>.

<sup>47</sup> *Id.*

<sup>48</sup> Austin Weinstein, *SVB Depositors, Investors Tried to Pull \$42 Billion Thursday* BLOOMBERG (Mar. 10, 2023) <https://www.bloomberg.com/news/articles/2023-03-11/svb-depositors-investors-tried-to-pull-42-billion-on-thursday>.

<sup>49</sup> Rose, *supra* note 29.

<sup>50</sup> SVB FINANCIAL GROUP, *supra* note 2.

requests. SVB was reported to have ended March 9 with a negative \$1 billion cash balance, which is consistent with a scenario where SVB had about \$15 billion in cash on its balance sheet immediately before the AFS sale (i.e., \$2 billion more than at year-end 2022) and used this cash plus the \$26.1 billion in AFS sale proceeds to satisfy \$41 billion of the \$42 billion in withdrawal requests that came in on March 9, which left SVB with no cash to fund the remaining \$1 billion in outstanding requests or any further withdrawals.

Although over half of SVB's portfolio consisted of securities that qualified as "highly liquid assets" under applicable liquidity requirements,<sup>51</sup> its liquid assets were evidently insufficient to stem the run. As noted above, selling any of its HTM securities would require that all such HTM securities be marked to market, placing SVB close to insolvency. Practically speaking, carrying out such a sale would have been too slow to meet its immediate liquidity needs. SVB privately continued to attempt to complete its equity capital raise throughout the day on March 9.<sup>52</sup> Although it had secured a commitment for \$500 million of the total, it could not obtain commitments for the remaining \$1.75 billion, and the attempt ultimately failed to raise any funds.<sup>53</sup> SVB thus required an immediate external liquidity source to continue meeting its customers' withdrawal requests without risking insolvency. It therefore turned to the San Francisco FHLB and the San Francisco Fed as lenders of last resort.

We have been required to make numerous assumptions in our description above because many of the actual facts are not yet known. The Fed should therefore conduct a complete forensic investigation of how this run evolved and publish those results.

B. The FHLB and Fed did not respond quickly or completely enough as lenders of last resort.

Although SVB had become illiquid, it was still solvent, under applicable accounting rules, and had assets (HTM securities and loans) that could have served as sufficient collateral to obtain large loans from the FHLB or Fed. SVB's borrowing capacity would have been even greater had the Fed been willing to reduce the haircuts it applied to pledged assets and/or value SVB's HTM assets at par rather than market value. We discuss the trade-offs of such a policy below. However, operational and procedural shortcomings, as well as an ostensible assessment by the Fed that SVB's assets were insufficient to collateralize a loan of sufficient size to stem the run, prevented the FHLB and Fed from acting as effective lenders of last resort.

1. *The FHLB's lending procedures were too slow to meet SVB's acute liquidity needs.*

As of December 31, 2022 SVB had \$25.9 billion in collateral pre-pledged to the San Francisco FHLB and available to finance additional liquidity borrowing.<sup>54</sup> Some or all of this collateral evidently remained available as of March 9, 2023, as SVB first attempted to borrow \$20 billion

---

<sup>51</sup> Bill Nelson, BANK POLICY INSTITUTE, *The Middle Course: What Fed History Teaches Us About Liquidity Requirements* (Aug. 22, 2023), <https://bpi.com/the-middle-course-what-fed-history-teaches-us-about-liquidity-requirements/>.

<sup>52</sup> Andriotis *et al.* *supra* note 42.

<sup>53</sup> *Id.*

<sup>54</sup> SVB FINANCIAL GROUP, *supra* note 2 at 87.

from the FHLB against its pre-pledged collateral.<sup>55</sup> Though ultimately a larger loan may have been required to stem the run, relying on pre-pledged collateral may have been the logical first step for SVB's management in order to obtain the maximum amount of liquidity in a short timeframe. However, unlike the Fed, which can finance loans by creating money, the FHLB must finance such loans by issuing short-term debt. The FHLB informed SVB that there was insufficient time left in the business day to issue bonds to finance a loan of that size.<sup>56</sup>

As of December 31, 2022, SVB also had \$5.3 billion in collateral pre-pledged to the Fed and available to support borrowing. Assuming an approximately similar amount remained available as of March 2023, this was still insufficient to support a loan of the size necessary to secure SVB's liquidity, thus necessitating the transfer of additional collateral.<sup>57</sup> SVB first asked the FHLB to transfer \$20 billion of its pre-pledged collateral to the Fed. But before such a transfer could occur, the FHLB needed to complete various procedural steps, including recalculating SVB's collateral requirements for its outstanding loans with the FHLB, that it could not complete that day.<sup>58</sup>

2. *The Fed's lending procedures were too slow to meet SVB's acute liquidity needs.*

Once it became clear that the FHLB could not support the required borrowing or transfer the collateral to the Fed, SVB asked its custodial bank, BNY Mellon, to transfer \$20 billion of SVB's government securities (presumably some portion of its HTMs) as additional collateral to the Fed. Such transfers must take place via the Fedwire system<sup>59</sup> and SVB made its request after BNY Mellon's daily cutoff time for initiating these transfers. BNY Mellon agreed to extend this cutoff time to facilitate the transfer. However, Fedwire has its own daily cutoff of 4pm PT/7pm ET. Although BNY Mellon attempted to complete the transfer on SVB's behalf before this deadline, the Fed required a "test trade" to take place before the actual collateral transfer. This test trade could not take place before the deadline, and the Fed declined to extend the deadline to facilitate the transfer.<sup>60</sup> It is unclear why the deadline was not extended, though it has been reported that the Fed's Board of Governors did not become aware of the run on SVB until 12pm PT/3pm ET, which may have meant that there was insufficient time to coordinate this action.<sup>61</sup> As a result, at close of business on March 9, SVB did not have sufficient cash to cover all outstanding deposit withdrawal requests, and it ended the day with a negative cash balance of approximately \$958 million.<sup>62</sup>

---

<sup>55</sup> Hannah Miao, et al., *How the Last-Ditch Effort to Save Silicon Valley Bank Failed* WALL STREET JOURNAL (Mar. 22, 2023), <https://www.wsj.com/articles/how-the-last-ditch-effort-to-save-silicon-valley-bank-failed-89619cb2>.

<sup>56</sup> *Id.*

<sup>57</sup> *Id.*

<sup>58</sup> *Id.*

<sup>59</sup> FEDERAL RESERVE, Discount Window, Collateral Information, [https://www.frbdiscountwindow.org/Pages/Collateral/pledging\\_collateral](https://www.frbdiscountwindow.org/Pages/Collateral/pledging_collateral) (last visited July 19, 2023).

<sup>60</sup> Miao et al., *supra* note 55.

<sup>61</sup> *Infra* note 150.

<sup>62</sup> DEPARTMENT OF FINANCIAL PROTECTION & INNOVATION ["CDFPI"], *California Financial Regulator Takes Possession of Silicon Valley Bank 1* (Mar. 10, 2023), <https://dfpi.ca.gov/wp-content/uploads/sites/337/2023/03/DFPI-Orders-Silicon-Valley-Bank-03102023.pdf>.

3. *The Fed's ostensible conclusion that SVB had insufficient collateral is questionable.*

In the morning of March 10, the \$20 billion collateral transfer that SVB had sought to complete from BNY Mellon the prior day reached the Fed. But by then news of SVB's distress had spread further and SVB expected \$100 billion in withdrawals, representing 62% of deposits, beyond the \$42 billion in requests received the prior day.

At 11:15am EST/8:15am PST on March 10, before SVB opened for business, the California bank regulator (the Department of Financial Protection and Innovation (the "CDFPI")), in consultation with the FDIC and Fed, placed SVB into receivership proceedings, citing inadequate liquidity and insolvency, and appointed the FDIC as receiver.<sup>63</sup>

In testimony before the Senate Banking Committee, Fed Vice Chair for Supervision Barr indicated that at the time SVB was placed in receivership SVB "did not have enough cash or collateral" to keep up with the rapid pace of withdrawals.<sup>64</sup> The Fed has not clarified if this statement indicates an assessment that SVB had insufficient assets to pledge as collateral (as opposed to a simple assessment of assets that SVB had already pledged) to make further discount window loans to SVB a viable option to stem the run, and if so, the precise basis for this assessment.

We estimated above that SVB satisfied \$41 billion of the \$42 billion in withdrawal requests that it received on March 9 with the proceeds of its March 8 sale of AFS securities plus preexisting cash on its balance sheet, such that SVB closed for business on March 9 with a negative cash balance of just under \$1 billion. But SVB evidently expected \$100 billion in withdrawals on March 10. If one assumes that none of this \$100 billion was already reflected in the negative \$1 billion cash balance as of the end of March 9, SVB would have required a discount window loan of approximately \$101 billion to meet all outstanding withdrawal requests. Did SVB possess sufficient collateral to obtain such a loan? It is impossible to be definitive based on publicly available information, but there are strong indicators that SVB may have possessed the necessary assets to collateralize a loan of that size. At the time SVB was placed in receivership, its assets included a portfolio of HTM securities consisting of Treasury and agency securities, which SVB's year-end 2022 balance sheet valued at \$91 billion. The Fed accepts such securities as collateral to support discount window borrowing, but its policy is to value them at market value, not their par value.<sup>65</sup> As of early March 2023, it also subjected such collateral to "haircuts" i.e., discounts to market value, ranging from 1% to 8%. As noted above, the market value of SVB's HTM securities portfolio had declined to \$76.2 billion by December 2022. The Fed also accepts loan assets as collateral for discount window loans. As of December 31, 2022, SVB's balance sheet recorded net loan assets worth \$73.6 billion at amortized cost (essentially, par value). However as in the case of SVB's HTM securities portfolios, we do not know what the market value of these loans was as of March 2023. Determining the market value of these loans in real time would have also been a significant challenge for the Fed. Moreover, the haircuts the Fed applies to loans vary widely depending on the type of loan and its individual characteristics. For example, the Fed's current

---

<sup>63</sup> *Id.*; Gruenberg, *supra* note 29 at 7.

<sup>64</sup> Michael S. Barr, Vice Chair for Supervision, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, *Statement Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate* 3 (Mar. 27, 2023), <https://www.banking.senate.gov/imo/media/doc/Barr%20Testimony%203-28-231.pdf>.

<sup>65</sup> FEDERAL RESERVE, *supra* note 59.

policy is to discount a floating rate first lien mortgage loan by anywhere from 6% to 46% of its fair market value.<sup>66</sup> It is therefore impossible to know definitively how the Fed's haircut and valuation policies as of March 2023 would have valued SVB's loan portfolio. However, the terms of the acquisition deal between SVB Bridge Bank and First Citizens (discussed below) provide a clue as to the market value of SVB's loan portfolio as of March 2023 insofar as the terms of the deal valued SVB's loan portfolio at an approximately 22% discount to book value. Thus, even assuming that SVB's HTM portfolio was discounted by 8% and its loan portfolio's market value, subject to applicable discounts, was only 50% of the par value recorded on SVB's last balance sheet (i.e., far in excess of the discount applied by SVB's private acquirer), the combined value of these portfolios as collateral would have been \$106.9 billion. This estimate suggests that SVB may have had assets sufficient to collateralize a discount window loan to meet outstanding withdrawal requests under then-existing Fed policies.

This estimate is of course based on the values of SVB's assets two months before the events in question. But even assuming the market value of SVB's securities and loan portfolios declined during that period even below the levels implied by the terms of the First Citizens acquisition, the Fed has wide discretion to vary its collateral valuation and haircut policies in a manner that could well have continued to accommodate further discount window loans to SVB. Indeed, on March 13, following the collapse of SVB, the Fed eliminated entirely the haircuts on U.S. government securities. As discussed further below, the Fed also has discretion to value collateral at par rather than market value, which would have further increased the valuation of SVB's assets. It is unclear whether the Fed considered adjusting the applicable haircuts, as it did after SVB failed, or its underlying valuation policy, as it did for purposes of the new lending facility it established following the crisis, to facilitate discount window lending to SVB, and if so, why it declined to do so.

It is also possible that the Fed had decided categorically not to lend further to SVB, regardless of the value of available collateral, because of SVB's proximity to insolvency. It is unclear which if any of these factors was decisive in any assessment by the Fed that further discount window lending to SVB was not a viable option, which led directly to SVB being placed in receivership. However, as we discuss further in Part II, what is clear is that the Fed was not legally barred from adjusting its collateral policies to permit further discount window loans to SVB had it chosen to do so.

### C. Consequences of the failure of SVB

The run on SVB and its entry into receivership produced significant and costly consequences for the U.S. banking system. Most immediately, it sparked a contagion that contributed to the failures of two other banks: Signature Bank, and later First Republic, each of which the relevant state banking agencies seized and placed in receivership proceedings, appointing the FDIC as receiver. The FDIC then arranged for sales to private acquirers.<sup>67</sup> Second, the resolution of each of SVB and Signature included protection for all uninsured depositors pursuant to the systemic risk exception. The FDIC's sale of First Republic, though it did not involve the systemic risk exception,

---

<sup>66</sup> *Id.*

<sup>67</sup> FDIC, *JPMorgan Chase Bank, National Association, Columbus, Ohio Assumes All the Deposits of First Republic Bank, San Francisco, California* (May 1, 2023), <https://www.fdic.gov/news/press-releases/2023/pr23034.html>.

also did not impose losses on uninsured depositors. As of March 2024, the combined cost to the FDIC's Deposit Insurance Fund of the resolution of these three banks is expected to total approximately \$40.3 billion.<sup>68</sup> Of these costs the FDIC estimates \$16.3 billion is attributable to the protection of SVB's and Signature's uninsured depositors pursuant to the systemic risk exception.<sup>69</sup> These costs will eventually be recouped via special assessments on certain large banks and regular assessments on all insured banks, which banks may pass on to customers in the form of higher charges for services. Third, it prompted the Fed to create a new emergency lending facility in an effort to stem further possible contagion.

1. *The failure of SVB set off a contagion in the U.S. banking system.*

The news of SVB's distress almost immediately sparked runs that resulted in the failure of two other U.S. banks: Signature Bank and First Republic.

Signature Bank was the 29<sup>th</sup> largest U.S. bank with total assets of \$110 billion. As a New York-chartered bank that was not a member of the Federal Reserve system, its primary federal regulator was the FDIC, not the Fed. It focused on serving clients in the cryptoasset industry. Like SVB, over 90% of its deposits were uninsured as of December 31, 2022.<sup>70</sup> Moreover, the FDIC reported that as of year-end 2021, approximately 40% of total deposits were attributable to only 60 depositors and 14% of total deposits were attributable to only four depositors.<sup>71</sup> As in the case of SVB, the FDIC's report suggested that this was higher than other banks. Also like SVB, Signature experienced rapid growth in the 2019-2022 period. However, rising interest rates and volatility in the cryptoasset industry caused deposits to decline over the course of 2022 by \$17.6 billion.<sup>72</sup> Public perception that Signature was associated with failed cryptoasset exchange FTX and related companies also resulted in increased scrutiny of Signature and speculation about its liquidity.<sup>73</sup> The announcement on March 8 of the self-liquidation of another cryptoasset lender, Silvergate intensified this speculation.<sup>74</sup>

On Friday March 10, the day after the run on SVB began, 20% of Signature's deposits were withdrawn within a few hours. Signature did not have sufficient cash to meet these withdrawal requests. Like SVB, Signature sought to obtain a loan from the Fed's discount window. However, unlike in the case of SVB on the prior day, the Fed extended Fedwire's hours to allow Signature to post the required collateral. Despite obtaining this loan, deposit requests continued to mount at an unsustainable level over the weekend. Signature's ability to obtain additional discount window loans was also constrained by the Fed's refusal to accept as collateral certain of Signature's loans to obligors with foreign limited partners.<sup>75</sup> The Fed's policy is generally not to accept loans to foreign obligors as discount window collateral, due to the risk that the Fed would not be able to

---

<sup>68</sup> FDIC, *BankFind Suite: Bank Failures & Assistance Data* <https://banks.data.fdic.gov/bankfind-suite/>, (last accessed Feb. 6, 2023).

<sup>69</sup> FDIC, *Special Assessment Pursuant to Systemic Risk Determination* 88 FED. REG. 228 (Nov. 29, 2023), <https://www.fdic.gov/news/board-matters/2023/2023-11-16-notational-fr-b.pdf>

<sup>70</sup> FDIC, *supra* note 30 at 6.

<sup>71</sup> *Id.* at 11.

<sup>72</sup> *Id.* at 7.

<sup>73</sup> *Id.* at 14.

<sup>74</sup> *Id.*

<sup>75</sup> *Id.* at 12.

perfect and enforce a security interest on such collateral.<sup>76</sup> Presumably Signature sought to persuade the Fed, unsuccessfully, that the existence of foreign limited partners in the obligors on some of its loans did not conflict with this policy.

By the afternoon of Sunday, March 12, Signature still had \$7.9 billion in outstanding withdrawal requests, but only \$3 billion in liquid assets available to meet those requests.<sup>77</sup> As a result, the New York state banking regulator in consultation with the FDIC placed Signature into receivership proceedings on the afternoon of Sunday, March 12, and appointed the FDIC as receiver.<sup>78</sup>

First Republic was the 14<sup>th</sup> largest U.S. bank with total assets of \$212.6 billion.<sup>79</sup> Its business model focused on serving wealthy clientele and providing enhanced customer service.<sup>80</sup> During the first quarter of 2023, its deposits fell by more than \$100 billion, from \$176 billion as of year-end 2022 to \$74 billion by March 31, 2023, most of which occurred as a result of the contagion following SVB's entry into receivership on March 10<sup>81</sup>. In an effort to stay ahead of mounting deposit withdrawals, First Republic obtained a \$30 billion infusion of deposits from a consortium of eleven major U.S. banks on March 16.<sup>82</sup> It also borrowed up to \$109 billion from the Fed's discount window,<sup>83</sup> and \$13.5 billion from the Fed's newly established Bank Term Funding Program, the details of which are discussed below.<sup>84</sup> Although these loans were enough to avert immediate liquidity crisis, deposit requests continued to mount, and the interest rates it had to pay on Fed and FHLB loans exceeded the rates it was earning on its assets, placing First Republic at continued risk of insolvency.

2. *The failure of SVB prompted the FDIC to recommend, and the U.S. Treasury Secretary to invoke, the systemic risk exception and the Fed to establish a new emergency lending facility.*

When on Friday, March 10 the FDIC initially announced that SVB had been placed in receivership, the announcement indicated that uninsured depositors would not be guaranteed to receive all of their deposits.<sup>85</sup> However, on Sunday, March 12, in an effort to stem the contagion following

---

<sup>76</sup> THE FEDERAL RESERVE, *The Discount Window, Eligible Collateral, Securities and Loans* [https://www.frbdiscountwindow.org/Pages/Collateral/collateral\\_eligibility](https://www.frbdiscountwindow.org/Pages/Collateral/collateral_eligibility) (last visited Mar. 29, 2024).

<sup>77</sup> FDIC, *supra* note 30 at 14.

<sup>78</sup> *Id.*

<sup>79</sup> FEDERAL RESERVE, *Insured U.S.-Chartered Commercial Banks That Have Consolidated Assets of \$300 Million or More, Ranked by Consolidated Assets* (as of Dec. 31, 2022), <https://www.federalreserve.gov/releases/lbr/>.

<sup>80</sup> Rachel Louise Ensign et al., *Why First Republic Collapsed* WALL STREET JOURNAL (May 1, 2023), <https://www.wsj.com/articles/first-republic-bank-collapse-why-banking-crisis-61660d96>.

<sup>81</sup> Gordon Smith, *FirstFT: First Republic Deposit Withdrawals Hit \$100BN* FINANCIAL TIMES (Apr. 25, 2023), <https://www.ft.com/content/f60bcfd1-4512-4978-af2d-aa11a20a1f20>.

<sup>82</sup> David Benoit et al., *Eleven Banks Deposit \$30 Billion in First Republic Bank* WALL STREET JOURNAL (Mar. 16, 2023), [https://www.wsj.com/articles/jpmorgan-morgan-stanley-and-others-in-talks-to-bolster-first-republic-4f9eeb76?mod=article\\_inline](https://www.wsj.com/articles/jpmorgan-morgan-stanley-and-others-in-talks-to-bolster-first-republic-4f9eeb76?mod=article_inline).

<sup>83</sup> *Id.*

<sup>84</sup> Lorenzo Migliorato, *First Republic Taps Fed Facilities in Effort to Plug Funding Hole* RISK.NET (Apr. 26, 2023), <https://www.risk.net/risk-quantum/7956577/first-republic-taps-fed-facilities-in-effort-to-plug-funding-hole>

<sup>85</sup> FDIC, *FDIC Creates a Deposit Insurance National Bank of Santa Clara to Protect Insured Depositors of Silicon Valley Bank, Santa Clara, California* (Mar. 10, 2023), <https://www.fdic.gov/news/press-releases/2023/pr23016.html> (last updated Mar. 12, 2023).

SVB's and Signature's entry into receivership, the Fed and FDIC recommended, and the U.S. Treasury Secretary (in consultation with the President) invoked, the systemic risk exception with respect to SVB and Signature, relieving the FDIC from the obligation to resolve failed banks in a manner that minimizes the cost to the FDIC's Deposit Insurance Fund. This allowed the FDIC to guarantee all uninsured deposits in the resolutions of both SVB and Signature, either by paying out uninsured deposit claims directly or arranging for a private acquisition that includes the assumption of uninsured deposits.<sup>86</sup> Since the passage of the Dodd-Frank Act in 2010, invocation of the systemic risk exception can only occur with respect to banks in FDIC receivership. Dodd-Frank also prohibited increasing deposit guarantees for banks generally, as occurred in the 2008 financial crisis, without Congressional approval in the form of a joint resolution. Amendments adopted in 2020 in response to the COVID crisis provided such approval to the FDIC to guarantee deposits as part of a widely available program to guarantee obligations of solvent insured depository institutions or depository institution holding companies.<sup>87</sup> This approval expired at the end of 2020. Obtaining the joint resolution of Congress necessary to renew this authority during the events of March 2023 crisis would have been impracticable. As a legal matter, therefore, the uninsured depositors of SVB and Signature could not have been guaranteed through the systemic risk exception before the banks were placed in insolvency proceedings.

Also on March 12, the Fed announced the establishment of a new lending facility: the Bank Term Funding Program ("BTFP").<sup>88</sup> The BTFP was established under Section 13(3) of the Federal Reserve Act, which allows the Fed to make emergency loans under "unusual and exigent circumstances."<sup>89</sup> Because the BTFP was established under Section 13(3), its establishment, pursuant to Dodd-Frank, required approval from the Department of the Treasury.

Section 13(3) was added to the Federal Reserve Act to enable emergency lending to non-banks. Since then, the Fed has invoked it only sparingly, and principally to lend to non-banks. Before the 2008 financial crisis, all lending under Section 13(3) occurred during the 1932 through 1936 period and amounted to \$1.5 million.<sup>90</sup> The BTFP is the first facility established under Section 13(3) that is available exclusively to banks. Under the BTFP, collateral must consist of government securities. Loan collateral is not permissible. However, unlike under the discount window, government securities collateral is valued at par value rather than discounted market value. And whereas the terms of discount window loans are statutorily limited to four months, the BTFP permits a maximum loan term of one year. The Treasury provided up to \$25 billion in credit protection using the Exchange Stabilization Fund for any losses the Fed realizes on loans it makes

---

<sup>86</sup> FDIC IMPROVEMENT ACT §§ 141(a), 141(a)(4)(G).

<sup>87</sup> Dodd-Frank Act, §§ 1105-1106. The FDIC invoked the exception five times during 2008-2009, including to establish the temporary liquidity guarantee program. CONGRESSIONAL RESEARCH SERVICE, *Bank Failures: The FDIC's Systemic Risk Exception* (Apr. 11, 2023), <https://crsreports.congress.gov/product/pdf/IF/IF12378>. FDIC, *Options for Deposit Insurance Reform* 19 (2023), <https://www.fdic.gov/analysis/options-deposit-insurance-reforms/report/options-deposit-insurance-reform-section-3.pdf>.

<sup>88</sup> FEDERAL RESERVE, *Bank Term Funding Program*, <https://www.federalreserve.gov/financial-stability/bank-term-funding-program.htm>.

<sup>89</sup> FEDERAL RESERVE, *Periodic Report: Update on Bank Term Funding Program Authorized by the Board under Section 13(3) of the Federal Reserve Act* (Jun. 12, 2023), <https://www.federalreserve.gov/publications/files/13-3-report-btftp-20230613.pdf>.

<sup>90</sup> Baxter (2009); Hal Scott, *Connectedness and Contagion*.

under the BTFP.<sup>91</sup> From its inception, the BTFP was set up as a temporary facility: new BTFP loans were to be available to banks only until March 11, 2024, unless the Fed extended the term.<sup>92</sup>

Fed officials have suggested that the decision to limit BTFP collateral to government securities stemmed from an intention to alleviate the pressure on banks holding assets that had been devalued due to rising interest rates and to limit credit risks to the Fed from BTFP loans.<sup>93</sup> But the Fed accepts the risks associated with non-government securities collateral, e.g. loans, for discount window loans and manages that risk by applying haircuts. It is thus still unclear why the Fed did not apply an equivalent policy for the BTFP.

In its first week, the BTFP provided a total of \$11.9 billion in loans.<sup>94</sup> By comparison, outstanding discount window loans increased from less than \$10 billion to \$152.85 billion during the same week.<sup>95</sup> While total loans under the BTFP had increased to \$129 billion by May 31, by that time any immediate contagion stemming from SVB's failure had largely been contained.<sup>96</sup> On January 24, 2024, the Fed announced that it intended to allow the BTFP to expire on March 11, 2024, as originally scheduled when the program was established.<sup>97</sup> The BTFP expired as scheduled on March 11, 2024.<sup>98</sup>

The total amounts borrowed under the BTFP in comparison to the total amounts borrowed from the discount window since the BTFP was established in March are illustrated in Figure 2 below. Figure 2 shows that in the weeks immediately following SVB's collapse, borrowings under the discount window far exceeded borrowings under the BTFP. Usage of the BTFP only began to exceed discount window borrowings about one month later. In the months immediately following, discount window lending reverted to pre-crisis level, whereas outstanding BTFP loans remained consistently around \$100 billion before increasing significantly beginning in November 2023. As discussed in Part II these data thus suggest that banks may have been using the BTFP as an arbitrage opportunity unconnected with financial distress, until the Fed modified the terms of the BTFP to end that opportunity in January 2024, at which point BTFP usage levelled off.

---

<sup>91</sup> FEDERAL RESERVE *supra* note 88.

<sup>92</sup> *Id.*

<sup>93</sup> Richard Ostrander, *Remarks on the Panel "Bank Crisis Framework: Learning from Experience"* (Jun. 17, 2023), <https://www.newyorkfed.org/newsevents/speeches/2023/ost230617> ("By limiting eligible BTFP collateral to essentially Treasury and Agency securities, the BTFP was targeting issues arising from interest rate-driven mark-to-market losses. Allowing other forms of collateral would have potentially introduced questions about the credit or underwriting of the collateral, which would have unnecessarily complicated and increased the risks of the program.").

<sup>94</sup> Alex Harris & Craig Torres, *Banks Borrow \$164.8 Billion From Fed in Rush to Backstop Liquidity* BLOOMBERG (Mar. 16, 2023), <https://www.bloomberg.com/news/articles/2023-03-16/banks-rush-to-backstop-liquidity-borrow-164-8-billion-from-fed>.

<sup>95</sup> *Id.*

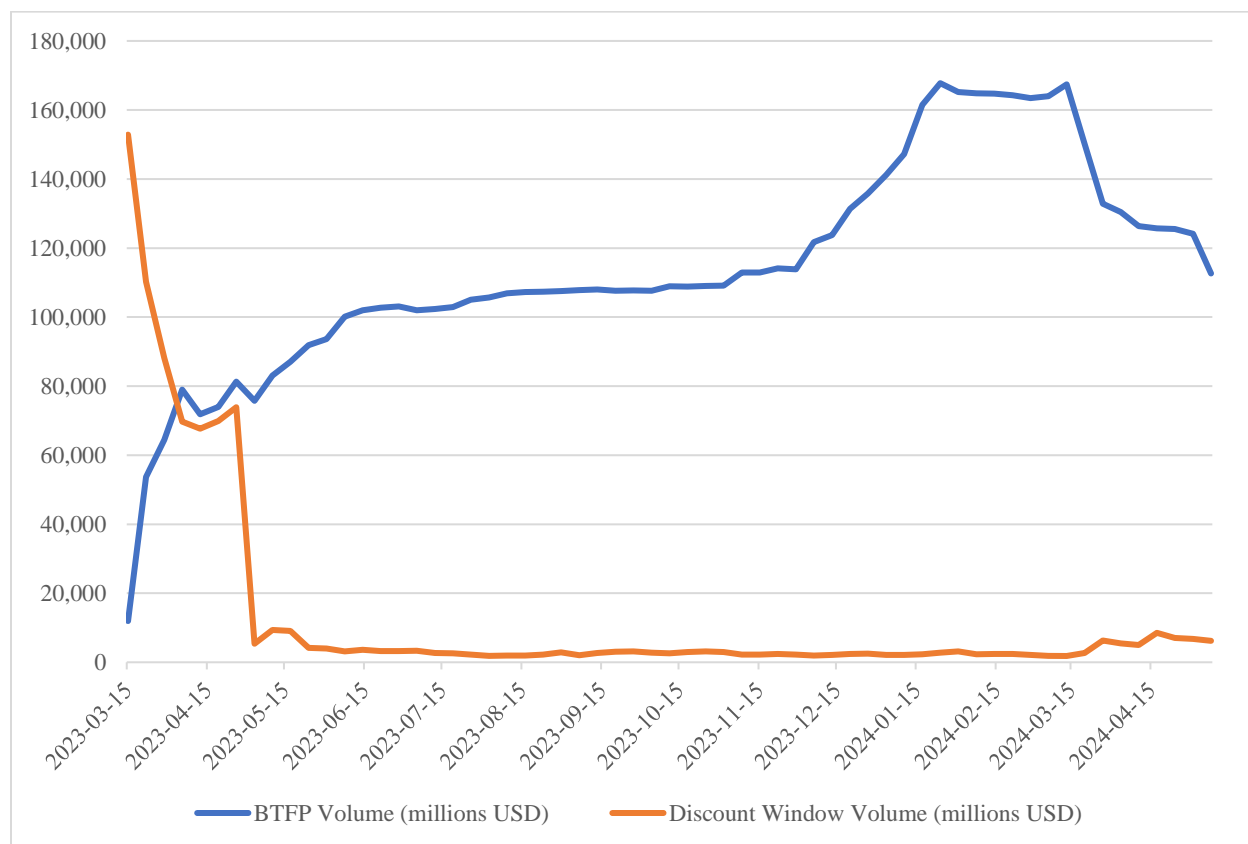
<sup>96</sup> FEDERAL RESERVE, *Periodic Report: Update on Bank Term Funding Program Authorized by the Board under Section 13(3) of the Federal Reserve Act* (Jun. 12, 2023), <https://www.federalreserve.gov/publications/files/13-3-report-btfp-20230613.pdf>.

<sup>97</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, *Federal Reserve Board Announces the Bank Term Funding Program (BTFP) Will Cease Making New Loans as Scheduled on March 11* (Jan. 24, 2024), <https://www.federalreserve.gov/newsevents/pressreleases/monetary20240124a.htm>.

<sup>98</sup> THE FEDERAL RESERVE, *Bank Term Funding Program, General Information*, [https://www.frbdiscountwindow.org/GeneralPages/bank\\_term\\_funding\\_program](https://www.frbdiscountwindow.org/GeneralPages/bank_term_funding_program) (last updated Mar. 11, 2024).

The rationales offered for establishing this new facility under the Fed’s emergency lending authority (Section 13(3)) rather than the discount window (Section 10B) include that Section 13(3) allowed more flexibility with regard to collateral and longer terms,<sup>99</sup> as well as the assertion that borrowing from a program established under Section 13(3) carries less stigma among banks compared to borrowing from the discount window.<sup>100</sup> The validity of these rationales is discussed in Part II below.

**Figure 2: Usage of Discount Window and BTFP**



3. *The failures of SVB and Signature resulted in uninsured depositors being made whole at the expense of the FDIC’s Deposit Insurance Fund; the resolution of First Republic imposed no costs on uninsured depositors.*

The resolutions of SVB and Signature occurred via the establishment of bridge banks. Bridge banks are temporary banks chartered by the FDIC that generally acquire substantially all the assets

<sup>99</sup> Richard Ostrander, FEDERAL RESERVE BANK OF NEW YORK, *Remarks on the Panel “Bank Crisis Framework: Learning from Experience - Paris Meeting of the Committee on International Monetary Law of the International Law Association* (June 17, 2023), <https://www.newyorkfed.org/newsevents/speeches/2023/ost230617>. (“Along with the goal of enabling financing up to the face value of these securities, the Fed concluded it would be helpful to the borrowers for the term of the loan to be set at one year.”).

<sup>100</sup> Rachel Posner & Megan Green, KROLL, *The Federal Reserve Rides to the Rescue* (Mar. 13, 2023), <https://www.kroll.com/en/insights/publications/the-federal-reserve-rides-to-the-rescue>.

and assume insured deposit liabilities of a bank that enters FDIC-administered receivership proceedings. The remainder of the bank's liabilities usually remain in an FDIC-administered receivership. The bridge bank may also assume the failed bank's uninsured deposits when the assumption of uninsured deposits is consistent with the FDIC's obligation to accept the bid for failing bank that imposes the least cost on the DIF, or when the systemic risk exception is invoked. Bridge banks continue to serve the insolvent bank's customers while the FDIC seeks an acquirer for the bridge bank's assets and liabilities. Depositors of the insolvent bank become depositors of the bridge bank, and can withdraw their funds, or make additional deposits, during the operation of the bridge bank, both of which occurred in the case of the SVB and Signature bridge banks. The FDIC's guarantee of uninsured deposits under the systemic risk exception remains in place only while the deposit is a liability of the bridge bank. Once an uninsured deposit liability is assumed by an acquirer, it no longer benefits from the FDIC's guarantee. It is commonly the case that the deposits that the acquirer agrees to assume do not match exactly the market value of the assets that the acquirer wishes to acquire. In such cases the acquirer either makes a cash payment or issues an IOU to the FDIC as receiver equal to the difference between the two values (when the market value of the assets exceeds the value of the assumed deposits and as occurred in the case of SVB) or receives a cash payment from the FDIC (when the market value of the assets is less than the value of the assumed deposits, and as occurred in the case of Signature).

Any assets and liabilities of the bridge bank that cannot be successfully transferred to an acquirer remain lodged in the bridge bank, which is then placed into a separate receivership, and the assets and liabilities are later liquidated by the FDIC. The original failed bank receivership holds a residual equity interest in the bridge bank receivership. As a result, in the case of each of the banks that were resolved using bridge banks – SVB and Signature – there are two separate receivership entities, each with its own assets and liabilities.

On Sunday March 12 at 6:15pm ET/3:15pm PT, the Secretary of the Treasury, with the requisite concurrence of the President, invoked the systemic risk exception with respect to the failures of SVB and Signature, allowing for the full protection of uninsured depositors in these banks. The FDIC then chartered Silicon Valley Bridge Bank, N.A. ("SVB Bridge Bank") and Signature Bridge Bank, N.A. ("Signature Bridge Bank"). The same day, SVB Bridge Bank acquired substantially all of SVB's approximately \$167 billion in assets and assumed all of SVB's approximately \$119 billion in insured and uninsured deposit liabilities.<sup>101</sup> Also the same day, Signature Bridge Bank acquired substantially all of Signature's \$110 billion in assets and assumed its approximately \$89 billion in insured and uninsured deposit liabilities.<sup>102</sup> In each case, the failed banks' other liabilities remained in the respective FDIC receiverships. Fed documents disclose and testimony from Vice Chair for Supervision Barr confirmed that the Fed extended a total of approximately \$179 billion in credit through the discount window to the SVB and Signature Bridge Banks (no breakdown of the allocation between them is yet public) to provide the necessary liquidity to the bridge banks to continue serving customers during the pendency of these bridge

---

<sup>101</sup> Gruenberg, *supra* note 29 at 17.

<sup>102</sup> FDIC, *FDIC Establishes Signature Bridge Bank, N.A., as Successor to Signature Bank, New York, NY* (Mar. 12, 2023), <https://www.fdic.gov/news/press-releases/2023/pr23018.html>.

banks.<sup>103</sup> As discussed further in Part II, as a result of the bridge banks' assumption of uninsured deposit liabilities and the built-in losses in the banks' securities portfolios, the bridge banks were likely much less solvent than the prototypical bridge bank and, but for the FDIC's guarantee, may have been close to insolvency if the securities assets were valued at market value.

The Fed received credit protection for the loans it extended to the bridge banks in the form of collateral and an FDIC corporate guarantee. The collateral consisted of a priority security interest in the bridge banks' assets. The FDIC in its corporate capacity also guaranteed repayment of the full amount of the loans. The FDIC evidently based its claim of authority for this guarantee from the FDIC's general authority to issue obligations, including guarantees, under the Federal Deposit Insurance Act.<sup>104</sup> This may have been the first time that the FDIC used this general authority to provide such a guarantee to the Fed. Both these credit protections remained in place as the discount window loans were not assumed by the bridge bank acquirers and thus remained in the bridge bank receivership: the Fed retained its security interest in the banks' securities portfolios in the receiverships, and the FDIC's guaranties remained in place with respect to the Fed's claims against the receiverships. We note as well that the Fed evidently has available to it another mechanism of credit protection that, for unknown reasons, it did not draw upon. Namely, the Fed has reported that it is the beneficiary of an indemnity agreement with the FDIC under which the FDIC agrees to repay any outstanding discount window loan liabilities of an insolvent bank in return for the Fed's surrender of its rights to the collateral securing those loans.<sup>105</sup> It is unclear whether the Fed had a right to demand immediate repayment under the indemnity agreement in the case of SVB and Signature, and if it did, why it chose not to exercise it, rather than remaining a secured creditor of the receiverships pending liquidation of the receiverships' assets.<sup>106</sup>

On March 13, the SVB and Signature Bridge Banks opened for business and began serving former customers of SVB and Signature.<sup>107</sup> On March 15, the FDIC began soliciting bids from other banks to acquire the bridge banks.<sup>108</sup> Of the five bids received with respect to Signature Bridge Bank, the FDIC approved the bid of Flagstar Bank. On March 19, Flagstar Bank acquired approximately \$38 billion of Signature Bridge Bank's assets, including loan assets of \$12.9 billion, and assumed \$34 billion in deposit liabilities, which constituted all of Signature's deposit liabilities, except for \$4 billion in deposits from Signature's digital asset (i.e., cryptoasset) customers.<sup>109</sup> In exchange, Flagstar issued the FDIC common stock appreciation rights worth up to \$300 million.<sup>110</sup>

---

<sup>103</sup> Bill Nelson, BANK POLICY INSTITUTE, *The Mysterious Footnote 7: To Whom And on What Terms Is The Fed Lending \$173 Billion* (Apr. 20, 2023), <https://bpi.com/the-mysterious-footnote-7-to-whom-and-on-what-terms-is-the-fed-lending-173-billion/>; CSPAN, *Federal Officials Testify at House Hearing on Silicon Valley Bank Collapse* (Mar. 29, 2023), <https://www.c-span.org/video/?527011-1/federal-officials-testify-house-hearing-silicon-valley-bank-collapse> (timestamp: 3:34:30).

<sup>104</sup> FEDERAL DEPOSIT INSURANCE ACT, §§ 15, 16.

<sup>105</sup> Bill Nelson, *Forward Guidance: FOMC Call and New Info on the Fed's Loans to the FDIC* (Jun. 13, 2023), <https://www.linkedin.com/pulse/forward-guidance-fomc-call-new-info-feds-loans-fdic-bill-nelson/>.

<sup>106</sup> *Id.*

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

<sup>109</sup> FDIC, *Subsidiary of New York Community Bancorp, Inc., to Assume Deposits of Signature Bridge Bank, N.A., from the FDIC* (Mar. 19, 2023), <https://www.fdic.gov/news/press-releases/2023/pr23021.html>; NEW YORK COMMUNITY BANCORP, INC. Form 8-K (Mar 19, 2023), <https://www.sec.gov/Archives/edgar/data/910073/000119312523074432/d481717d8k.htm>.

<sup>110</sup> Gruenberg, *supra* note 16 at 16.

Approximately \$60 billion of Signature’s loan assets remained in the Signature receivership for later disposition by the FDIC.<sup>111</sup> As of September 30, 2023, the Signature receivership and Signature bridge bank receivership retained combined assets of approximately \$60.9 billion. Their combined liabilities totaled \$61.1 billion and consisted primarily of \$39 billion in FDIC subrogated deposit claims. These claims arise when the FDIC pays out depositors of the failed bank and thereby takes over the claims of the depositors against the failed bank. These deposit payouts generally arise from two sources: (1) depositors that initiated withdrawal requests that were not fulfilled before the failure and that the bridge bank then fulfilled or (2) deposit liabilities that the private acquirer did not assume, and were thus left in the bridge bank receivership to be paid out with the receivership’s remaining assets.<sup>112</sup> The FDIC then seeks to recover as much of these claims as it can through the liquidation of the receivership’s assets. To the extent the receivership’s assets are insufficient to satisfy the FDIC’s claims, the Deposit Insurance Fund realizes a loss.

Of the 27 bids received with respect to SVB Bridge Bank, the FDIC approved the bid of First Citizens. On March 27, First Citizens acquired approximately \$74.8 billion of SVB Bridge Bank’s assets and assumed \$59 billion of its liabilities. The acquired assets consisted of all of SVB’s \$72.1 billion in loan assets and \$2.7 billion in “other assets.”<sup>113</sup> The assumed liabilities consisted of \$56.5 billion of SVB’s deposit liabilities (insured and uninsured) and \$2.5 billion in “other liabilities.” The FDIC also agreed to cover a share of First Citizen’s losses, if any, arising from SVB’s loan assets.<sup>114</sup> The FDIC also provided \$35 billion in purchase money financing in exchange for a five-year note bearing interest at the favorable interest rate of 3.5% per annum.<sup>115</sup> The difference between the \$74.8 billion in assets First Citizens acquired and the \$59 billion in liabilities it assumed represented a discount of approximately \$16.5 billion to the book value of the SVB loan assets that First Citizens acquired, reflecting that the market value of those loan assets was less than the value recorded on SVB’s balance sheet.<sup>116</sup> However, the full extent of the discount, and the additional consideration the FDIC provided in the form of the loss share agreement and low-interest purchase money financing, may have also been attributable to other factors, including the difficulty buyers likely faced in valuing these assets accurately under a short timeframe and in an environment where rising interest rates were continually affecting the value of SVB’s portfolios of Treasuries and loans. It may have also been attributable at least in part to the difficulty of incenting a bank buyer for the entirety of SVB’s loan assets and a substantial portion of its deposit liabilities: The FDIC had to extend the bidding period to find an acceptable bid, and according to some reports preferred a bank buyer over other potentially interested private equity acquirers, narrowing the range of potential acquirers.<sup>117</sup> A bank buyer may have also

---

<sup>111</sup> FDIC, *supra* note 109.

<sup>112</sup> Deposit payouts can also occur during the operation of the bridge bank – that is, after the bank fails and before the private acquisition. In these cases, the deposit withdrawal does not generate a subrogated deposit claim because the withdrawal extinguishes the obligation of the bank to the depositor.

<sup>113</sup> FIRST CITIZENS BANCSHARES, INC., *Form 8-K* (Mar. 27, 2023), <https://www.sec.gov/Archives/edgar/data/798941/000119312523079743/d488575d8k.htm>.

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> Luisa Beltran, *If the Feds fail to find big banks to buy SVB and Signature, the likeliest buyers are the one group they don’t want to sell to YAHOO FINANCE* (Mar. 17, 2023), <https://finance.yahoo.com/news/feds-fail-big-banks-buy-222917693.html>. See also, Letter from Senator Bill Hagerty to Hon. Martin Gruenberg, Chairman, Federal Deposit Insurance Corporation (Mar. 10, 2023), <https://subscriber.politicopro.com/f/?id=0000018e-2b12-dba0-abc-f6f971bf90000>.

required a higher discount as compensation for the potential increases to its capital and liquidity requirements as a result of the acquisition of a substantial loan portfolio. More generally, the bidding process for the bridge banks also raises the question of what efforts the FDIC made to arrange a sale of SVB or Signature to a strong acquirer before invocation of the systemic risk exception, as occurred with First Republic, including whether and why any bids may have been rejected.<sup>118</sup> Contemporaneous reports indicated that approximately \$90 billion in assets, and an approximately equal amount of debt, primarily consisting of loans from the Fed and FHLB, remained in the SVB receivership.<sup>119</sup> As of September 30, 2023, the SVB and SVB Bridge Bank retained a total of approximately \$100 billion in assets and \$116 billion in liabilities. These liabilities included \$59 billion in subrogated deposit claims held by the FDIC.

In placing SVB and Signature in FDIC-administered receivership procedures, the regulators also declined to make use of the Orderly Liquidation Authority (“OLA”). OLA was created as part of Dodd-Frank and designed to provide an alternative resolution procedure for the resolution of systemically important financial institutions, including the holding companies of failed banks. OLA allows the FDIC to obtain “orderly liquidation funding” directly from the Treasury to assist in an orderly if protracted liquidation. This funding is not available in a normal resolution process, and was particularly important given that the Fed had, before SVB and Signature, long taken the view it would not lend to banks in any receivership or insolvency procedure.

In the case of First Republic, the unsustainable rate of deposit withdrawals led the California state banking regulator (the CDPFI) to seize First Republic on May 1, 2023, on the grounds that its business was being operated in an “unsound manner” and appoint the FDIC as receiver.<sup>120</sup> Unlike in the cases of SVB and Signature, the banking agencies had arranged for a private acquirer to assume First Republic’s insured and uninsured deposit liabilities *before* they placed the bank in receivership. Thus, simultaneously with the announcement that they had seized First Republic, the FDIC and CDPFI announced that JPMorgan had agreed to pay \$10.6 billion to acquire a substantial majority of First Republic’s assets, equal to \$185 billion, and assume all of its deposits, insured and uninsured, and certain other liabilities, equal to \$167.8 billion. As in the case of the SVB acquisitions, the FDIC also agreed to share a portion of JPMorgan’s future losses, if any, on First Republic’s loans. Because JPMorgan agreed to acquire all of First Republic’s deposits, a systemic risk determination was not necessary with respect to First Republic.<sup>121</sup> As in the case of SVB and Signature, the unacquired assets and liabilities remained in the FDIC-administered receivership. As of September 30, 2023, the First Republic receivership had negative equity of \$17 billion.

---

<sup>118</sup> Randal Quarles, *What Congress Should Ask Regulators in SVB’s Aftermath* WALL STREET JOURNAL (Mar. 27, 2023), <https://www.wsj.com/articles/queries-for-congress-silicon-valley-bank-cleanup-fdic-fed-fiscal-policy-interest-rate-risk-2018-8f48edc7>.

<sup>119</sup> Gruenberg, *supra* note 16 at 17.

<sup>120</sup> CDFPI, *In the Matter of First Republic Bank, Order Taking Possession of Property and Business* (May 1, 2023), <https://dfpi.ca.gov/wp-content/uploads/sites/337/2023/04/First-Republic-Order-Taking-Possession-under-FC-592-FINAL.pdf>

<sup>121</sup> SIDLEY, *Distressed Bank Developments: First Republic Receivership; Government Reports on SVB and Signature Bank; Next Steps in Distressed Bank Resolutions* (May 1, 2023), <https://www.sidley.com/en/insights/newsupdates/2023/5/distressed-bank-developments-first-republic-receivership>.

As of March 2024, the FDIC estimates that the cost to the FDIC's Deposit Insurance Fund of the resolution of SVB and Signature will total \$21.8 billion and \$1.8 billion, respectively.<sup>122</sup> The FDIC estimated that \$15.7 billion and \$0.6 billion, respectively, of the total losses from SVB and Signature were attributable to the protection of uninsured depositors.<sup>123</sup> It estimates that the cost to the Deposit Insurance Fund of the JPMorgan purchase of First Republic, under which uninsured depositors retained the full value of their claims, will be about \$16.7 billion.<sup>124</sup> These loss estimates may be adjusted up or down as the FDIC proceeds with the process of asset liquidation.

This amounts to \$40.3 billion in total costs being borne by the Deposit Insurance Fund, which as of December 31, 2023 had assets of \$119.3 billion.<sup>125</sup> The portion of these losses attributable to the protection of uninsured depositors reflects losses the FDIC will incur as a result of paying out uninsured depositors whose claims were not assumed by the private acquirers and stepping into the shoes of those depositors (via subrogation) as creditors of the failed banks' receiverships and also reflects a portion of the additional consideration that the FDIC had to extend to the private acquirers, for example the loss share agreements and favorable purchase money financing, to cause them to assume the uninsured deposit liabilities. According to the FDIC's estimates, the assets of these receiverships do not have sufficient market value in liquidation to pay out the full amount of the FDIC's subrogated claims. Indeed, the balance sheets for each of the bridge banks and receiverships confirms that the FDIC possesses substantial subrogated deposit claims against the bridge banks and receiverships and that the assets of the receiverships and bridge banks are less than the outstanding claims against them.

The Federal Deposit Insurance Act requires that any loss to the Deposit Insurance Fund arising from the use of the systemic risk exception must be recovered from one or more special assessments on insured banks.<sup>126</sup> The FDIC has finalized a special assessment with respect to SVB and Signature that is to be apportioned among insured banks that are part of banking organizations with more than \$5 billion in uninsured deposits based on the relative values of each bank's uninsured deposits as of December 31, 2022.<sup>127</sup> The total assessment is \$16.3 billion.<sup>128</sup> Because the FDIC did not invoke the systemic risk exception for First Republic, no special assessment will be made with respect to First Republic. However, the costs arising from the First Republic resolution reduced the size of the Deposit Insurance Fund, and, unless the FDIC were to implement higher deposit insurance premiums, it will take longer for the fund to be replenished over time through regular deposit insurance premiums and interest on Deposit Insurance Fund investments.

---

<sup>122</sup> FDIC, *BankFind Suite: Bank Failures & Assistance Data* <https://banks.data.fdic.gov/bankfind-suite/>, (last accessed Feb. 6, 2023).

<sup>123</sup> FDIC, *Special Assessment Pursuant to Systemic Risk Determination* 88 FED. REG. 228 (Nov. 29, 2023), <https://www.fdic.gov/news/board-matters/2023/2023-11-16-notational-fr-b.pdf>.

<sup>124</sup> FDIC, *JPMorgan Chase Bank, National Association, Columbus, Ohio, Assumes All the Deposits of First Republic Bank, San Francisco, California* (May 1, 2023), <https://www.fdic.gov/news/press-releases/2023/pr23034.html>.

<sup>125</sup> FDIC, *Insured Institution Performance* 31 (Sept. 2023), <https://www.fdic.gov/analysis/quarterly-banking-profile/qbp/2023sep/qbp.pdf#page=1>.

<sup>126</sup> FEDERAL DEPOSIT INSURANCE ACT, § 13(c)(4)(G); FDIC, *Memo from Patrick Mitchell, Director, Division of Insurance and Research to the Board of Directors* (May 11, 2023), <https://www.fdic.gov/news/board-matters/2023/2023-05-11-notice-dis-a-mem.pdf>.

<sup>127</sup> FDIC, *Special Assessment Pursuant to Systemic Risk Determination* 88 FED. REG. 22228 (Nov. 29, 2023), <https://www.fdic.gov/news/board-matters/2023/2023-11-16-notational-fr-b.pdf>.

<sup>128</sup> *Id.*

Following these events, no additional U.S. banks have entered receivership or insolvency apart from two small banks which had no apparent connection to the failure of SVB.<sup>129</sup> Thus, although some combination of the Fed's discount window lending, the resolution of these banks including the guarantee of uninsured deposits pursuant to the systemic risk exception, and the availability of BTFP, ultimately stemmed the contagion, these measures will have come at an FDIC-estimated cost of approximately \$40.3 billion to insured banks, which may pass on these costs to their customers.

---

<sup>129</sup> FDIC, *Failed Bank Information for Heartland Tri-State Bank, Elkhart, KS* (Jul 28, 2023), <https://www.fdic.gov/resources/resolutions/bank-failures/failed-bank-list/heartlandtristate.html>; FDIC, *Failed Bank Information for Citizens Bank, Sac City, IA* (Nov. 3, 2023), <https://www.fdic.gov/resources/resolutions/bank-failures/failed-bank-list/citizensbank.html>.

## **II. Recommendations for Reforming Lender of Last Resort and the Deposit Insurance and Bank Liquidity Frameworks**

The fundamental purpose of a lender of last resort is to prevent contagion. This is the reason the Fed was created in 1913. In this capacity, the Fed failed to prevent the crisis by lending to SVB, a solvent bank by applicable accounting standards. This failure resulted in a contagion that helped bring down two other banks and set off fear of an even wider bank run. The failure of the Fed to lend to SVB has raised major questions about its operational ability to be an effective lender of last resort to a bank with extremely high uninsured concentrated deposits in the midst of a speedy deposit run. It also raised significant issues about its discount window collateral policies. There is also the question of whether the FHLB system should play any role as lender of last resort.

Further, in its subsequent response to the SVB failure, the Fed made two major changes in its approach to its use of its lender of last resort power: (1) lending to FDIC bridge banks,<sup>130</sup> and (2) using Section 13(3) (the emergency lending statute) rather than Section 10B (the discount window) to loan to the remaining solvent banking sector.

The Fed and FDIC have issued reports on the failures of SVB and Signature, respectively, but they focus only on the banks' supervisory histories and do not evaluate the performance of the Fed and FHLB as lenders of last resort. It is crucial that potential improvements to the lender of last resort function be considered before another crisis arises. The actions of federal regulators during the 2020 COVID crisis provide further lessons that should inform improvements to the lender of last resort function. Below we present ten recommendations to that end. Subpart A presents recommendations arising out of the SVB crisis. Subpart B presents recommendations arising out of the COVID crisis.

### **A. Lessons from the SVB Crisis**

#### **1. The Fed must be prepared to lend to banks that are still solvent with adequate collateral.**

The Fed should be prepared to lend to a solvent bank with adequate collateral. In determining what amount of collateral is adequate for this purpose, the Fed must be prepared to exercise its discretion under the discount window statute to balance the risks of accepting less collateral against the risks of allowing contagion to spread in the banking system. In the case of both SVB in 2023 and Lehman Brothers in 2008, the Fed arguably did not do so, which contributed to the failures of both banks and ensuing contagion in the U.S. banking system.<sup>131</sup>

---

<sup>130</sup> When the Fed lent extensively through the discount window to the troubled Continental Illinois Bank from May 1984 through September 1985, it did so to avert Continental's insolvency. Continental was not in receivership proceedings when it received these loans. FEDERAL RESERVE HISTORY, *Continental Illinois: A Bank That Was Too Big to Fail* (May 15, 2023), <https://www.federalreservehistory.org/essays/continental-illinois>.

<sup>131</sup> Hal S. Scott, *An Essay on the Fed and the U.S. Treasury: Lender of Last Resort and Fiscal Policy*, HARVARD JOURNAL OF LAW AND PUBLIC POLICY PER CURIAM 1-2 (2021), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3607192](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3607192); Andrew Loo, CORPORATE FINANCE INSTITUTE, *Is SVB the Next Lehman Moment?* (Mar. 14, 2023), <https://corporatefinanceinstitute.com/resources/capital-markets/is-svb->

In this section we first review the evidence presented in Part I that SVB possessed securities and loan assets that may well have been sufficient to support a discount window loan from the Fed, under prevailing Fed collateral policies, that was larger than the amount of outstanding deposit withdrawal requests. We then argue that even if SVB had insufficient collateral to support a loan sufficient to stem the run, the Fed had the legal authority to vary its collateral policies to accommodate such a loan. We then conclude that the Fed can and should exercise this discretion as necessary in order to prevent and respond to future crises.

The Fed's current policy is to value all securities pledged as collateral for discount window lending at fair market value, including U.S. Treasury securities and fully guaranteed U.S. government agency securities, subject to varying discounts ("haircuts") depending on the specific category of asset pledged.<sup>132</sup>

As discussed in Part I, as of December 31, 2022, SVB held HTM securities with a market value of \$76.2 billion and a portfolio of loan assets valued at \$73.6 billion. It is unclear what the fair market value of those securities or loans was as of March 2023, though the terms of the First Citizen purchase suggest that the loan assets still had a fair market value approximately equal to 78% of their fair market value. Moreover, as we outlined in Part I, even allowing for a significant decline in market value between December and March, and substantial haircuts to both portfolios, SVB may still have possessed assets sufficient to collateralize a loan in excess of the value of outstanding deposit withdrawal requests. Fed officials have nonetheless indicated that as of March 10, they did not believe that SVB had enough collateral to stem the run via discount window loans.<sup>133</sup> But it remains unclear (1) the size of the discount window loan that the Fed thought SVB needed in order to stem the run, (2) whether the difference between the par value and the market value of SVB's HTM portfolio or the effect of any applicable haircuts was dispositive of the Fed's assessment, and (3) whether the Fed would have declined to lend further to SVB in any event due to its proximity to insolvency.

What is clear is that any lack of collateral under prevailing Fed policies was not a legal impediment to further discount window loans to SVB. The discount window statute (i.e., Section 10B of the Federal Reserve Act) provides that the Fed may make advances to member banks months provided they are "secured to the satisfaction of [the Fed]."<sup>134</sup> The Fed thus has the legal discretion to determine what assets, if any, it requires as collateral, and how those assets are valued, which should permit the Fed to adopt a policy that values government securities collateral at par rather than fair market value. Such a policy would entail a risk of loss to the Fed of up to the difference between the par and fair market value of the collateral. It could also incentivize banks to allocate a greater portion of their assets to government securities rather than loans. Such risks, however, must be weighed against the risk of permitting contagion to spread through the banking system.

---

[the-next-lehman-moment/](https://data.nber.org/data-appendix/w22410/The%20Fed%20and%20Lehman%20Brothers.pdf); Laurence Ball, *The Fed and Lehman Brothers* (July 2016), <https://data.nber.org/data-appendix/w22410/The%20Fed%20and%20Lehman%20Brothers.pdf>.

<sup>132</sup> FEDERAL RESERVE, *supra* note 59.

<sup>133</sup> Barr, *supra* note 64; Ostrander, *supra* note 99.

<sup>134</sup> FEDERAL RESERVE ACT § 10B(a).

Assuming the problem under prevailing Fed valuation policies was the lack of adequate collateral if the HTM portfolio was marked to market, there are strong arguments that the Fed should have used, and in the future should use, its statutory authority under the discount window to value these securities at par. And this would be true even if bank regulators decided to mark down HTMs in some way for purposes of capital regulation (an issue not addressed in this article). Although valuing such collateral at par exposes the Fed to a risk of loss equal to the difference between the collateral's par value and market value, the risk of loss will generally be very small in comparison to the benefit of preventing contagion, which is the primary function of discount window lending. Moreover, it is possible that if SVB had been able to receive additional discount window loans, the run would have been stemmed, SVB would have avoided insolvency, and the Fed would have incurred no losses. In the case of the run on Continental Illinois in 1984, discount window lending was one of the sources of liquidity that allowed the bank to stem the run and avoid failure.<sup>135</sup>

The Fed has shown that it is willing to adjust its collateral policies in response to a crisis, but chose to do so *after* SVB failed. More specifically, later in March 2023, after SVB failed, the Fed reduced the haircuts it applies to government securities collateral for purposes of discount window lending.<sup>136</sup> The Fed also had the authority to make similar adjustments both to the haircuts for government securities and loan assets, in the lead-up to the failure of SVB, which could have increased SVB's capacity to borrow from the discount window to stem the run, but did not do so. Further, the Fed is evidently willing in principle to accept securities as collateral at par value, as evidenced by the BTFP rules, which provide that these securities are valued at par (albeit with Section 13(3) Treasury credit protection). In cases where the Fed accepts collateral at par value, the market value of the collateral should still be publicly disclosed. More generally, the Fed already possesses a massive portfolio of U.S. government securities, and the value of SVB's HTM portfolio would have constituted only a small fraction of that portfolio's value. As of March 8, 2023, the Fed's portfolio of Treasury securities was worth approximately \$5.3 trillion.<sup>137</sup> SVB's HTM portfolio would have constituted approximately 1.9% of the total if added to the Fed's portfolio.

2. *The Fed should publicly voice its intention to support liquidity to solvent banks in a crisis.*

At the earliest sign of a potential contagious run, the Fed should clearly and publicly state that it is ready and willing to act as lender of last resort to support the liquidity of solvent banks. An example of such a signal is the public statement of then-European Central Bank President Mario Draghi in 2012 that the ECB would do "whatever it takes to preserve the euro" in the midst of the European debt crisis.<sup>138</sup> The Fed failed to make such a statement when the run on SVB began. Had the Fed made a strong statement on March 9 that it was prepared to extend the necessary liquidity

---

<sup>135</sup> FEDERAL RESERVE HISTORY, *supra* note 130.

<sup>136</sup> FEDERAL RESERVE, Historical Collateral Margins Tables [https://www.frbdiscountwindow.org/GeneralPages/historical\\_margins/margin\\_tables](https://www.frbdiscountwindow.org/GeneralPages/historical_margins/margin_tables) (last visited Aug. 9, 2023).

<sup>137</sup> FEDERAL RESERVE, *Federal Reserve Statistical Release, Factors Affecting Reserve Balances* (Mar. 9, 2023), <https://www.federalreserve.gov/releases/h41/20230309/>.

<sup>138</sup> EURONEWS, *ECB's Draghi to the Euro's Rescue?* (July 26, 2012), <https://www.youtube.com/watch?v=Pq1V0aPEO3c> (retrieved June 21, 2023).

to SVB, the additional \$100 billion in withdrawals that SVB experienced on March 10 may not have occurred and the contagion may have thus been limited in the rest of the banking system.

The Fed has during prior crises made statements that – though not as direct as that of President Draghi’s – could signal a general intention to support liquidity. In 2008, then-Chair of the Fed Ben Bernanke discussed publicly the “steps the Fed had taken in response to the developing crisis,” including trying to “make discount window borrowing through the regular primary credit program more attractive.”<sup>139</sup> During the March 2020 COVID crisis, Fed Chair Powell stated that the Fed would “act as appropriate to support the economy.”<sup>140</sup> The Fed also issued a statement to the effect that it “encourage[d] depository institutions to use the discount window to meet demands for credit from households.”<sup>141</sup> Recent empirical research has suggested that public statements from the Fed about banking stability have the potential to reassure depositors and prevent bank runs.<sup>142</sup> In future crises, the Fed should make more direct statements that refer specifically to its intentions to support liquidity with necessary discount window lending.

### 3. Operational improvements to lender of last resort are necessary.

The events of March 2023 show that bank runs can occur faster than they did in the past. SVB experienced a total outflow of 25% of deposits in one day.<sup>143</sup> A further outflow of 62% of SVB’s deposits was anticipated to occur on the following day.<sup>144</sup> Signature Bank experienced an outflow of 20% of its deposits in one day, with a further outflow of 9% expected the next day.<sup>145</sup> By comparison, when Continental Illinois experienced a run in 1984, it took seven business days (10 days in total) for 30% of deposits to be withdrawn. In 2008, it took 12 business days (16 days in total) for 10.1% of Washington Mutual’s to be withdrawn. Similarly, in 2008, 4.4% of Wachovia’s deposits were withdrawn over 15 business days (19 days in total).<sup>146</sup>

The events of March 9, when SVB unsuccessfully sought to obtain a \$20 billion liquidity loan from both FHLB and Fed, seem to indicate that the FHLB and Fed were unprepared operationally for the unprecedented speed of a bank run in 2023. In July 2023 the Fed issued a statement encouraging banks “to incorporate the discount window as part of their contingency funding arrangements” and to ensure that they have the operational readiness to draw on discount window

---

<sup>139</sup> Ben S. Bernanke, Chairman, FEDERAL RESERVE, *Liquidity Provision by the Federal Reserve* (May 13, 2008), <https://www.federalreserve.gov/newsevents/speech/bernanke20080513.htm>.

<sup>140</sup> Howard Schneider, *Powell Says Fed Ready to Act as Coronavirus Poses “Evolving” Economic Risks* REUTERS (Feb. 28, 2020), <https://www.reuters.com/article/us-usa-fed-powell/powell-says-fed-ready-to-act-as-coronavirus-poses-evolving-economic-risks-idUSKCN20M30B>.

<sup>141</sup> FEDERAL RESERVE, FDIC, OCC, *Statement on Use of Discount Window* (Mar. 16, 2023), <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20200316a1.pdf>.

<sup>142</sup> See Damiano Sandri et al., *Keep Calm and Bank on: Panic-Driven Bank Runs and the Role of Public Communication* NBER Working Paper No. w31644 (2023), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4560571](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4560571).

<sup>143</sup> Rose, *supra* note 29.

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> *Id.*

funding on short notice.<sup>147</sup> While this is a welcome statement, increased readiness on the part of banks must be matched by increased operational readiness on the part of the Fed.

Acting Comptroller of the Currency Michael Hsu recently described how banks could be required to conduct regular “test draws” from the discount window to better ensure operational preparedness to access the discount window during a crisis.<sup>148</sup> Such a requirement could form a part of the effort to improve the operational capabilities of the lender of last resort function.

- i) *The operating hours for collateral transfer systems must be extended as long as necessary at the first sign of a crisis.*

Fedwire hours of operation prevented SVB from transferring the necessary collateral to obtain a liquidity loan from the Fed on March 9. This perpetuated SVB’s illiquidity while deposit withdrawal requests continued to mount. The next day, the Fed kept Fedwire open until 11:30pmET/8:30pmPT to facilitate a collateral transfer by Signature,<sup>149</sup> indicating that the Fed quickly realized that confining Fedwire to normal hours of operation was perpetuating the contagion. At the first sign of a crisis, the operating hours of Fedwire and any other systems necessary to transfer collateral in support of liquidity lending should be extended as long as necessary.

- ii) *The division of responsibility and communication procedures between the Fed’s Board of Governors and regional Fed banks must be improved.*

The run on SVB also showed that there may be critical deficiencies in the communication protocols and unclear division of responsibility between the regional Fed banks and the Fed board and staff in the event of a liquidity crisis.

Neither the Fed’s Board of Governors nor the Treasury were aware that a bank run on SVB was in progress until 3pm ET/12pm PT on March 9.<sup>150</sup> The Chair of the FDIC was not aware until the evening of March 9.<sup>151</sup> At this point, the crisis had been underway for nearly 24 hours since it started the evening of March 8. It is unclear how much earlier the San Francisco Fed became aware of the potential for a run at SVB and whether there was any delay in informing the Board of Governors. This should be a main question addressed in the Fed’s needed report on its performance as a lender of last resort during the crisis. The fact that the Fed’s top decisionmakers did not become aware immediately of the ongoing run likely impaired the Fed’s ability to respond

---

<sup>147</sup> FEDERAL RESERVE, FDIC, NATIONAL CREDIT UNION ADMINISTRATION, OCC, *Addendum to the Interagency Policy Statement on Funding and Liquidity Risk Management: Importance of Contingency Funding Plans* (Jul. 28, 2023), <https://www.federalreserve.gov/newsevents/pressreleases/bcreg20230728a.htm>.

<sup>148</sup> Acting Comptroller of the Currency Michael J. Hsu, *Building Better Brakes for a Faster Financial World* (Jan. 18, 2024), <https://www.occ.gov/news-issuances/speeches/2024/pub-speech-2024-4.pdf>.

<sup>149</sup> NEW YORK STATE DEPARTMENT OF FINANCIAL SERVICES, *Internal Review of the Supervision and Closure of Signature Bank* 34 (2023), [https://www.dfs.ny.gov/system/files/documents/2023/04/nydfs\\_internal\\_review\\_rpt\\_signature\\_bank\\_20230428.pdf](https://www.dfs.ny.gov/system/files/documents/2023/04/nydfs_internal_review_rpt_signature_bank_20230428.pdf),

<sup>150</sup> Transcript of March 29, 2023, House Financial Services Hearing on Bank Failures 20 (on file with authors) (Patrick McHenry: “When did you become aware of the deposit flows on Thursday? . . . Michael Barr: “I believe it was around noon in California. And for me around 3:00 you know, on the East Coast.”).

<sup>151</sup> *Id.* at 22.

effectively. When the Fed’s supervisory chiefs first became aware of the run, it may simply have been too late for the decisionmakers to coordinate and make the necessary determinations.

Before the next liquidity crisis, the Fed must create a comprehensive operational plan with clear assignments of responsibilities and protocols for immediate notification of top decisionmakers. This plan should include a “war room” in Washington, from which the Fed’s response is coordinated, that is convened at the first sign of a potential bank run.

*iii) Policymakers should explore the possibility of instant collateral transfer capabilities.*

As explained in Part I, one of the reasons for the delay in extending liquidity loans to SVB was that SVB had to transfer additional collateral to support the full amount of the discount window loan it required. Even assuming other operational shortcomings are addressed, any transfer of collateral via the current Fedwire system in a future crisis will take time, which risks delaying the proper response to a run.

The act of pledging collateral in advance (i.e., prepositioning) to support potential discount window borrowing has been presented as a solution to the operational delays that doomed SVB: If collateral has already been pledged before a need for emergency liquidity arises, there is no need to complete the potentially time-consuming steps of pledging collateral in a crisis scenario. However, prepositioning as an operational improvement is obviated to the extent that an instant transfer capability can be incorporated into the lender of last resort process, which should be achievable with modern technology. Such a solution, whereby collateral is pledged by the push of a button, could potentially avoid the delays seen in the SVB crisis without requiring a pre-commitment of collateral. Allowing banks to keep these assets unencumbered unless and until a discount window loan is required also gives banks more flexibility in managing how they satisfy their liquidity requirements. The possibility of substantial improvements in transfer capabilities was first put forth by Eddie George in 1996 when technology was more limited.<sup>152</sup>

*4. Liquidity lending to banks should occur through the discount window (Section 10B) and not under the emergency lending statute (Section 13(3)).*

As also explained in Part I, in an effort to stem the contagion from the failure of SVB, the Fed created a new bank lending facility - the BTFP. The Fed created this facility under Section 13(3) of the Federal Reserve Act (the emergency lending statute) notwithstanding the existing availability of the discount window, which is governed by Section 10B of the Federal Reserve Act. As already noted, this was the first time that Section 13(3) has been used to create a facility that is limited to banks.<sup>153</sup> Moreover, the use of Section 13(3) comes with more restrictions than those of Section 10B. Most importantly, it requires the approval of the Secretary of the Treasury. But

---

<sup>152</sup> Edward George, *Risk Reduction in Payment and Settlement Systems*, BANK OF ENGLAND QUARTERLY BULLETIN (1996), <https://www.bankofengland.co.uk/-/media/boe/files/quarterly-bulletin/1996/quarterly-bulletin-november-1996.pdf>.

<sup>153</sup> The Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (“AMLF”) was generally limited to banks and bank holding companies, but bank holding companies are not banks, and the AMLF was also available to broker-dealer subsidiaries of bank holding companies. FEDERAL RESERVE, *Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility*, <https://www.federalreserve.gov/regreform/reform-amlf.htm> (last updated Mar. 20, 2020).

Treasury approval should not be a prerequisite for necessary liquidity loans to banks. In such cases, the Fed should act independently, as provided for by Section 10B, to avoid political interference in the lending decision.

There have been several possible rationales advanced for the Fed’s decision to use Section 13(3) in the SVB crisis, none of which are convincing. First, Section 10B restricts loan terms to 120 days and Fed officials have suggested that establishing the new facility under Section 13(3) was necessary to make loans available for longer terms, including the one year permitted by the BTFP.<sup>154</sup> However, it is questionable why a loan issued for the purpose of stemming a bank run would need to have any term as long as one year. Even assuming such a term is necessary, the Fed could simply provide for automatic rollovers for as many 120-day intervals as necessary to avoid this restriction. But a better solution would be for Congress itself to extend the maximum permissible discount window loan term to a year to avoid any issue of this kind.

Second, Fed officials have suggested that they wanted the ability to value collateral at par and only Section 13(3) allows this.<sup>155</sup> But in fact, Section 13(3) has stricter collateral requirements than Section 10B: Section 13(3) requires that loans be secured by collateral “sufficient to protect taxpayers from loss.” By contrast, Section 10B requires only that loans be secured “to the satisfaction” of the Fed. Section 10B thus allows the Fed discretion to accept a wide range of collateral, and arguably even no collateral. It certainly permits the Fed to value HTM collateral at par.

Third, it is often asserted that banks associate borrowing from the discount window with stigma, and the desire to create a facility that superficially escapes this stigma may have prompted the creation of the BTFP. But Section 13(3)’s more stringent disclosure rules, which require disclosure of borrowings to Congress within seven days (as compared with two years for the discount window),<sup>156</sup> would if anything increase the prospect of stigma. Furthermore, the notion that banks are categorically opposed to discount window borrowing because of stigma appears to be an overstatement. Discount window borrowings have under normal circumstances consistently been around \$2-4 billion over the past years. 44.7% of banks with more than \$100 billion in assets borrowed at least once from the discount window during the Q42020-Q32021 period. Borrowings went from \$4.3 billion at the beginning of March 2023 to \$152 billion as of March 15, 2023, indicating substantial borrowings in response to the crisis. Stigma is a concern for a bank when it may signal it may be in trouble as opposed to when it actually is. At that point borrowing from the discount window is existential. SVB, Signature, and First Republic appear not to have hesitated to seek discount window loans. The extent of large BTFP borrowings immediately following the establishment of that program, when there was a general concern with contagion, also suggests the problem of stigma is minimal when many banks are borrowing—there is safety in numbers from stigma.

To the extent that stigma is an impediment to needed discount window borrowing, it is doubtful that mandating regulator discount window test draws would mitigate it, since the market would presumably distinguish borrowings that are routine test draws and those that are not. A recent Fed

---

<sup>154</sup> Ostrander, *supra* note 99.

<sup>155</sup> *Id.*

<sup>156</sup> FEDERAL RESERVE ACT § 13(3)(C)(i).

study attempted to test whether mandatory randomized test draws would address discount window stigma and found that it would not be effective at curing existing stigma.<sup>157</sup> Furthermore, seeking to address stigma concerns by eliminating disclosure requirements for emergency lending would be both ineffective and inadvisable. First, even if the lending is anonymized, the identities of borrowers could potentially be inferred or narrowed down from the weekly public reporting of the Federal Reserve banks of all discount window loans—within a Federal Reserve district, there may only be a limited number of banks that would seek a loan of a significant size. Second, there will always be the possibility of inadvertent or unauthorized disclosures. And moreover, the idea of hiding the identity of borrowers from the public potentially threatens the principle of accountability.

To mitigate any stigma that is associated with discount window borrowing, the Fed should instead consider setting the discount window rate using an auction mechanism. The Fed used such an auction mechanism when it established the Term Auction Facility (TAF) in December 2007.<sup>158</sup> Such a mechanism allows banks to present borrowings as economically attractive rather than a sign of weakness, while at the same time minimizing the arbitrage opportunity presented by the low rate under BTFP, discussed below.

The interest rate terms of the BTFP have also incentivized banks' use of the BTFP for reasons unrelated to financial distress and potentially threaten the status of the Fed funds rate as the primary lever for monetary policy.

As illustrated in Figure 3 below, in November 2023, the rate banks paid to borrow under the BTFP declined well below the discount window rate and the rate banks receive on Fed reserve balances. This created an arbitrage opportunity for banks whereby a bank could borrow under the BTFP, hold the proceeds in a Fed account and receive a higher interest rate on the reserve balance than it pays on the BTFP loan.<sup>159</sup> Figure 4 shows a noticeable increase in BTFP volumes that coincides with the beginning of the divergence in rates noted above, indicating that banks responded to this arbitrage opportunity. Figure 4 also shows how total BTFP loans outstanding began to increase well above the Fed funds volume. While the size of this difference was not nearly enough to cause a problem for monetary policy, the potential to do so existed.

The reason for the divergence is that, whereas the Board of the Fed intentionally maintains the interest rate banks pay for discount window loans above the prevailing rate they pay to borrow reserve balances from other banks (the Fed funds rate),<sup>160</sup> the Fed did not apply the same policy to

---

<sup>157</sup> Olivier Armandier & Charles Holt, Can Discount Window Stigma Be Cured? An Experimental Investigation, FEDERAL RESERVE BANK OF NEW YORK Staff Report No. 1103 (2024), [https://www.newyorkfed.org/medialibrary/media/research/staff\\_reports/sr1103.pdf?sc\\_lang=en](https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1103.pdf?sc_lang=en).

<sup>158</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, Regulatory Reform, Term Auction Facility (TAF), <https://www.federalreserve.gov/regreform/reform-taf.htm>.

<sup>159</sup> David Benoit & Eric Wallerstein, *The Fed Launched a Bank Rescue Program Last Year. Now, Banks Are Gaming It*. WALL STREET JOURNAL (Jan. 10, 2024), <https://www.wsj.com/finance/banking/the-fed-launched-a-bank-rescue-program-last-year-now-banks-are-gaming-it-43e9cee3?mod=djemCentralBanksPro&tpl=cb>.

<sup>160</sup> THE FEDERAL RESERVE, *Discount Window, The Primary & Secondary Lending Programs* <https://www.frbdiscountwindow.org/Pages/General-Information/Primary-and-Secondary-Lending-Programs> (last accessed Feb. 5, 2024).

the interest rate on BTFP advances, which was instead equal to the one-year overnight index swap rate plus 10 basis points. As a result, the BTFP rate could be lower than the Fed funds rate. The Fed could have alternatively set a fixed rate for BTFP loans or established an auction procedure whereby banks bid for the right to borrow under the BTFP at various rates. As noted above, in January 2024, the Fed did establish a floor on the BTFP rate once the extent of the arbitrage opportunity resulting from the floating rate became apparent. As shown in Figure 4, BTFP usage levelled off at that point. Since the expiry of the program in March 2024, total usage has been declining as no new loans have been issued and outstanding loans roll off.

**Figure 3 – Rates: BTFP; Discount Window; Reserve Balances; Fed Funds**

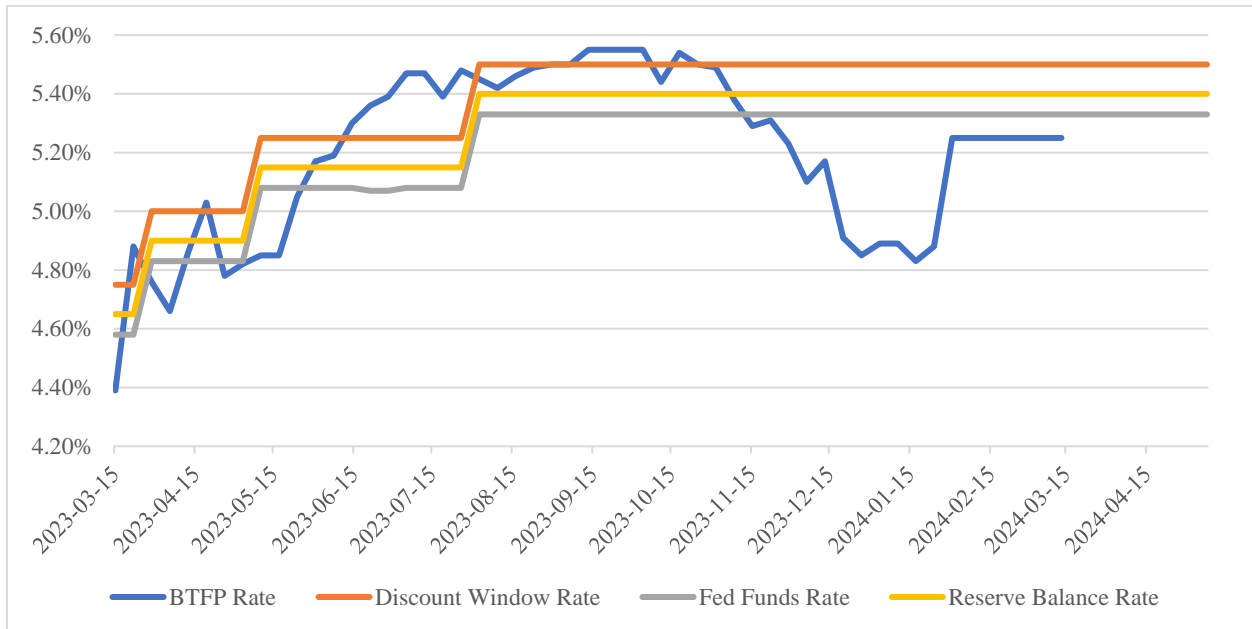
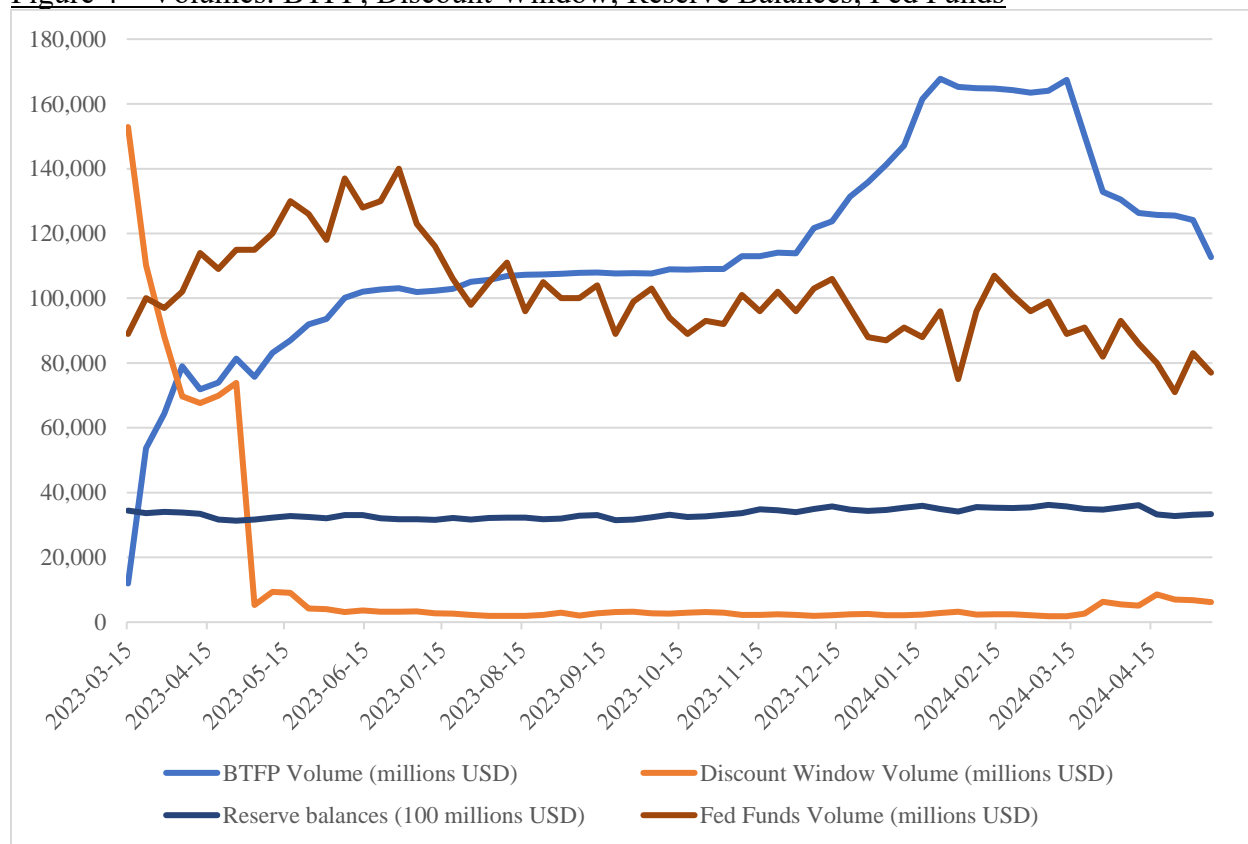


Figure 4 – Volumes: BTFP; Discount Window; Reserve Balances; Fed Funds



More generally, to the extent banks continue to look primarily to a lending facility that is ultimately dependent on Treasury approval, it may threaten the independence of the Fed as lender of last resort.

The real reason for the Fed’s establishment of the new facility under Section 13(3) may be that due to political pressure, stemming more recently from the Fed’s role as lender of last resort during the global financial crisis (2007-2008) and in 2020 during COVID, the Fed’s role and independence as lender of last resort have come under attack. These attacks have come from across the political spectrum. For example, in 2008 Republican legislators harshly criticized the Fed for extending \$85 billion in credit to avert the bankruptcy of failing insurance company AIG.<sup>161</sup> Democratic legislators also voiced criticism of the Fed and Treasury’s support for the financial sectors in 2008.<sup>162</sup> In 2020, the Fed faced criticism from Democrat and Republic lawmakers for various design features of its Main Street Lending Program, which was intended to supply liquidity to the corporate sector, including that the terms were too onerous to provide any real benefit to

<sup>161</sup> Ted Barrett et al., *AIG Bailout Upsets Republican Lawmakers* CNN (Sept. 17, 2008), <https://www.cnn.com/2008/POLITICS/09/17/aig.bailout.congress/index.html>

<sup>162</sup> David M. Herszenhorn, *A Curious Coalition Opposed Bailout Bill* NEW YORK TIMES (Oct. 2, 2008), <https://www.nytimes.com/2008/10/03/business/03naysayers.html>.

businesses,<sup>163</sup> and that the Fed was favoring particular industries by making changes to the program's terms.<sup>164</sup>

As a result, the Fed may be seeking to pull back from acting as lender of last resort absent political cover from the Treasury. However, the Fed needs to resist such pressure and maintain its independence as a liquidity provider to banks, given its clear mandate under Section 10B to act independently.

5. *The policy of the Fed to lend to bridge banks that are less than “super solvent” should be evaluated.*

The traditional policy of the Fed has been that it does not lend to a bank that is in a receivership or insolvency procedure. This principle can be traced back to Bagehot's assertion that lending to an insolvent bank would increase moral hazard.<sup>165</sup> The Fed historically applied this principle even to bridge banks that, while functionally solvent, are in a receivership proceeding as a legal matter.<sup>166</sup>

In 2023 the Fed departed from this policy when it lent to the bridge banks for both SVB and Signature. In principle, this reversal is a good one: even though a bridge bank is in an insolvency procedure, it is often functionally super solvent, since the bridge bank typically assumes only a subset of the failed bank's liabilities (insured deposits) and acquires all of the failed bank's assets. But in these two real-world cases, the bridge banks assumed all deposits (i.e., those that were insured originally and those that became insured due to the application of the systemic risk exception). Thus, although the bridge banks were likely solvent if one valued the HTM assets at par they were barely solvent if the HTM assets were valued at market value.

The sales of substantial portions of the bridge banks' assets and liabilities to private acquirers did not include the Fed's loans to the bridge banks. As a result, the Fed loans remained in the bridge bank receiverships until they were discharged using the remaining assets of the bridge banks, which consist primarily of the HTMs in which the Fed and FHLB each had a security interest equal to the value of their outstanding loans. According to the Fed, all discount window and BTFP loans to the SVB and Signature Bridge Banks were fully repaid as of November 2023, though the precise transactions by which repayment was affected are not clear.<sup>167</sup>

---

<sup>163</sup> Jim Saksa, *Congressional Panel Slams Fed's Main Street Lending Program* ROLL CALL (Aug. 7, 2020) <https://rollcall.com/2020/08/07/congressional-panel-slams-feds-main-street-lending-program/>.

<sup>164</sup> Jonnelle Marte & Michelle Price, *U.S. Fed's Main Street Lending Facility Likely to Start with a Whimper* REUTERS (Jun. 8, 2020), <https://www.reuters.com/article/us-usa-fed-mainstreet-idINKBN23F16E>.

<sup>165</sup> Paul Tucker, BANK FOR INTERNATIONAL SETTLEMENTS, *The Lender of Last Resort and Modern Central Banking: Principles and Reconstruction* (2014) [https://www.bis.org/publ/bppdf/bispap79b\\_rh.pdf](https://www.bis.org/publ/bppdf/bispap79b_rh.pdf).

<sup>166</sup> MERCATUS CENTER, MERCATUS ORIGINAL PODCASTS, *Bill Nelson on the Fed's Discount Window Lending, the Overnight Reverse Repo Facility, and the Shifting Size of the Fed's Balance Sheet* (Apr. 10, 2023), <https://www.mercatus.org/macro-musings/bill-nelson-feds-discount-window-lending-overnight-reverse-repo-facility-and-shifting>.

<sup>167</sup> BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, *Federal Reserve Balance Sheet Developments, Additional Information on Other Credit Extensions* (last updated Jan. 4, 2024), <https://www.federalreserve.gov/monetarypolicy/additional-information-on-other-credit-extensions.htm>.

If the bridge bank receivership's assets were insufficient to pay off the loans to the Fed, the Fed would have borne losses that would be covered by the FDIC guarantee. In that case, the FDIC's Deposit Insurance Fund would have had to fund the shortfall, and the costs of the replenishment of the fund would be passed onto the banks and potentially to the banks' customers. Furthermore, the Fed has reported that the interest rate charged on the Fed's loans to the bridge banks was 100 basis points higher than the prevailing discount window rate. The Fed has not explained the reasons for this premium, though one possible explanation is that it reflects concerns about credit risks. It has also been suggested that the bridge banks' alternative sources of funding, including the Deposit Insurance Fund or the FDIC's Treasury line of credit, would have imposed lower interest costs and thus lowered the costs of resolving the banks.<sup>168</sup>

This new use of the discount window by the Fed to lend to bridge banks that are less than super solvent, and thereafter to become a creditor of a receivership, as well as the use of the FDIC's Deposit Insurance Fund to guarantee such loans, need to be further studied and evaluated.

6. *Policymakers must consider how the Fed's new policy to lend to bridge banks squares with OLA.*

OLA, created by the Dodd-Frank Act, provides for an alternative FDIC-administered resolution process to be applied when the Fed and the FDIC recommend, and Treasury subsequently determines that the resolution of a non-bank financial firm, including a bank holding company, via normal insolvency procedures would pose "serious adverse effects" to U.S. financial stability.<sup>169</sup> This test is very similar to the one required to trigger the systemic risk exception, which was most recently used to protect all depositors in a FDIC receivership proceeding.

Under OLA, the FDIC is permitted to borrow on a line of credit from the Treasury limited by the amount of assets of the failed entity that are available for repayment and use the funds to provide a loan to a bank holding company in receivership that can be down streamed as capital to provide liquidity support to the holding company's bank and non-bank subsidiaries. If the OLA resolution results in a net cost to the FDIC such that the FDIC does not receive back the full amount necessary to repay the loan to the Treasury, the FDIC requires bank holding companies with at least \$50 billion in assets and any Fed-supervised non-bank financial company to contribute to cover the shortfall.<sup>170</sup> However, if the Fed is now prepared to lend to bridge banks through the discount window, albeit with a FDIC guarantee, it calls into question whether OLA is still necessary as a means of providing emergency liquidity.

OLA was designed to accommodate the resolution of holding company structures that include substantial nonbank components.<sup>171</sup> Although substantially all of the value of SVB's holding company structure was attributable to the SVB bank entity, OLA's utility is not premised on the presence or absence of substantial nonbank components within the same structure. Thus, it would not be inconsistent with the intent of OLA to have applied it to SVB.

---

<sup>168</sup> Jeff Huther, *The FDIC's Unusual Loan from the Federal Reserve* ABA BANKING JOURNAL (Mar. 5, 2024), <https://bankingjournal.aba.com/2024/03/the-fdics-unusual-loan-from-the-federal-reserve/>.

<sup>169</sup> Dodd-Frank Act § 203(b)(2) (12 U.S.C. § 5383(b)(2)).

<sup>170</sup> Dodd-Frank Act § 210(o).

<sup>171</sup> Klein, *supra* note 170.

However, one of the defining features of a resolution under OLA is single point of entry (“SPOE”), under which only the failed bank’s holding company is placed in a receivership. Under a normal FDIC-administered resolution, as occurred with SVB, it is instead the bank entity beneath the top tier holding company that is placed in receivership. In a hearing before the House Financial Services Committee, Fed Chairman Powell suggested that the Fed could not deploy OLA in response to the SVB crisis because events moved too quickly.<sup>172</sup> But there may have been additional factors that dissuaded regulators from using OLA. In particular, total loss absorbing capacity (“TLAC”) requirements are commonly regarded as an essential element of a resolution under OLA.<sup>173</sup> TLAC requirements provide that a bank holding company’s capital structure must consist of a minimum amount of extra equity capital, usually provided by debt that can be converted to equity in a receivership proceeding, thereby lessening the likelihood that government support will be required.<sup>174</sup> However, TLAC requirements do not apply to banks the size of SVB. The absence of a required TLAC buffer may have dissuaded regulators from relying on OLA. A currently pending proposal of the FDIC, Fed, and OCC would extend the long-term debt provisions of the TLAC rule to banks with at least \$100 billion in assets.<sup>175</sup>

More generally, the SVB crisis raises questions about the operational readiness of OLA. If OLA could not be deployed rapidly enough in SVB’s case, it raises further questions about whether OLA can be effectively deployed in the event of future bank runs, which could occur just as quickly.

7. *The FHLBs should not have a role as lender of last resort.*

The original mission of the FHLB system upon its founding in 1932 was to support mortgage lending by thrifts and insurance companies. Membership was thus traditionally limited to these institutions. In 1989, following the savings and loan crisis, FHLB membership eligibility was expanded to any bank with more than 10% of its assets in residential mortgage-related assets.<sup>176</sup>

The FHLBs provide loans upon request to their members with the intention that the proceeds will support mortgage lending by the member institution. Over time however, FHLB member banks have come to rely increasingly on FHLB advances as a source of general short-term liquidity. The FHLBs have thus become *de facto* general lenders to the banking system and are now also

---

<sup>172</sup> Transcript, *House Financial Services Committee Holds Hearing on Semiannual Monetary Policy Report* 110-111 (June 2023) (on file with authors).

<sup>173</sup> DEPARTMENT OF THE TREASURY, *Orderly Liquidation Authority and Bankruptcy Reform* (2018) [https://home.treasury.gov/sites/default/files/2018-02/OLA\\_REPORT.pdf](https://home.treasury.gov/sites/default/files/2018-02/OLA_REPORT.pdf).

<sup>174</sup> Paul Kupiec, *Why Did Regulators Ignore Dodd-Frank and Orderly Liquidation for Failed Banks?* THE HILL (Mar. 13, 2023), <https://thehill.com/opinion/finance/3903231-why-did-regulators-ignore-dodd-frank-and-orderly-liquidation-for-failed-banks/>.

<sup>175</sup>OCC, FEDERAL RESERVE SYSTEM, FDIC, *Long-Term Debt Requirements for Large Bank Holding Companies, Certain Intermediate Holding Companies of Foreign Banking Organizations, and Large Insured Depository Institutions*, 88 FED. REG. 180, 64,524 (Sept. 19, 2023), <https://www.govinfo.gov/content/pkg/FR-2023-09-19/pdf/2023-19265.pdf>.

<sup>176</sup> Stefan Gissler & Borghan Narajabad, FEDERAL RESERVE, *The Increased Role of the Federal Home Loan Bank System in Funding Markets, Part 1: Background* (Oct. 18, 2017), <https://www.federalreserve.gov/econres/notes/feds-notes/the-increased-role-of-the-federal-home-loan-bank-system-in-funding-markets-part-1-background-20171018.html>

effectively acting as alternative lenders of last resort alongside the Fed. But the events of March 2023 show that having two lenders of last resort creates a coordination problem. SVB sought first to obtain liquidity loans through the FHLB, and only when it could not do so did it approach the Fed. This caused a delay which likely exacerbated the run. More generally, FHLBs are less suited to the role of lender of last resort for the simple reason that they cannot create money as the Fed can, and because when the FHLB lends, it requires a general lien over the borrower's assets.<sup>177</sup> This lien can delay the Fed in obtaining the perfected security interest it needs to extend a discount window loan to the same bank when timing is critical.<sup>178</sup> On November 7, 2023 the Federal Housing Finance Agency, the agency responsible for oversight of the FHLB system, released the results of their internal review of the FHLB's lending policies.<sup>179</sup> Their report concluded that FHLBs should no longer be a part of any lender of last resort process. Indeed, FHLBs should likely not function as lenders more generally beyond providing support for mortgage lending. Lender of last resort responsibilities should henceforth be confined to the Fed.<sup>180</sup>

8. *The respective roles of the lender of last resort function and deposit insurance in stemming contagion must be clarified.*

Deposit insurance at sufficient levels not only protects depositors but also has a stabilizing effect that can stem contagion.<sup>181</sup> As former Treasury Secretary Tim Geithner has noted, deposit insurance is one of several parts of the safety net that capital markets assume is in place and rely upon.<sup>182</sup> Deposit insurance thus had a key role in stemming contagion during the 2007-2008 crisis and supporting not only the banking sector, but also “other markets that were as critical to the broader economy.”<sup>183</sup> Since the introduction of federal deposit insurance in 1934, the number of

---

<sup>177</sup> Greg Baer et al., *Improving the Government's Lender of Last Resort Function: Lessons from SVB and Signature Bank*, BANK POLICY INSTITUTE (Apr. 24, 2023), <https://bpi.com/improving-the-governments-lender-of-last-resort-function-lessons-from-svb-and-signature-bank/>.

<sup>178</sup> *Id.*; see also, Cornelius Hurley, Letter to Subcommittee on Financial Institutions and Monetary Policy, Committee on Financial Services, U.S. House of Representatives (Feb. 18, 2024) (“The FHLBs authority to cast a “blanket lien” over all assets of its members greatly complicates the role of the Fed as the secured and true lender of last resort. When time is of the essence, for example during a bank run such as we experienced with Silicon Valley Bank last year, that last thing that is needed is negotiations to take place between separate arms of the government.”).

<sup>179</sup> FEDERAL HOUSING FINANCE AGENCY, *FHLBank System at 100, Focusing on the Future* (2023), <https://www.fhfa.gov/AboutUs/Reports/Pages/FHLBank-System-at-100-Report.aspx>.

<sup>180</sup> See Kathryn Judge, *The Unraveling of the Federal Home Loan Banks* 41 YALE J. OF REG. (forthcoming) (2024), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4626125](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4626125) (“Making matters worse, [the FHLB system] became a ‘lender of next to last resort’ to banks and thrifts. It is in this capacity that it has loaned so much money to SVB, Washington Mutual and so many other financial institutions on the verge of failure, and it is in this capacity that it continues to allow financial institutions to tap government backed financing while avoiding the accountability that comes with going to the nation’s designated lender of last resort, the Federal Reserve.”)

<sup>181</sup> HAL S. SCOTT, CONNECTEDNESS AND CONTAGION: PROTECTING THE FINANCIAL SYSTEM FROM PANICS 146 (2016).

<sup>182</sup> Timothy F. Geithner, *The Early Phases of the Financial Crisis: Reflections on Lender of Last Resort* (2019), <https://elischolar.library.yale.edu/cgi/viewcontent.cgi?article=1011&context=journal-of-financial-crises>

<sup>183</sup> Remarks by Treasury Secretary Tim Geithner to the International Monetary Conference (June 6, 2011), <https://home.treasury.gov/news/press-releases/tg1202>; Ben S. Bernanke et al., *What We Need to Fight the Next Financial Crisis* THE NEW YORK TIMES (Sept. 7, 2018), <https://www.nytimes.com/2018/09/07/opinion/sunday/bernanke-lehman-anniversary-oped.html>.

bank failures has decreased significantly.<sup>184</sup> The level of uninsured deposits in the U.S. banking system has grown substantially since the early 1990s. In 1990, roughly 20% of U.S. deposits were uninsured. This figure grew to roughly 40% by 2008 before dropping to 20% again by 2010. By 2021, uninsured deposits had grown to 46.6% of all deposits.<sup>185</sup> Withdrawals by large uninsured depositors were instrumental in spurring the runs on SVB and Signature. The potential protection of uninsured depositors on a case-by-case basis when in insolvency, pursuant to the systemic risk exception, does not provide the same degree of protection against contagion as do higher deposit insurance limits that assure depositors in still-solvent banks of repayment. Congress should therefore consider modifications to the current deposit insurance system. This could include increasing the current general deposit insurance limit of \$250,000 or more targeted modifications such as increasing the limit for payment accounts specifically.<sup>186</sup>

On the other hand, if deposit insurance is too high, it can undermine the market discipline exerted on banks by uninsured depositors.<sup>187</sup> And though some have argued for unlimited deposit insurance as a means to prevent future crises,<sup>188</sup> the unlimited exposure of government to banks' deposit liabilities would entail that the government must play a more critical and wide-ranging role in determining which activities and risks banks are permitted to undertake.

Proponents of unlimited deposit insurance have recognized that unlimited deposit insurance would necessitate major restrictions on banks and money markets to counteract moral hazard. These include effectively reinstating the Glass-Steagall Act by tightening deposit bank portfolio constraints and reintroducing the prohibition under former Regulation Q on banks paying interest on checking accounts.<sup>189</sup> Furthermore, it would be necessary to eliminate the existence of uninsured money-like claims in the shadow banking sector by restricting the issuance of short-term liabilities to regulated banks. This would entail banning money market funds, and potentially other forms of mutual funds.<sup>190</sup> Unlimited deposit insurance would also entail much higher insurance premiums for banks, which could be passed on to customers in the form of higher service fees.<sup>191</sup> A recent empirical analysis suggests that a total deposit insurance regime would have no practical benefits because uninsured depositors generally already behave with the expectation that they will be bailed out in the event of a bank failure.<sup>192</sup> Given that bank runs still occur, this finding also suggests that depositors still prefer to move their deposits from a bank in distress to a safer

---

<sup>184</sup> Eduardo Davila & Itay Goldstein, *Optimal Deposit Insurance* 131(7) J. OF POLITICAL ECONOMY 1676, 1677 (2023) (“[M]ore than 13,000 banks failed between 1921 and 1933, of which 4,000 banks failed in 1933 alone. In contrast, a total of 4,057 banks failed in the United States between 1934 and 2014.”).

<sup>185</sup> FDIC *supra* note 87.

<sup>186</sup> *Id.*; see also Samuel G. Hanson et al., *The Evolution of Banking in the 21st Century: Evidence and Regulatory Implications* (2024).

<sup>187</sup> Brian A. Johnson & Hal S. Scott, *Controlling the Long-Term Problem of Short-Term Funding* (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2910217](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2910217); Scott *supra* note 181; Davila *supra* note 184.

<sup>188</sup> MORGAN RICKS, THE MONEY PROBLEM: RETHINKING FINANCIAL REGULATION (2017); Lev Menard & Morgan Ricks, *Scrap the Bank Deposit Insurance Limit* THE WASHINGTON POST (Mar. 15, 2023), <https://www.washingtonpost.com/opinions/2023/03/15/silicon-valley-bank-deposit-bailout/>.

<sup>189</sup> Johnson, *supra* note 187.

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> N. Aaron Pancost & Roberto Robatto, *Bailing Out (Firms') Uninsured Deposits: A Quantitative Analysis* (2023), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4507550](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4507550).

bank even if they believe that they will not suffer losses in resolution, presumably because they prefer to avoid the resolution process completely and moving deposits is relatively costless.

While a dramatic reform to the current deposit regime on the sole basis of the SVB crisis may be unwarranted, Congress must begin to consider whether deposit insurance should take on more of the burden of preventing runs relative to lender of last resort and if so to what extent deposit insurance limits should be raised so that it can better perform this function without undermining market discipline. This should include consideration of restoring in some form the authority of the FDIC to raise deposit insurance limits with respect to non-interest-bearing transaction accounts of banks in a crisis. The FDIC had this authority before Dodd Frank, and it was restored on a temporary basis during COVID.<sup>193</sup> Allowing banks to fail and then rescuing uninsured depositors as part of the resolution process is not an optimal solution. Indeed, according to one estimate the protection of uninsured depositors in resolution may have imposed an additional \$45 billion in resolution expenses on the Deposit Insurance Fund over the past 15 years.<sup>194</sup> And obtaining the joint resolution of Congress that is currently necessary for the FDIC to guarantee non-interest bearing transaction accounts before a bank's failure during the events of March 2023 crisis would have been impracticable and would be similarly impracticable in a future crisis. Appropriately calibrated deposit insurance coverage should be sufficient to effectively stem contagion if it works in conjunction with a strong lender of last resort function that reflects the needed reforms discussed herein.<sup>195</sup>

9. *The FDIC should use its authority to claw back compensation from a failed bank's executives if their gross negligence imposes costs on the Fed, the Deposit Insurance Fund, or taxpayers.*

Section 11(k) of the Federal Deposit Insurance Act authorizes the FDIC to recover damages from the executives of a failed bank in cases of gross negligence.<sup>196</sup> The FDIC should be prepared to exercise this authority to claw back compensation received by executives of a failed bank if, due to their gross negligence, a bank (1) must rely on loans from the Fed to avert insolvency, (2) receives loans from the Fed in insolvency, or (3) otherwise receives government support to avoid failure (e.g., the Troubled Asset Relief Program (“TARP”), in 2008) or in connection with its failure, and thereby imposes costs or substantial risk of loss on the Fed, the Deposit Insurance Fund, or taxpayers more generally.<sup>197</sup>

---

<sup>193</sup> CARES Act Section 4008. FDIC, Options for Deposit Insurance Reform 19 (2023), <https://www.fdic.gov/analysis/options-deposit-insurance-reforms/report/options-deposit-insurance-reform-section3.pdf>.

<sup>194</sup> Michael Ohlrogge, Why Have Depositors Become De Facto Insured? (Dec. 7, 2023), <https://www.promarket.org/2023/12/07/why-have-uninsured-depositors-become-de-facto-insured/>.

<sup>195</sup> Scott, *supra* note 181; Davila *supra* note 184 at 1725; *see also* FDIC, *supra* note 87.

<sup>196</sup> Federal Deposit Insurance Act, Section 11(k).

<sup>197</sup> Charles Calomiris et al., *Establishing Credible Rules for Fed Emergency Lending* 9(3) JOURNAL OF FINANCIAL ECONOMIC POLICY 260 (2017) <https://www.pifsinternational.org/wp-content/uploads/2022/09/Establishing-Credible-Rules-for-Fed-Emergency-Lending-2017.pdf>.

Following the SVB crisis lawmakers have proposed bills that would give the FDIC additional clawback authorities, some of which would impose a standard of strict liability.<sup>198</sup> This goes too far. Strict liability or an ordinary negligence standard would likely dissuade capable individuals from managing banks, especially in crisis scenarios where their services are most needed.<sup>199</sup> The FDIC already has the authority under Section 11(k) to claw back compensation for gross negligence or more severe misconduct. Further legislation of this type should therefore not be necessary.

10. *The SVB crisis raises important questions about the utility of the current liquidity regime in stemming contagion and whether a discount window borrowing capacity-based requirement is superior.*

The SVB crisis also suggests a reconsideration of the utility of the current liquidity requirements in stemming contagion and whether it is necessary to reorient those requirements away from the extent of liquid assets on a bank's balance sheet and toward a bank's discount window borrowing capacity.

Liquidity requirements are regulatory standards that oblige banks to hold assets that can be quickly converted to cash or pledged as collateral in an amount sufficient to withstand a sudden surge in deposit withdrawals. These “private” liquidity buffers are intended to provide another layer of protection against contagion in addition to the “public” liquidity supplied by the lender of last resort. Under U.S. law, the “liquidity coverage ratio” (“LCR”) requires certain large banks to hold “high quality liquid assets” (“HQLA”) such as Treasury securities and Fed deposits at least equal to the bank's 30-day “net cash outflow,” which is an estimate of a severe deposit outflow occurring over a 30-day period. In 2018, the thresholds at which banks become subject to the LCR were changed so that SVB was not subject to the LCR when it failed. However, SVB was still required under Regulation YY to maintain a buffer of “highly liquid assets,” which is a broader category than HQLA, consisting of HQLA plus other low-risk assets approved by the Fed, sufficient to fund its estimated 30-day cash outflow.<sup>200</sup> Although supervisors noted concerns about SVB's liquidity situation, and the Fed later suggested that SVB had breached Regulation YY on several occasions, supervisors did not take any action requiring SVB to remedy such a breach. On the other hand, more than half of SVB's assets consisted of HQLA, and according to one estimate, this would have sufficed to comply with the LCR if SVB had been subject to it, though other estimates take the opposite view.<sup>201</sup> It is therefore plausible, though not certain, that even the more stringent

---

<sup>198</sup> See The RECOUP Act, <https://www.congress.gov/bill/118th-congress/senate-bill/2190>; The Failed Bank Executive Clawback Act, <https://www.documentcloud.org/documents/23731796-failed-executive-clawback-act-3-29-23>.

<sup>199</sup> See Randall Guynn et al., *Davis Polk Discusses, RECOUP Act's Clawbacks of Failed-Bank Executives' Compensation* THE CLS BLUE SKY BLOG (April 11, 2024), <https://clsbluesky.law.columbia.edu/>.

<sup>200</sup> 12 CFR § 252.35(b).

<sup>201</sup> Greg Feldberg, *Lessons from Applying the Liquidity Coverage Ratio to Silicon Valley Bank* YALE PROGRAM ON FINANCIAL STABILITY (Mar. 27, 2023), <https://som.yale.edu/story/2023/lessons-applying-liquidity-coverage-ratio-silicon-valley-bank>.

liquidity requirements that would have applied to SVB before 2018 would not have been any more effective at stemming the run.<sup>202</sup>

Even before the SVB crisis, there were significant questions about the utility of liquidity requirements in stemming contagion. First, if a run is severe enough, even the largest store of liquid assets will be exhausted. An empirical analysis of the 2023 crisis found that interest rate risks can spur depositor runs that quickly exhaust even the most liquid bank's supply of liquid assets.<sup>203</sup> Depositors could be incentivized to withdraw sooner, before the bank's liquid assets are exhausted, accelerating the crisis.<sup>204</sup> Second, if a bank delays borrowing from the lender of last resort because it initially sought to stem a liquidity crisis by selling its buffers of liquid assets, the delay may allow a run to accelerate past the point at which lender of last resort lending is effective.<sup>205</sup> Third by effectively requiring banks to hold substantial amounts of government securities, liquidity requirements can increase a bank's exposure to interest rate risk. All of these concerns were realized in the case of SVB: SVB was exposed to substantial interest rate risk as a result of its large holdings of government securities. In fact, it was the revelation of the severity of this risk combined with the sale of a portion of its liquid portfolio to fund withdrawals that triggered the acute run. SVB's liquid assets were quickly overwhelmed by the speed and size of withdrawals. Furthermore, by requiring all banks to hold a minimum amount of liquid assets, liquidity requirements have the unintended side effect of reducing the supply of liquid assets available to banks that need liquidity from banks that do not. More generally, liquidity requirements impose costs on the banking system and the economy more broadly, since every dollar that banks must allocate to low-yielding liquid assets is one less dollar that they can lend to productive enterprises.<sup>206</sup>

Policymakers should therefore consider whether liquidity requirements should be reframed in order to be more effective in stemming future runs. For example, the case of SVB suggests that one of the most acute liquidity risks stems from depositor concentration, both with respect to individual depositors and uninsured deposits. Policymakers should therefore consider specifically a redesign of liquidity requirements that considers the overall concentration of a bank's deposit base and the relative mix between retail and wholesale depositors and insured and uninsured deposits.<sup>207</sup>

Policymakers must also consider the drawbacks and limitations of liquidity requirements discussed above, including the capacity for overly rigid liquidity requirements to decrease liquidity in a crisis scenario, and how the current regime can be reoriented to mitigate these shortcomings.<sup>208</sup>

---

<sup>202</sup> Quarles, *supra* note 118; Christopher Russo, *Tailoring Liquidity Rules Did Not Cause the Failure of Silicon Valley Bank* (2023), [https://www.jec.senate.gov/public/\\_cache/files/f85576f4-0b9f-4827-b475-109db9b742b3/jec-svb-report.pdf](https://www.jec.senate.gov/public/_cache/files/f85576f4-0b9f-4827-b475-109db9b742b3/jec-svb-report.pdf).

<sup>203</sup> Erica Jiang et al., *Monetary Tightening and U.S. Bank Fragility in 2023: Mark-to-Market Losses and Uninsured Depositor Runs* (2023), <https://www.nber.org/papers/w31048>.

<sup>204</sup> HAL S. SCOTT, CONNECTEDNESS AND CONTAGION 183-84 (2016).

<sup>205</sup> *Id.*

<sup>206</sup> *Id.*

<sup>207</sup> Quarles, *supra* note 118.

<sup>208</sup> Hal S. Scott, *Testimony Before the Committee on Banking, Housing, and Urban Affairs, U.S. Senate* (Jun. 7, 2016), [https://capmktreg.org/wp-content/uploads/2023/03/HSS\\_Written\\_Testimony-SBC-6-7-16.pdf](https://capmktreg.org/wp-content/uploads/2023/03/HSS_Written_Testimony-SBC-6-7-16.pdf).

In particular, the events of 2023 suggest that liquidity requirements should be reoriented around a bank’s discount window borrowing capacity. Banks could be required to either pre-pledge or otherwise have assets available to pledge with the Fed to support discount window loans sufficient to withstand the withdrawal of a significant percentage of uninsured deposits within a short timeframe, thus substantially reducing the likelihood that transfers of additional collateral are necessary. This requirement could be paired with an enhanced commitment on the part of the Fed to provide banks with discount window loans at stipulated haircuts and above-market interest rates, as in the “committed liquidity facility” (“CLF”) proposals set forth by former Bank of England Governor Mervyn King and the Bank Policy Institute.<sup>209</sup>

There have been several preliminary proposals for borrowing capacity requirements described in recent months that have been centered around the prepositioning of collateral. For example, in recent remarks Acting Comptroller Hsu described a proposal whereby banks would be required to “identify ex ante the assets that will be pledged to the discount window as collateral” and “preposition[] them accordingly.”<sup>210</sup> A recent report by the Group of Thirty also proposes a prepositioning regime where banks would be required to preposition an amount of collateral, with applicable haircuts, linked to the value of the bank’s runnable liabilities.<sup>211</sup>

But framing such proposals as “prepositioning” requirements mixes two issues that ought to be analyzed separately: an operational issue and a liquidity issue. As described in recommendation 3 above, prepositioning should be unnecessary if it possible to pledge necessary collateral to the Fed without delay at the first sign of a crisis.

The underlying question is therefore not prepositioning *per se* but whether banks should be subject to a new liquidity requirement that they hold assets eligible to be pledged to the discount window sufficient to secure a loan that would enable the bank to withstand the withdrawal of a given percentage of its “runnable liabilities” – essentially their uninsured demand deposit liabilities – over a very short time period. This requirement would differ from the current liquidity coverage ratio (LCR), which assumes a bank experiences outflows over a 30-day period, by assuming that a bank experiences outflows over a shorter time horizon, closer to those experienced by SVB and Signature, and require the bank to hold sufficient assets that it can use to generate liquidity within that timeframe. For example, the potential requirement that Acting Comptroller Hsu described would assume a bank loses a large percentage of its deposits over five days, and discount window borrowing capacity would be one way that the bank could meet this requirement.<sup>212</sup>

A Fed borrowing capability requirement based on runnable liabilities would need to consider whether illiquid loans can be used to meet the requirement.<sup>213</sup> As of now, a substantial portion of

---

<sup>209</sup> Mervyn King, *We Need a New Approach to Bank Regulation* FINANCIAL TIMES (May 12, 2023), <https://www.ft.com/content/43b926a6-b1ba-47a6-91f7-9ad5f776f8f8>; MERVYN KING, *THE END OF ALCHEMY: MONEY, BANKING, AND THE FUTURE OF THE GLOBAL ECONOMY* (2016).

<sup>210</sup> Acting Comptroller Hsu, *supra* note 148 at 5.

<sup>211</sup> THE GROUP OF THIRTY, *BANK FAILURES AND CONTAGION – LENDER OF LAST RESORT, LIQUIDITY, AND RISK MANAGEMENT* 12 (2024), [https://group30.org/images/uploads/publications/G30\\_Lessons-23-Crisis\\_RPT\\_Final.pdf](https://group30.org/images/uploads/publications/G30_Lessons-23-Crisis_RPT_Final.pdf).

<sup>212</sup> See, e.g., Acting Comptroller Hsu *supra* note 148 at 6.

<sup>213</sup> Bank Policy Institute, *Statistics on Collateral Pledged to the Discount Window* (Nov. 20, 2023), <https://bpi.com/statistics-on-collateral-pledged-to-the-discount-window/>; BOARD OF GOVERNORS OF THE FEDERAL

the collateral that banks voluntarily preposition at the Fed consists of loan assets: As of Q3 2021 the total value of pledged collateral was \$917 billion, equal to approximately 4% of the total assets of US commercial banks, and about 60% of the value of this collateral consisted of loan assets. Loans are not high-quality liquid assets (HQLA) under the LCR and thus cannot be used to meet that requirement. However, they should be eligible under a borrowing capability requirement to the extent they are eligible to be pledged to the discount window. The Bank Policy Institute similarly recommends that the Fed should provide banks, for a fee, a committed line of credit collateralized by loans that count as HQLA.<sup>214</sup> The requirement would need to track changes to the value of eligible loans over time in order monitor banks' continued compliance. The Fed has already developed procedures and methodologies for the monthly valuation of loan collateral pledged to the discount window. Since a borrowing capability requirement would be intended to address runs that potentially develop within the space of days, these procedures would probably need to be enhanced to permit at least weekly revaluations of loan collateral.

Furthermore, in contrast to proposals such as that of Acting Comptroller Hsu, if a new borrowing capability requirement is adopted, whether or not it involves prepositioning, it should supersede, rather than supplement, the LCR. As the Group of Thirty Report notes, if banks are required to have enough collateral to support discount window borrowings to cover all of their runnable liabilities, the liquidity coverage ratio becomes “largely irrelevant” during stress times.<sup>215</sup>

## B. Lessons from the COVID Crisis

### 1. The Fed's lending facilities should be for the purpose of acting as lender of last resort only and should not be used for fiscal policy.

During the COVID-19 pandemic, the Fed used its emergency lending powers under Section 13(3) to create temporary credit facilities under which it loaned to non-financial corporations and small businesses. Among other programs, the Fed lent directly to non-financial businesses under the Primary and Secondary Market Corporate Credit Facilities.<sup>216</sup> It lent to holders of asset-backed securities pursuant to the Term Asset-Backed Securities Loan Facility in order to encourage continued lending to consumers and small businesses.<sup>217</sup> The Fed's assumption of this role raises

---

FEDERAL RESERVE SYSTEM, Assets and Liabilities of Commercial Banks in the United States – H.8 (Dec. 30, 2021), <https://www.federalreserve.gov/releases/h8/20211230/>.

<sup>214</sup> Greg Baer et al., *Improving the Government's Lender of Last Resort Function: Lessons From SVB and Signature Bank* (Apr. 24, 2023), <https://bpi.com/improving-the-governments-lender-of-last-resort-function-lessons-from-svb-and-signature-bank/>.

<sup>215</sup> *Id.*

<sup>216</sup> FEDERAL RESERVE, Primary Market Corporate Credit Facility, <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200409a5.pdf>; FEDERAL RESERVE, Secondary Market Corporate Credit Facility, <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200409a2.pdf>.

<sup>217</sup> FEDERAL RESERVE, Term Asset-Backed Securities Loan Facility <https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200323b3.pdf>

significant policy issues.<sup>218</sup> In particular, this lending entailed potentially significant credit risk to the Fed.<sup>219</sup> Although such credit risks do not present a risk of bankruptcy, because the Fed can create money, they could put the Fed's reputation and credibility at risk, especially if the losses were high.<sup>220</sup> Indeed, as noted above, the Fed's role in lending to the non-financial sector during the COVID crisis exposed the Fed to extensive public criticism.

Fiscal policy should be the sole role of the Treasury and not the Fed since decisions about fiscal policy should be made by elected government officials that are accountable to voters, not independent agencies such as the Fed. Additionally, jointly tasking two institutions with the execution of emergency lending decisions for both banks and non-banks, as is currently the case under Section 13(3), with no clear division of responsibility means that it is difficult to decide where decision responsibility actually lies.

The Fed's lending facilities should be limited to providing liquidity to financial institutions as lender of last resort where there is no substantial credit risk. Lending within these parameters should be the decision of the Fed, and Treasury approval should not be necessary for the Fed to engage in any such lending necessary to stem a bank run. By contrast, lending to non-financial institutions, or to financial institutions where there is substantial credit risk, should be extended only by the Treasury through pre-funded appropriations or guarantee authority. This includes loans to insolvent bridge banks, which should be funded by the Treasury either through their credit line to the FDIC or through use of OLA, if justified. Congress should therefore grant the Treasury the authority to establish emergency lending facilities for non-financial institutions banks where significant credit risk is involved and limit the Fed's involvement in any such lending to operational support.<sup>221</sup>

2. *The Fed's intervention in securities markets should similarly not expose the Fed to credit risk, regardless of how accomplished.*

During both the 2008 financial crisis and COVID the Fed leveraged its Section 13(3) lending authority to effect indirect purchases of private securities that it could not purchase directly, and thereby acted as a "market maker of last resort" or "dealer of last resort" with respect to non-government securities.<sup>222</sup> Commentators had argued that central bank intervention of this type was necessary to stabilize securities markets. For example, Buiter & Sibert (2007) called for the Fed to "buy and sell outright a range of private sector credit instruments" and that central banks

---

<sup>218</sup> COMMITTEE ON CAPITAL MARKETS REGULATION, *Revising the Legal Framework for Non-Bank Emergency Lending* (2021), <https://capmktreg.org/wp-content/uploads/2022/11/Revising-the-Legal-Framework-for-Non-Bank-Emergency-Lending-09.21.2021.pdf>.

<sup>219</sup> Scott, *supra* note 131.

<sup>220</sup> *Id.*

<sup>221</sup> *Id.*

<sup>222</sup> See, e.g., PERRY MEHLING, *THE NEW LOMBARD STREET: HOW THE FED BECAME THE DEALER OF LAST RESORT* (2011); Stephen G. Cecchetti, Kermit L. Schoenholtz, *Central Banks' New Frontier: Interventions in Securities Markets* MONEY & BANKING (Aug. 24, 2022), <https://www.moneyandbanking.com/commentary/2022/8/23/central-banks-new-frontier-interventions-in-private-securities-markets>; Alexander Mehra, *Legal Authority in Unusual and Exigent Circumstances: The Federal Reserve and the Financial Crisis* 222 U. OF PENN. JOURNAL OF BUSINESS LAW 221 (2011), <https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1375&context=jbl>

“cannot avoid being in this business when markets are disorderly and fail to match buyers and sellers of securities.”<sup>223</sup>

These interventions constituted a “newly improvised, ad hoc” role for the Fed.<sup>224</sup> And indeed to effect the outright purchase of private securities, the Fed leveraged its Section 13(3) lending authority to effect indirect purchases that avoided the restriction of Federal Reserve Act Section 14(b), which generally limits the Fed’s direct purchases of securities to Treasuries and other government guaranteed debt.<sup>225</sup> The Fed established special-purpose vehicles (“SPVs”) and loaned funds to those SPVs under Section 13(3).<sup>226</sup> The Fed then caused the SPVs to purchase private securities, including risky corporate debt.<sup>227</sup> Although the Treasury took a partial stake in the SPVs, and thereby took on some of the risk, the Fed retained some of the risk if the value of those assets declined below the value of the amount that they advanced to the SPVs.

While the Fed’s interventions appear to have been successful in stabilizing securities markets,<sup>228</sup> such outright purchases of private debt securities exposed the Fed to credit risk.<sup>229</sup> These risks are greater than in the case of loans collateralized by private debt securities, since in the case of loans, haircuts can be applied to guard against the possibility of decreases in market value, and additional collateral can be demanded from the debtor during the course of the loan.<sup>230</sup> These purchases, whether accomplished directly or indirectly through Section 13(3), therefore raise the same, and indeed greater, policy concerns as discount window lending to non-creditworthy borrowers. Consistent with the reallocation of lending authority we advocate above, any such interventions in private securities markets should in the future be categorized as fiscal policy and therefore within only the Treasury’s area of power and responsibility. The amendments to Section 10B and Section 13(3) that are necessary to limit the Fed’s lending authorities to financial institutions without substantial credit risk should also make clear that neither the Fed’s lending authorities nor its asset purchase authorities under Section 14 may be used to accomplish similar direct or indirect purchases of private securities.

---

<sup>223</sup> Anne Sibert & Willem Buiter, *The Central Bank as the Market Maker of Last Resort: From Lender of Last Resort to Market Maker of Last Resort* CENTRE FOR ECONOMIC POLICY RESEARCH (Aug. 13, 2007), <https://cepr.org/voxeu/columns/central-bank-market-maker-last-resort-lender-last-resort-market-maker-last-resort>.

<sup>224</sup> Colleen Baker, *The Federal Reserve as Last Resort* 46(1) U. OF MICH. J. OF LEGAL REFORM 69 (2012), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2191784](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2191784).

<sup>225</sup> Federal Reserve Act § 14(b).

<sup>226</sup> *Id.*; see also CONGRESSIONAL RESEARCH SERVICE, *The Federal Reserve’s Legal Authorities for Responding to the Economic Impacts of COVID-19* (Mar. 27, 2020), <https://crsreports.congress.gov/product/pdf/LSB/LSB10435>.

<sup>227</sup> *Id.* at 4; Board of Governors of the Federal Reserve System, Primary Market Corporate Credit Facility, <https://www.federalreserve.gov/monetarypolicy/pmccf.htm>.

<sup>228</sup> Maureen O’Hara & Xing Zhou, *Anatomy of a Liquidity Crisis: Corporate Bonds in the COVID-19 Crisis* JOURNAL OF FINANCIAL ECONOMICS (forthcoming), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3615155](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3615155); Dong Beom Choi & Tanju Yorulmazer, *Whatever It Takes? Market Maker of Last Resort and its Fragility* (2023), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3996592](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3996592)

<sup>229</sup> Cecchetti, *supra* note 222; Carolyn Sissoko, *Financial Dominance: Why the ‘Market Maker of Last Resort’ is a Bad Idea and What to Do About It* (2022), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4240857](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4240857).

<sup>230</sup> Cecchetti, *supra* note 222.

### **III. Conclusion**

The fundamental cause of the failure of SVB was the failure of its management to control the bank's liquidity and interest rate risk. However, once such a failure threatens the broader banking system with contagion, the function of the lender of last resort is to provide emergency liquidity as necessary and appropriate to address the threat, if possible. Because we believe SVB was solvent despite the run, lender of last resort was justified. But the Fed and FHLBs did not act successfully as lenders of last resort to stem the March 2023 run on SVB. SVB's failure set off a contagion in the U.S. banking system that brought down two other large banks. The causes of these failures were several. First, the Fed's discount window lending procedures and operations were unprepared for the speed and size of the run on SVB. Second, the existence of a second, *de facto*, lender of last resort in the form of the FHLBs exacerbated delays in delivering liquidity at critical moments during the crisis. Third, the Fed has not grappled with or made clear to the public how it should leverage its wide discretion to vary collateral requirements for discount window lending to optimize lending decisions in moments of crisis.

Because lender of last resort lending was ineffective, each of SVB, Signature, and First Republic was forced into receivership proceedings, and its assets and liabilities sold to a private acquirer. These resolutions are collectively expected to cost the FDIC's Deposit Insurance Fund an estimated \$40.3 billion.

The events of March 2023 indicate that improvements are necessary if lender of last resort lending is to serve as an effective tool in preventing the recurrence of future crises. In this article we have made 12 recommendations to that end. Among these, we have identified several operational improvements that can be made to quicken the provision of necessary liquidity. We have called for lender of last resort responsibilities to be confined solely to the Fed. We have urged the Fed to reconsider how it can more effectively exercise its discretion to set collateral requirements to appropriately balance credit risks with the primary goal of a lender of last resort: preventing contagion in the banking system. We have also called on policymakers to reconsider how deposit insurance and liquidity requirements can be optimized to coordinate most effectively with lender of last resort lending to avert and respond to crises. In particular, we have argued that the events of 2023 cast serious doubt on the effectiveness of the current liquidity regime in ensuring banks are able to respond to a run and suggest serious consideration of the potential utility of an alternative liquidity regime based on discount window borrowing capacity.