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“Building Better Brakes for a Faster Financial World”

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It is an honor and a pleasure to be here at Columbia. I want to especially thank Professor Lev Menand for hosting this event.

Today, I would like to talk about bank liquidity risk. With the one-year anniversary of last year’s large bank failures fast approaching, it is a good time to reflect on lessons learned and to discuss how best to ensure the safety and soundness of the banking system going forward.

The characteristics of bank runs are changing. Banks and regulators need to adapt accordingly. As the speed of banking and finance accelerates, so too does the need for better brakes to enable a safe and sound system. Some adaptation has already taken place through supervision on an individual bank-by-bank basis. Careful consideration also needs to be given, however, to targeted regulatory enhancements to help ensure that updated liquidity risk management practices are implemented and sustained systematically and consistently, especially across midsize and large banks.

I will start by reflecting on the events of last year and sharing preliminary thoughts on the contours of what targeted regulatory enhancements might look like. I will then close with some thoughts on how the adoption of faster payments and tokenization may impact liquidity risk management in the future.

Lessons learned

The failures of Silicon Valley Bank (SVB) and Signature Bank last year highlighted three vulnerabilities that had been underappreciated:

- First, uninsured deposits can be withdrawn quickly en masse.
- Second, having liquid assets is necessary but not sufficient for banks to endure acute liquidity stress. Banks also need to be adequately prepared and have the operational capacity to monetize those assets quickly.
- Third, contagion to healthy banks does not require interconnectedness and direct exposure to a failing bank. Systemic threats can occur via “guilt by association,” i.e., shared uncertainty with regards to seemingly similar risk profiles, such as high reliance on uninsured deposits for funding.

Before diving into each of these, some context is helpful. Uninsured deposits in aggregate have grown considerably since 2009. The FDIC reported in May 2023 that uninsured domestic deposits increased at an annualized rate of nearly 10 percent, from \$2.3 trillion in 2009 to \$7.7 trillion in 2022.¹ The FDIC’s report also showed that an increasing number of banks are relying on uninsured deposits. Over the same period, online and mobile banking has become ubiquitous, enabling depositors to place and withdraw deposits more quickly and easily. And the decentralization and faster dissemination of information associated with the rise of social media platforms has also had an impact on financial markets.

¹ Federal Deposit Insurance Corporation, [“Options For Deposit Insurance Reform”](#) (May 1, 2023)

1. Recognizing the speed and severity of certain outflows

The combination of these developments significantly increased the liquidity risk of banks with uninsured deposits. As we saw with SVB, a run by uninsured depositors can occur much faster and be substantially more severe than bank runs of the past. On March 9, SVB endured over \$40 billion of outflows—roughly 25% of its total uninsured deposits—on a single day. By contrast, in 2008 Wachovia lost \$10 billion of deposits over eight days and Washington Mutual lost \$19 billion over 16 days.²

Of course, not all uninsured deposits are created equal. SVB’s depositors were highly networked. The vast majority of them were startup technology companies, many of whom knew each other personally and interacted frequently. They relied on the same small group of venture capital investors for funding, advice, and counsel. In short, the conditions were ripe for herd behavior.³

Herding is not limited to venture capital and technology start-ups. In 2008, hedge funds acted as a herd, running en masse from prime brokers like Bear Stearns, Morgan Stanley, and Goldman Sachs. Last March, crypto companies ran en masse from Silvergate Bank and Signature. Shortly after, high net worth individuals withdrew their funds en masse from Credit Suisse.

From a liquidity risk management perspective, it is important to identify ex ante where such herding might occur. Prudently categorizing such deposits and applying appropriately high stress outflow rates is one way to do this. The liquidity coverage ratio (LCR), for instance,

² Board of Governors of the Federal Reserve System, [Review of the Federal Reserve’s Supervision and Regulation of Silicon Valley Bank](#) (April 28, 2023).

³ Wall Street Journal, [How Silicon Valley Turned on Silicon Valley Bank](#) (March 12, 2023).

requires large banks to hold high quality liquid assets sufficient to meet stressed liquidity outflows over a 30-day period. The outflow rates for wholesale funding from financial institutions are high, reflecting the “runnability” of those counterparties. By contrast, the outflow rate for retail demand deposits is low—10%—reflecting their stickiness. One problem highlighted by the failures of SVB, Signature, and Credit Suisse, is that some high-risk deposits, including uninsured deposits, are categorized as “retail demand deposits” for LCR purposes, resulting in an under-calibration of risk. Better classifying higher risk deposits to better capture the heightened risk of herding and applying the appropriate outflow rate could help address this risk more effectively.

2. Ensuring the ability to monetize

The faster pace of bank runs is another change that banks and regulators must adapt to. When massive outflows can occur over hours and days instead of weeks, it isn’t enough for a bank to have a sufficient quantity of liquid assets on hand. Banks also must be able to monetize those assets—i.e., convert them into cash—in a timely manner with a high degree of confidence. Otherwise, the liquidity value of those assets for the risks they are meant to cover is illusory.

Banks have two market-based options for monetizing assets: sales and repo. To avoid fire sale dynamics, banks typically focus on repo. In acute stress scenarios, however, repo may not provide sufficient amounts of liquidity fast enough. Prudent liquidity risk management should consider constraints on the speed and ability to repo substantial amounts of such assets over time.

Of course, the Federal Reserve has the capacity to provide large amounts of liquidity nearly instantaneously via the discount window.⁴ Bank utilization of the Federal Reserve's discount window faces two hurdles, however. The first is operational. Without proper preparation, monetizing assets can take time. When depositors can make withdrawals with just a few taps of the finger or clicks of the mouse, the window for action is quite small. This timing risk can be mitigated by banks identifying *ex ante* the assets that will be pledged to the discount window as collateral and pre-positioning them accordingly. In addition, periodically borrowing from the discount window can help ensure that banks are capable and operationally familiar with what it takes to borrow from the Federal Reserve in case of stress.

The second hurdle to discount window borrowing is stigma. Since the 2008 financial crisis, banks have worried that news of their borrowing from the discount window could be perceived as a sign of weakness, thereby exacerbating a run. As such, many banks believe that in stress they will face a Hobson's choice: the option of borrowing from the discount window is not a real one in practice.

This increasingly matters for OCC-supervised banks. Midsize and large banks supervised by the OCC have over \$12 trillion in deposits, of which \$4.8 trillion, or 40%, are uninsured. Increases in the potential size and speed of liquidity outflows at OCC-supervised banks heightens their vulnerability to discount window stigma.

One solution would be to explicitly give banks credit for their discount window borrowing capacity to cover ultra-short term, acute outflows like those endured by SVB and

⁴ Remarks by Vice Chair for Supervision Michael S. Barr, [The Importance of Effective Liquidity Risk Management](#) (December 1, 2023). It is worth recalling Walter Bagehot's dictum, from his 1873 book, *Lombard Street: A Description of the Money Market*: to avert panic, central banks should lend early and freely, to solvent firms, against good collateral, and at "high" rates.

Signature. This would make clear that regulators *expect* banks in stress to utilize the discount window to help cover short term liquidity outflows when needed. This regulatory expectation could help de-stigmatize discount window usage.

Some have argued for adopting this approach within the LCR by adding discount window capacity to the numerator and expanding the sources of liquidity beyond high quality liquid assets (HQLA). That would be dangerous. I believe it is more appropriate and prudent to take a narrower approach and limit discount window credit to covering only acute, ultra-short-term outflows—up to, say, five days—through a new, targeted liquidity requirement.

In short, I believe a new targeted regulatory requirement for midsize and large banks to have sufficient liquidity to cover stress outflows over a five-day period warrants serious consideration. The denominator should consider the potential speed and severity of uninsured deposit outflows, while the numerator should consider the liquidity value of pre-positioned discount window collateral, in addition to reserves. The rule should also clarify operational preparedness expectations related to the discount window, perhaps even including a requirement to do periodic test draws.

Predictability and repeatability are critical to consider. With an ultra-short-time horizon and with pre-positioned collateral, banks, regulators, and market participants can be fairly confident that the Federal Reserve will make discount window liquidity available in a timely manner as needed. That confidence declines the longer the time horizon and if the collateral is not pre-positioned, as there is then more room for counterparties and functional regulators to question whether the central bank will, in fact, provide and/or maintain liquidity support.

While de-stigmatizing *appropriate* discount window usage is imperative, it is equally important to minimize the risk of *inappropriate* discount window over-reliance. The line between being a lender of last resort and providing a bailout can be a fine one, especially in stress. Adopting a separate liquidity requirement for ultra-short-term outflows could provide a safe space for appropriate discount window usage, while maintaining a credible stance against bailouts in longer-term stress scenarios. In short, the adoption of a new, well-crafted regulatory requirement could help de-stigmatize the discount window while maintaining the anti-bailout conservatism of existing liquidity regulations.

3. *Limiting guilt by association*

The contagion risk from the failures of SVB and Signature is worth unpacking because it differs from prior contagion events.

In the 2008 financial crisis, the risk of contagion stemmed from uncertainty about the extent to which losses might be transmitted across the financial system through interconnectedness. When Lehman Brothers filed for bankruptcy on September 15, 2008, no one knew who had exposure and might bear outsized losses. The so-called “breaking of the buck” at the Reserve Fund, a money market mutual fund that held Lehman commercial paper, was shocking and triggered broader market panic because it made the fear of interconnectedness very real. The extraordinary government support to AIG several days later was provided out of a similar concern about the financial system’s exposure and interconnectedness to that distressed company. A couple of years later in Europe, the prospect of sovereign debt defaults by Greece and other countries fed contagion and financial stability fears based on similar concerns.

By contrast, the contagion risk from the failures of SVB and Signature was not due to interconnectedness, but rather a fear that uninsured depositors at *any* bank could be at risk. While the customer profiles of the uninsured deposits at SVB and Signature were understood to be fairly unique, market participants did not have the means to quickly and credibly differentiate the behavior of uninsured deposits at other banks. In other words, there was “guilt by association,” casting doubt on the uninsured deposits held by a wide swath of banks, which threatened to destabilize the broader banking system.

The long-term solution is to credibly contain the scope of association. For instance, most would agree that the portion of uninsured deposits representing excess funds has a riskier liquidity profile than the portion used to fulfill specific business purposes (e.g., meeting payroll or paying suppliers). This is the distinction between so-called “non-operational” and “operational” deposits. Banks define these differently, however, in part because their customers and business models vary enormously, and there is no standardized classification system that market participants can see and trust. On top of that, the deposit landscape has been evolving and shows no signs of settling down—for example, the rise of banking-as-a-service, rapid growth in reciprocal deposits, and innovations in payments and treasury services.

To get a better handle on this, in June the OCC will host an economics symposium for invited academic and government researchers on deposit gathering, franchises, and risk profiles.⁵ Our hope is that focusing on this may contribute to efforts to credibly classify and differentiate

⁵ See [OCC News Release 2023-131, “OCC Solicits Research on Depositor Behavior, Bank Liquidity, and Run Risk.”](#)

deposit types, which may help contain the scope of any “guilt by association” and thus help mitigate contagion risk in the future.

Preparing for an even faster future

Before I conclude, I want to say a few words about liquidity risk in the future.

In the U.S., as we transition towards a faster payments system and possibly tokenization of real-world assets and liabilities⁶, banks may need to further enhance their liquidity risk management capabilities to keep up.

Historically, banking has proceeded in daily increments. Bank tellers balanced their books and cash positions were reconciled at the end of each day. Around this daily cycle arose batch processes, whereby inflows and outflows over the course of a day could be netted, managing the amount of funds flowing throughout the system and providing opportunities to correct mistakes. Many banks still operate this way today.

The future looks different. The time increments are shrinking towards “always on,” 24/7/365. Instant payments systems are becoming the norm abroad, for instance in the UK, Brazil, India, Singapore, Thailand, and others, as well as domestically.⁷

The Federal Reserve’s FedNow service is a real-time, inter-bank, 24/7/365 gross settlement payment system. With FedNow financial institutions can settle payment transactions

⁶ See [OCC News Release 2023-114, “OCC to Host Symposium on the Tokenization of Real-World Assets and Liabilities.”](#)

⁷ See Pay.UK Limited, [“Faster Payment System,”](#) Banco Central Do Brasil, [“What is Pix,”](#) EBANX, [“Unified Payments Interface \(UPI\): The Instant Payment that Reshaped India’s Financial Landscape.”](#) and Bank of Thailand, [“PromptPay.”](#)

any time, including nights, weekends, and holidays. In addition, to the extent tokenization reduces settlement frictions, it will also accelerate the velocity of banking and finance.

This creates the potential for great benefits, including improving financial inclusion and financial health for many people.⁸

But a future of faster, always on, real-time money flows also creates new risks. Faster payments can lead to faster fraud and limit the ability to remediate erroneous transactions. The instantaneous nature of real-time payments necessitates enhanced liquidity risk management, third-party risk management, and fraud and compliance risk management.

As the speed of payments accelerates, we need to think carefully about the associated risks and controls. Banks and regulators should start working now on building the right brakes for a more real-time financial system.

Conclusion

I want to conclude where I started: The characteristics of bank runs are changing, and banks and regulators need to adapt accordingly. We need to develop better brakes to keep banks safe and sound and to mitigate systemic risk. I believe it is possible to take a targeted regulatory approach to address the lessons from the failures of SVB and Signature. I look forward to working with my interagency peers, banks, academics, and other stakeholders on this important task.

⁸ See Aaron Klein, [“Real-time payments can help combat inequality.”](#) (March 6, 2019), and Jean Pesme, [“Fast payments offer potential for faster digital financial inclusion and faster growth”](#) (September 28, 2023).