Banking Trends

Where Depositors Fear to Tread

When depositors flee banks, does that spell the end of lending?

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Silicon Valley Bank (SVB), a midsize U.S. bank, collapsed and was closed by regulators on March 10, 2023. It was the third-largest bank failure in U.S. history and the largest since the 2007-2008 Global Financial Crisis. SVB had a lot of uninsured deposits, and its failure quickly spread fear about the financial health of other banks–particularly other midsize banks. Indeed, in the immediate aftermath of SVB's collapse, depositors withdrew a large amount of deposits from the U.S. banking system (Figure 1).

Since deposits are one of the largest funding sources for banks, the events that followed SVB's collapse raised an important question for policymakers: Would this large deposit outflow affect banks' ability to lend and thus fund projects? The answer depends on whether banks need deposits to finance loans.

There are two broad theories regarding how banks obtain funding for lending. To help distinguish between the two, I call them the deposit view and the lending view. According to the deposit view, banks create liquidity by turning otherwise illiquid liabilities, such as deposits, into loans that borrowers can use to

FIGURE 1

About $300 Billion of Deposits Left the U.S. Banking System in the Three Weeks After SVB Failed

Deposits of all U.S. commercial banks, billions of U.S. dollars, weekly, seasonally adjusted, 2022–2024

Data Source: Board of Governors of the Federal Reserve System (U.S.), Deposits, All Commercial Banks [DPSACBW027SBOG], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DPSACBW027SBOG, December 3, 2024

fund their investments. Based on this view, lending would fall with a large outflow of deposits from a bank.

According to the lending view, however, banks don't need deposits to lend. Instead, demand deposits are created when banks extend credit, so banks actually *create* deposits and liquidity through lending.[1] This process is limited not by the amount of cash deposits available but rather by loan demand, capital constraints, and regulations such as reserve and liquidity requirements. Based on this view, deposits fell because banks were faced with either a decreased demand for loans or a tightening of other constraints, such as capital or reserve requirements. Lending activity does not necessarily decline after depositors withdraw funds from the banking system.

Although economists have found evidence to support both the deposit view and the lending view, understanding which mechanism is dominant can help determine if–and how strongly–policymakers should respond when they observe large deposit outflows.[2] Unfortunately, empirically disentangling the two and identifying which margin is constraining banks' lending is challenging. Specifically, policymakers have struggled to determine whether bank lending is constrained by a decline in cash deposits or by lower loan demand and capital constraints. This article will review evidence of each of these constraints.

Which Comes First: Deposits or Loans?

The two views discussed above support different ideas about how banks obtain funds to lend. In the deposit view, banks collect deposits from savers, keeping a fraction as reserves and lending out the rest. (This is known as a fractional reserve banking system.) Thus, deposits are a prerequisite for a bank's ability to lend. We can explain this with a simple bank balance sheet. Suppose that there is only one bank in the economy and one person with $100 cash. Instead of stashing this cash in their house, this person deposits it at the bank. After the initial cash deposit, the bank has $100 in assets in the form of cash and $100 in liabilities in the form of deposits (Figure 2, top). Suppose now that the bank loans a borrower a fraction of those cash deposits–say, $80–and keeps the rest in reserve for regulatory requirements or depositor withdrawals. Now the bank's balance sheet shows $20 in cash and $80 in loans on the asset side (Figure 2, bottom). Thus, the bank has done something the depositor could not have done if they had stashed their cash in their house instead: It has increased liquidity by turning deposits into loans, which enables additional transactions. The loan is the amount of liquidity created through the banking system.

In this scenario, the supply of deposits is the primary determinant of bank lending: Liquidity creation is made possible by the initial deposit, and lending is limited by either a lack of deposits or too high a reserve requirement. Any decline in deposits would directly limit new lending.

In the lending view, a bank can lend without an initial cash deposit. But how is that possible? When a bank makes a loan to a consumer or a firm, it typically creates a checking account for the borrower's use. Going back to our earlier example, if a borrower gets a $100 loan from a bank, that bank will create a promissory note (a claim) and issue the borrower a checking account with $100. From the bank's point of view, it has an additional $100 in assets in the form of loans and an additional $100 in liabilities in the form of demand deposits. In other words, the bank has created a deposit by making a loan (Figure 3). As New York University professors of economics Lawrence S. Ritter and William L. Silber put it in their money and banking textbook, *Principles of Money, Banking, and Financial Markets*, "Demand deposits come into being when banks extend credit–that is, when they make loans or buy securities."

As we can see from this example, lending is not necessarily constrained by the amount of cash deposits available because, according to the lending view, banks *create* deposits through lending. Bank lending may instead be constrained by other factors. For example, the bank needs to meet capital or other regulatory requirements, and the quantity of loans issued is constrained by loan demand, which is not unlimited.

Policy Implications

The optimal policy response to a crisis like the SVB failure would differ under the two views discussed above. In the deposit view, since having available deposits is directly related to a bank's ability to lend, policymakers need to replenish the lost deposits with a substitute source of

FIGURE 2

A Bank Can Create Liquidity by Turning Deposits Into Loans

An $80 loan is created out of a $100 deposit.

An example balance sheet, according to the deposit view

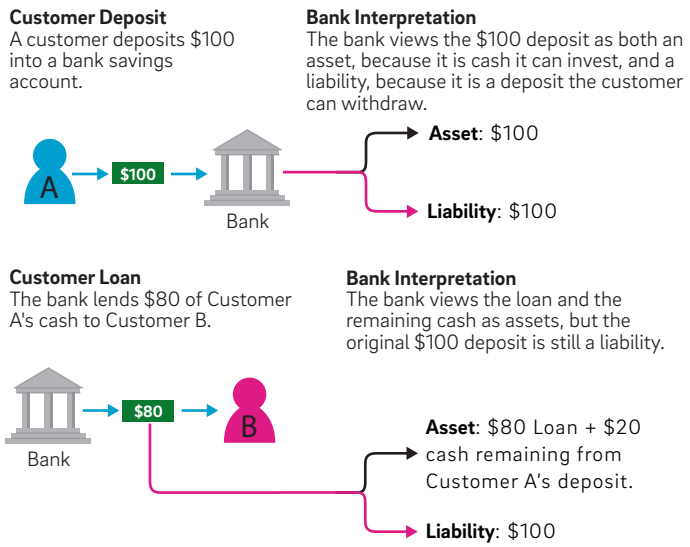
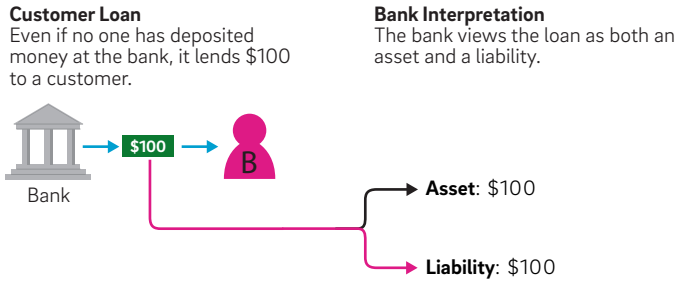


FIGURE 3

But According to the Lending View, Banks Create Deposits by Extending Credit

A hundred dollars of liquidity is created without any initial deposit required.

An example balance sheet, according to the lending view



funding in the banking system. This source can be other liquid assets such as cash or bank reserves. Indeed, policymakers have implemented measures to do just that. For example, two days after SVB's failure, the Federal Reserve established the Bank Term Funding Program (BTFP) to provide emergency liquidity to U.S. depository institutions. In particular, the BTFP allows banks to exchange less-liquid assets such as U.S. Treasuries for cash at their full-face amount, regardless of the current market value. And regardless of the BTFP, banks can borrow from the Fed through the discount window, which is a permanent facility that lends cash to banks, often for just a few days or weeks.

However, based on the lending view, the deposit flight is not necessarily a problem for bank lending. Instead, if policymakers are concerned about the banking crisis negatively affecting loan demand, they can increase loan demand through deficit spending. Alternatively, policymakers can loosen capital requirements or other regulatory constraints.

This section presents a sharp contrast between the two views on what potentially constrains bank lending. In reality, the deposit and lending channels are at work at the same time. The empirical question concerns the direction of causality: Do deposits lead to lending, or the reverse? In the next section, I look at recent research that tries to disentangle these channels empirically.

Empirical Evidence in the Literature

Trying to distinguish between the two channels empirically is challenging because decisions made by a bank typically affect both cash deposits and lending. For example, a bank's advertising campaign can increase both its deposits and its lending. Thus, cash deposits at and lending by a bank usually move together. This makes finding the direction of causality difficult.

To address this problem, researchers have identified exogenous shocks that help them isolate causality. An exogenous shock is an event that occurs outside a bank's decision-making process and acts like a natural experiment that isolates a bank's true response to an event.

For their 2016 *Journal of Finance* article, Wharton School assistant professor of finance Erik Gilje, University of Virginia professor of business administration Elena Loutskina, and Boston College professor of finance Philip E. Strahan used windfalls from oil and gas shale discoveries in the United States as just such a natural experiment. Because of the oil and gas "fracking" boom, local landowners suddenly received mineral royalty payments, leading to an arguably exogenous increase in deposits at banks with branches in shale-boom counties. Their paper identifies 327 banks that received deposit windfalls in different years between 2003 and 2010 as new discoveries were made.

In response to this inflow of deposits, they find, banks with a branch presence in a shale-boom county increased mortgage lending in areas *not* experiencing the boom. In other words, landowners in areas experiencing the fracking boom deposited their newfound wealth in banks, and those deposits traveled through the bank branch network to become loans in areas not experiencing the boom. The result is likely causal for two reasons. First, those other regions were not directly affected by the fracking boom, which alleviates the concern that loan demand drove up lending. In addition, banks with a greater need for funds to support loan growth did not establish new branches in counties experiencing a shale boom.

In her 2022 *Journal of Financial and Quantitative Analysis* article, Notre Dame University assistant professor of finance Jun Yang used the exogenous shock of the influx of international students to U.S. universities from 2000 through 2018 to study the relationship between banks' deposit-taking and lending activities. The article first documents that the number of foreign Chinese students at U.S. universities increased more than sevenfold, from about 60,000 to almost 370,000, from 2000 through 2018. The influx of Chinese students serves as a positive shock to local deposits. The shock is not uniform across all banks, because

some banks have brand names that are better recognized in those students' home country, the People's Republic of China, and this name recognition is plausibly exogenous to a local economy. The paper finds that banks that are more likely to be recognized by Chinese students experienced a higher deposit inflow and expanded their credit supply locally compared with similar banks in the same county. One feature of Chinese students is that, although they contribute to local deposits and consumption, they are mostly excluded from the credit market due to their limited credit histories in the United States. Therefore, she argues, the expansion of credit is driven by the deposit channel.

Overall, both papers find that an exogenous inflow of deposits into banks led to an increase in lending. This supports the deposit view that the direction of causality is from deposits to lending.

However, for our recent *Journal of Financial Stability* article, Washington University professor of finance Anjan Thakor and I looked for situations in which bank cash deposits fell while loan demand rose. We used natural disasters as natural experiments. We found that, immediately after a natural disaster, people withdrew more cash from banks. According to the deposit view, this should have led to a decrease in lending. However, we find that the opposite occurred: Loan demand *increased* for reconstruction and emergency borrowing. Banks funded their loans by creating deposits; this met the demand for loans associated with natural disasters. This means that banks increased lending even when cash deposit balances were falling. This evidence supports the lending view of liquidity creation. Consistent with this view, we also find that banks with more capital created the most liquidity.

A 2017 *Journal of Financial Economics* article by University of New South Wales associate professor of banking and finance Kristle Romero Cortés and Boston College professor of finance Philip Strahan also uses natural disasters as loan demand shocks for banks. They find that banks that operate in multiple local markets shift capital to areas affected by natural disasters from areas that are less affected. They use property damage from natural disasters as a proxy for loan demand. They find that credit in unaffected but connected markets declines by a little less than 50 cents per dollar of additional lending in areas affected by a natural disaster. The article provides evidence that banks can reallocate deposits within their banking network to meet loan demand shocks.

Conclusion

Banks play an important role in liquidity creation, but there is no consensus on the exact mechanism by which liquidity is created through the banking system. This has policy implications when there are large deposit outflows from the banking system, as in the aftermath of SVB's failure. This article illustrates two potential mechanisms and presents recent empirical evidence. So far, there is no consensus in the literature on how lending was impacted by SVB's failure. It's likely that both mechanisms are at work in the real world. Further research is needed before we can resolve this debate. EI

Notes

1 Elements of this view date back to Wicksell (1906), Schumpeter (1912), and Keynes (1930).

2 See Brunnermeier and Pedersen (2009), Berger and Bouwman (2009), and Donaldson et al. (2021) for more references.

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