# What We've Learned So Far from the Bank Run

In part one of this multipart series, we share the key takeaways from the banking crisis, zoom in on the mechanics of the bank run over the past week, and discuss the significance of those flows for the banking system and monetary policy going forward.

MARCH 20, 2023

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While there is still much for us to learn, the diagnosis of the problem in the US banking system has come into clearer focus for us, and through digging deep into all the numbers we can map out the likely ripple effects. In terms of the diagnosis, it is clear now that all the post-2008 restructuring of the US credit system significantly lowered the amount of credit risk that was held in levered vehicles, but those same moves pushed many banks to take on more duration exposure. This shift was gradually building and then accelerated parabolically during the pandemic. In 2020 and 2021, the combination of QE and fiscal spending mechanically led to a surge in bank deposits at the same time as Treasury- and government-guaranteed mortgage issuance ballooned. Many banks used the surge in deposits to buy duration (particularly mortgages, whose duration increases as rates rise, which worsens the problem).

These policies and the slow reaction to the initial uptick in inflation by the Fed led to significant inflation and eventually a fast tightening. Now many banks have assets with yields well below market funding rates, and their solvency depends on retaining a very cheap deposit base. The events of the last two weeks will make that much more difficult to manage. The Fed has done an admirable job of providing liquidity to stop the deposit run, but that funding—and any private sector funding that banks attract as they wean off the Fed—comes at market rates that are hundreds of basis points above the 1.3% average cost of funds banks enjoyed just a few months ago. As this happens, banks whose deposits reprice quickly will be in a zombie-like state. They won't fail quickly, but they will bleed for years unless the Fed cuts rates. For the Fed, cutting rates fixes the bank problem but makes the inflation problem worse; hiking rates fixes the inflation problem but just worsens the issue for the banks.

In this multipart series of research on the key takeaways from the past week, we break down what this banking crisis will mean for the economy and markets going forward:

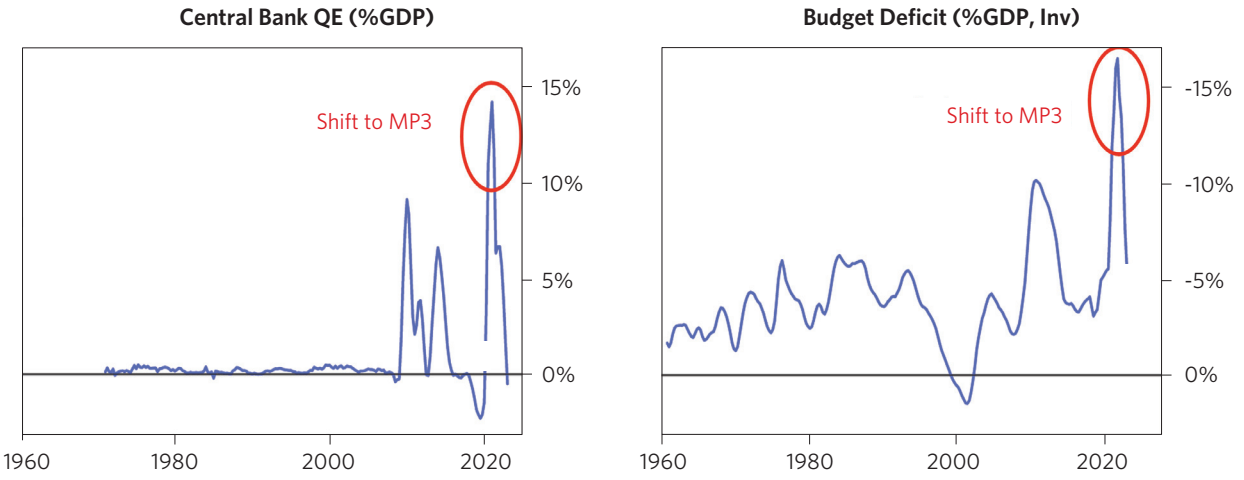
- **In today's research, we share our map of the flows that occurred during the recent bank run** and our takeaways on their significance. In the past week, we saw the Federal Reserve expand lending to banks by $305 billion (only $12 billion in the new Bank Term Funding Program facility) and the quasi-public Federal Home Loan Bank System lend $125 billion. It appears to us that **a relatively small number of institutions in duress are getting a large portion of their cheap deposit financing replaced by lender-of-last-resort financing at market rates** (the Fed charges 4.75%, the FHLBs a bit more). **The acute run does not appear to be widespread so far**, though many institutions likely have funding repricing quickly. To us it looks like 85% ($250 billion) of the Fed emergency lending went to just three institutions, two of them already failed. Our takeaway is that **policy makers' targeted tools clearly remain powerful and (as is often the case) don't need to be used all that much** to be effective. Emergency liquidity facilities and the choice to cover uninsured depositors seem to have restored confidence for now. Sunday's expansion of swap lines is a further move in the direction of cutting off more chaos. But we'd hesitate to opine that the crisis is behind us, as bank runs are inherently unstable. And, importantly, **policy makers can stop a bank run, but unless the Fed cuts rates, they can't stop the repricing in banks' funding costs** that has been slowly going on for some time and accelerated this week. Finally, we think that **the increase in liquidity ("money printing") from the Fed expanding its balance sheet is not all that big of a deal** in terms of the aggregate stance of policy.

- **In tomorrow's research, we will go through the impact of these developments on bank business models and profitability.** The problem for the US banking system is not a bank run (which policy makers have already addressed with emergency liquidity) but rather that the repricing of deposits will put material pressure on bank profits and thus their ability and desire to make loans and buy bonds. The aggregate hit to banks will range from modest to extreme depending on how fast deposits reprice, with many banks seeing significant profit declines and a portion of the system facing insolvency or zombification. This shock is likely to have a number of consequences. Banks' desire and ability to provide credit were already weakening and will weaken further. Pockets of banks would be hit hard, such as regional banks focused on CRE or business lending. Banks are unlikely to take more duration risk anytime soon, either on their own initiative or due to new regulation, which will make it even harder to absorb all the bonds being sold. And, finally, it worsens the Fed's dilemma, forcing it to choose between easing rates to help the banking system at the risk of exacerbating inflation or tightening more but risking a banking collapse.
- **In Wednesday's research, we will examine the key question for the Fed (which is delivering its rate decision that day): how big will the impact of the banking crisis be on the broader economy?** Banks under stress provided around 0.9% of GDP in lending to the economy over the past five years (a bit less in the past year). We imagine that provision will shrink further as those institutions tighten lending standards. We think this makes a significant disruption of credit to parts of the economy likely, especially areas like CRE & VC-backed tech that were very dependent on their relationships with smaller lenders. Large banks do remain in good shape, and the US financial system has a number of pipes to get around the banking system (e.g., corporate bond markets, non-bank lending, GSEs), but we still expect bumpiness. Conditions already looked tight and likely to produce a slowdown in growth before last week, and the current crisis makes things look a bit worse than that. The one stimulative offset is the substantial change in rate markets, especially if the Fed eases as is now discounted.

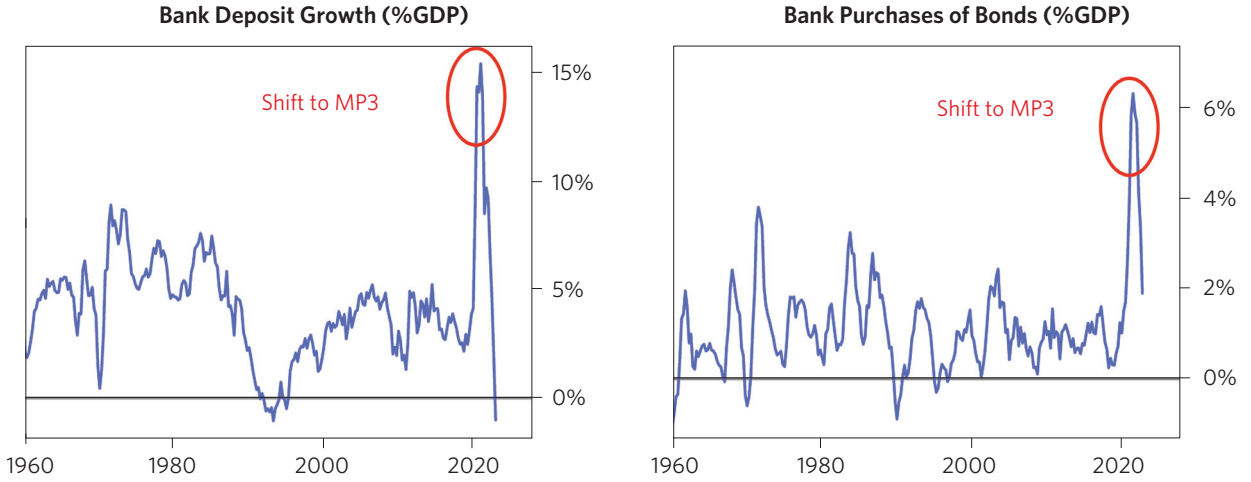
In the remainder of this research, we put the flows of the past week in the context of past decades, walk through the details of how the bank run played out, and discuss the significance of those money flows.

## The Flows of the Past Week in the Context of Past Decades

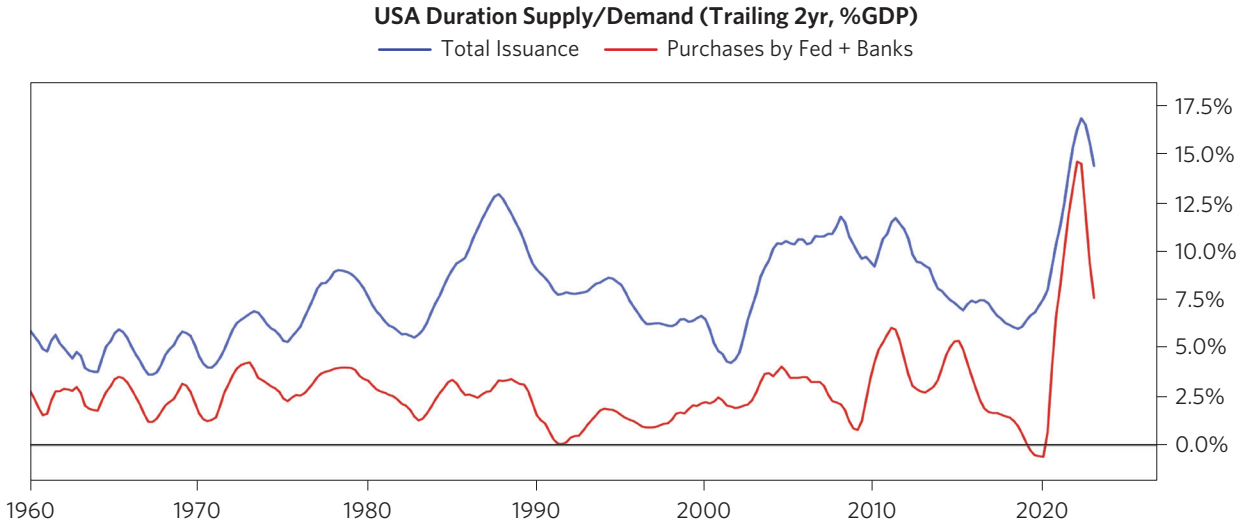
Coming out of the pandemic, the Fed and the Treasury combined to do a massive coordinated stimulation of the economy. Interest rates went to 0%, the Fed printed $4.8 trillion in its round of QE, and the federal government ran budget deficits of 10-15% of GDP, much of it in direct transfers to households and businesses.



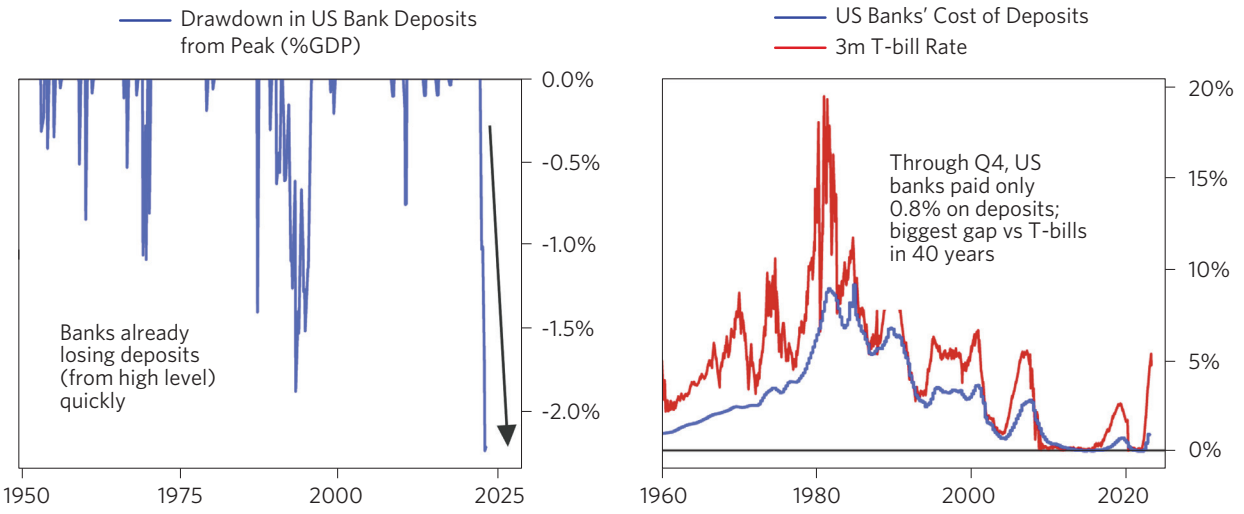
Printing money and handing it to households and businesses resulted in a large influx of deposits to banks. In 2020 and 2021, US banks gained $5.4 trillion in checkable deposits, which cost them virtually nothing. With cash yielding 0% and very few loans to make, banks made a huge trade to purchase bonds, buying $2.4 trillion in those two years.




Even with bond issuance running at secular highs, the rate market was able to easily clear at low yields as the combination of the Fed and banks bought the entire market. That support is now long behind us as the Fed does QT and banks are very unlikely to buy bonds in the near future.




As the Fed started hiking rates and pulling cash out of the system last year, banks started losing deposits. Deposit rates rose to stem the outflow in the second half of the year, with banks' average deposit-funding cost rising from near 0% in the second quarter to 0.8% in the fourth quarter, a large increase but still way below the 5% T-bill yield easily available to savers. To the extent banks couldn't retain the deposits, they had to replace them with market-rate borrowings, largely from the Federal Home Loan Bank System, where they can borrow against their mortgage books with around a 5% cost of funds.




## How The Bank Run Played Out: Flows of the Past Week

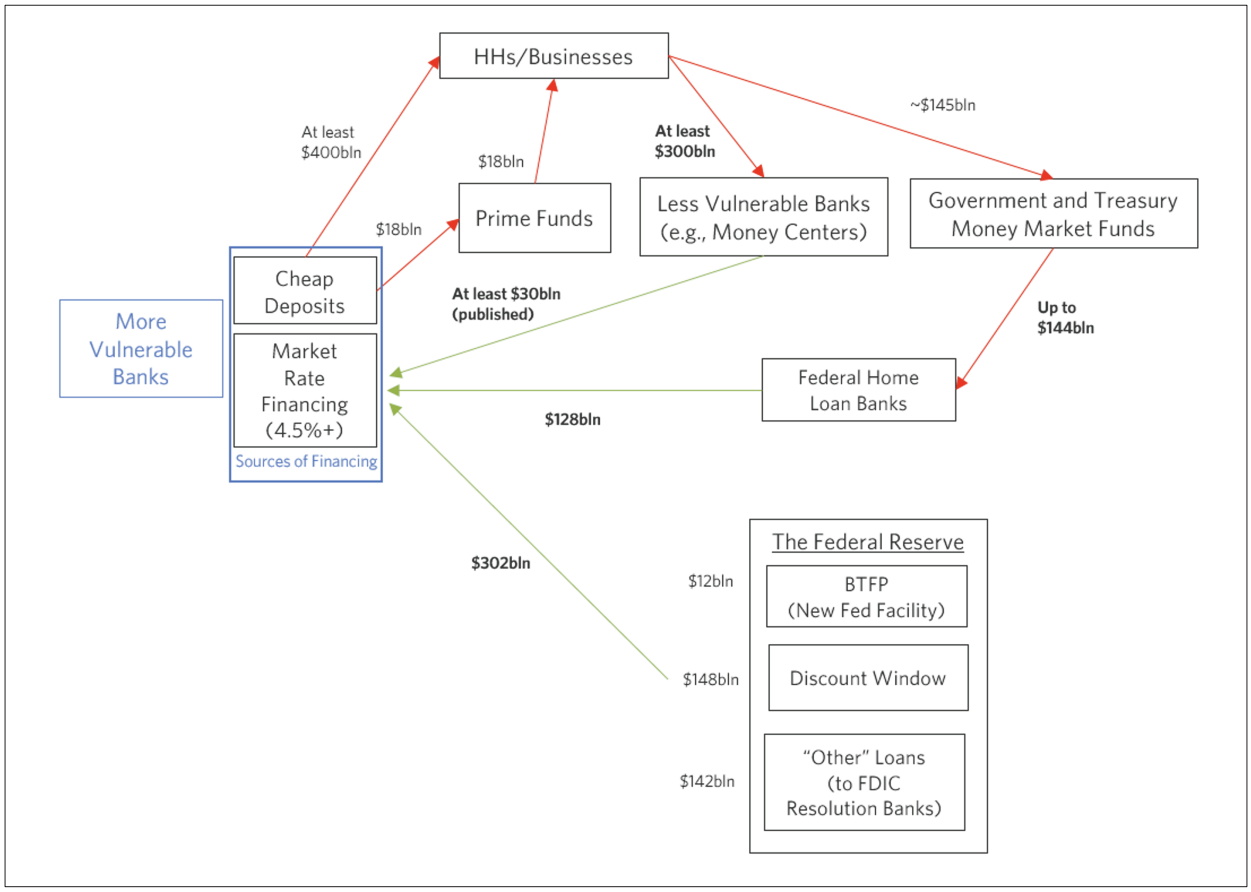
In the past week, the move of deposits out of weaker banks became a full run. As part of our investment systems, we track and model all sorts of money flows around the world, and at this point we're getting the reporting to begin to piece together the key parts of the story, which we summarize in the next diagram. We count at least $400 billion of deposit funding exiting vulnerable banks between March 8 and March 15, some of it headed into money market funds and the rest into less vulnerable banks. This has been replaced by a large amount of support from the Fed and the Federal Home Loan Bank System.

We'd put this as a conservative floor on the amount of money that moved as we won't know the full extent to which banks were able to fight the run by raising their deposit rates or by getting market-price funding from the private sector.

**Mechanics of the March 2023 Bank Run**

**All $ Amounts (USD) Reflect Most Timely Observable Flows from the SVB Failure Through Week Ending March 17**

Money out of more vulnerable banks  Money into more vulnerable banks



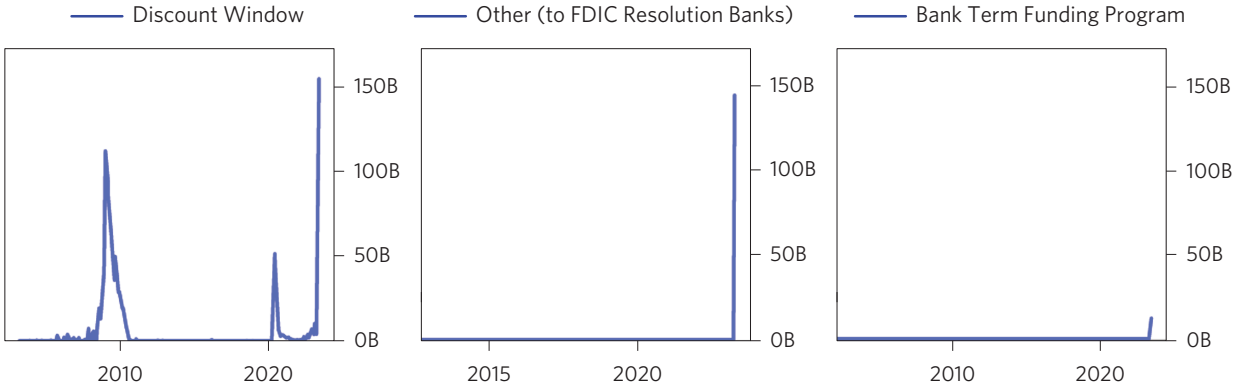
While this amount of public support is reasonably large, it seems to be concentrated in a small number of institutions while the rest of the system isn't getting all that much. To us, that means that either the bank run has so far remained fairly contained or that most at-risk banks in the system (those with a large number of uninsured deposits) were able to deal with it via market mechanisms rather than turning to public support. By triangulating the more detailed Fed system's balance sheet, the amount of liquidity extended by district (almost all of which was provided by the 12th District in San Francisco and the 2nd District in New York), and First Republic's public reporting to have taken $109 billion from the Fed, we calculate that around $250 billion of the $300 billion provided by the Fed was given to just three institutions, of which two are the failed Silicon Valley and Signature banks.

**Liquidity Provided by the Federal Reserve, March 8–15, 2023 (USD, Bln)**

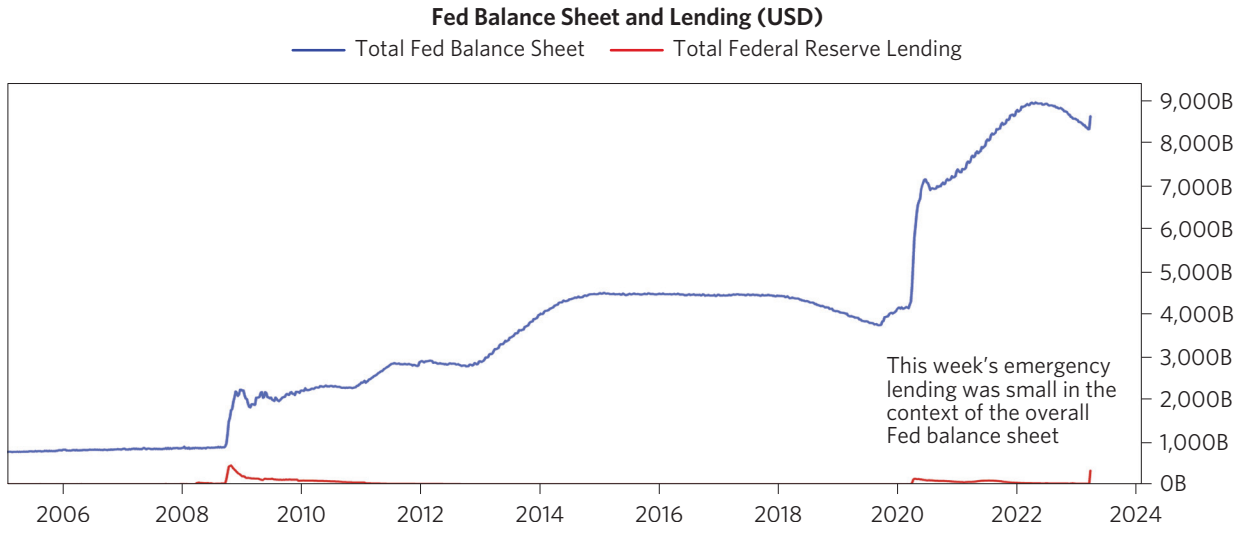
| **All Banks** | **303** |
|---|---|
| Banks Taken Over by the FDIC (SVB + Signature) | 143 |
| First Republic Bank (Their Reporting) | 109 |
| All Other Banks | 51 |
| | |
| Reference: | |
| Liquidity Provided as %Total Deposits at FDIC Insured Banks | 1.70% |
| Liquidity Provided as %Deposits Above $250,000 FDIC Limit | 2.90% |

These charts break down the Fed liquidity provided by facility. The newly unveiled BTFP only extended $12 billion of loans to banks, which we tentatively see as a sign of strength. For banks with large mark-to-market securities losses facing a run, the BTFP's feature of allowing them to borrow against the par value of their bonds is attractive, so we are processing the small usage as either a sign that there isn't that big of a problem or that banks in stress would rather use market mechanisms than go to the Fed to avoid scrutiny (and that the problem is small enough to allow for that).

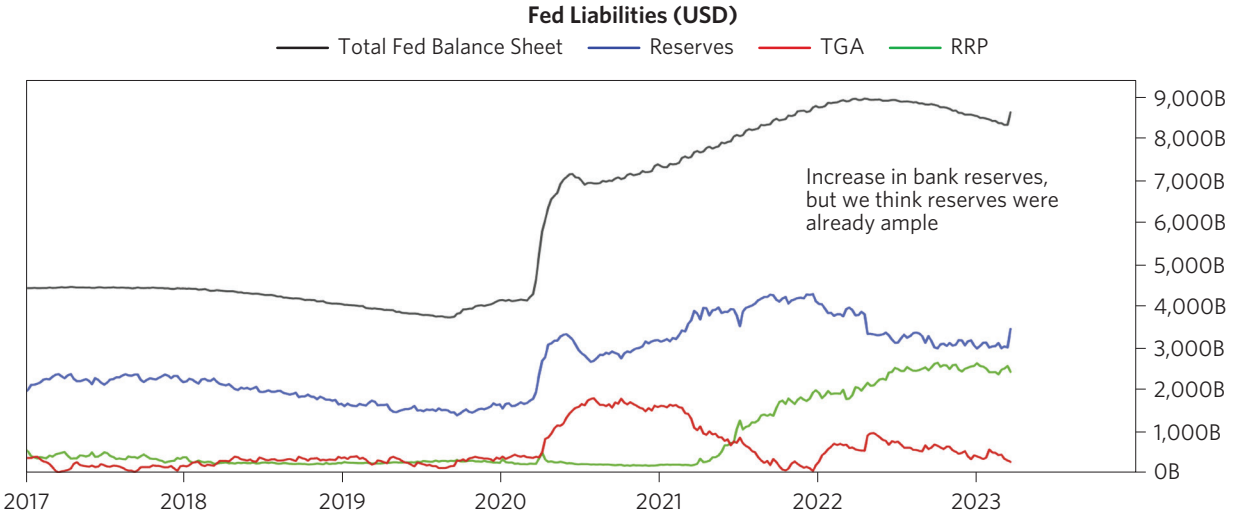
**Fed Lending Programs Used in This Bank Run (USD)**



We don't process this week's developments on the Fed balance sheet as meaningfully adding stimulation via "stealth QE" or an "undoing of QT." It is true that the amount in question is a few months' worth of the Fed's ongoing QT sales, but it is better thought of as offsetting a negative (of a banking sector implosion) than adding a positive. Lending money to banks is different from QE/QT in that it doesn't involve the Fed transacting in long-duration securities that force portfolio reallocation and reinvestment decisions by investors that have large proactive impacts on risk-asset markets. And finally, the amount of money printed this week is not all that large in the context of the full Fed balance sheet, which is over $8 trillion.




On the liability side, this action has resulted in bank reserves increasing, but our take is that the aggregate level of reserves was ample before the bank run started and that the addition of some more doesn't materially change that picture. Of course, the distribution of reserves (bank cash) matters, but the additional reserves that have been put into the system are very likely sitting with large banks that were the beneficiaries of the run and already had good liquidity positions.



Another interesting development of the week was the consortium of banks depositing $30 billion at First Republic Bank as uninsured depositors. This is a statement designed to shore up confidence in the system by other depositors and is a logical move by the big banks, who have no interest in a bank run continuing even if they are not directly at risk (not least because they are responsible for paying a large share of FDIC insurance premiums). But the more important point we'd make about FRC is just how fast it went from paying nothing to paying market rates for its liabilities and what that means for its business. In 2022, it had an extremely low cost of funds, paying 0% on about 40% of its liabilities and under 1% on the rest to support assets earning around 3% (largely fixed rate and long duration). This week, it reported that it got $30 billion from the consortium, $109 billion from the Fed, and $10 billion from the FHLBs, **all at market rates** (probably a bit under a 5% rate in aggregate). When we pencil this out, we see FRC producing losses that will eat through its capital unless something changes (which it has now bought time to figure out). This is a broad theme we'll explore more in tomorrow's research. (To be clear, we aren't experts on this company and don't have a view on whether the decline in its share price adequately reflects these developments.)

**First Republic Bank**

2022 Balance Sheet

| | (USD, Bln) | Rate |
|---|---|---|
| Assets | 196 | 3.13% |
| Interest-Bearing Liabilities | 103 | 0.86% |
| Non-Interest Bearing Liabilities | 76 | 0.00% |

Very low cost of funds in 2022

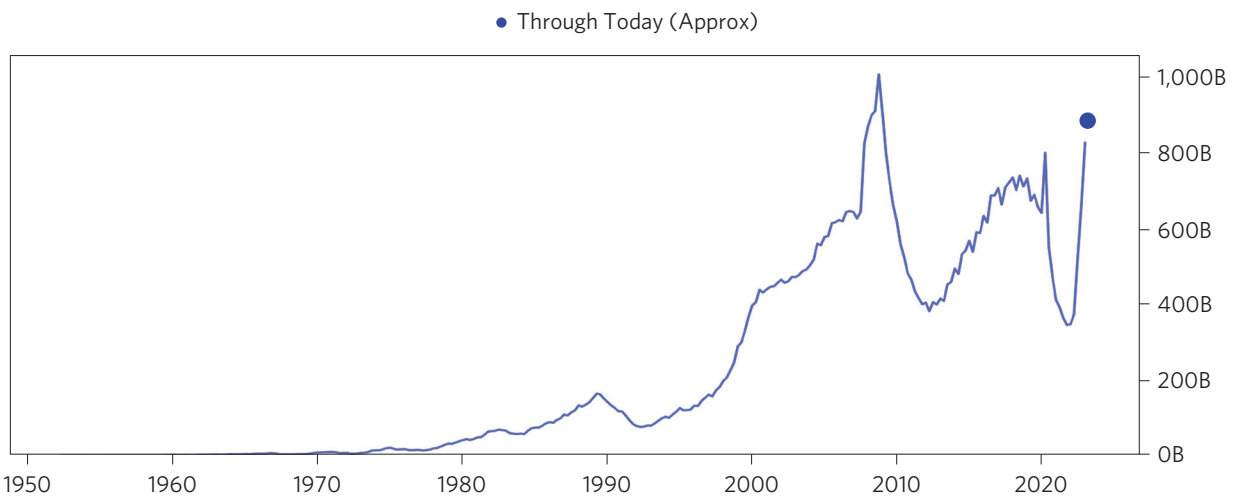
New Funding Reported on March 16

| | (USD, Bln) | Rate |
|---|---|---|
| Deposits from Major Banks | 30 | "Market Rates" |
| Fed | 109 | 4.75% |
| FHLB | 10 | 5.09% |

Most of balance sheet replaced with much more expensive funding

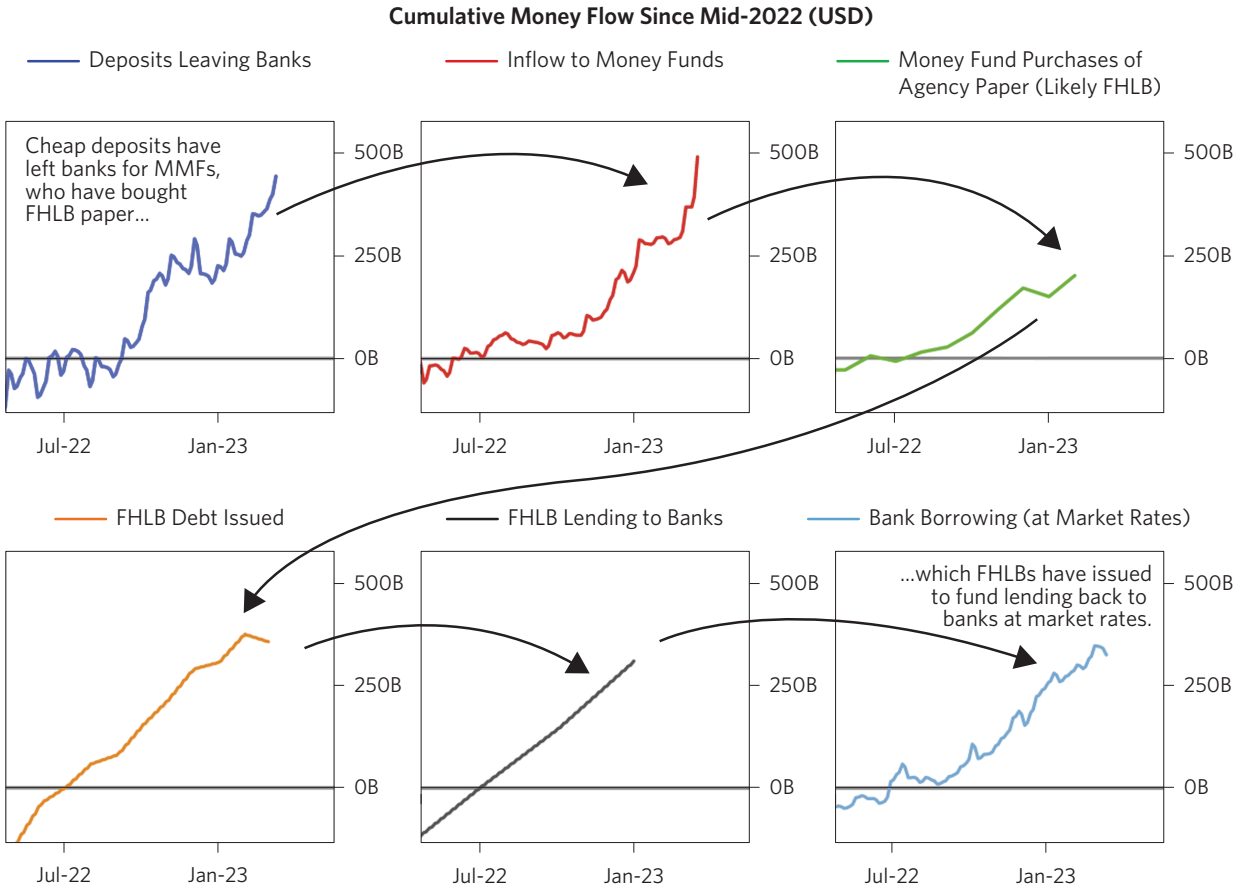
Finally, the Federal Home Loan Bank System has been playing a large role in supporting banks over the past six months as they lost deposits, and based on its huge issuance of paper this week (which it uses to fund its bank support) we think it was actively supporting banks to the tune of well over $100 billion. The FHLBs are a network of 11 government-sponsored entities that provide market-rate loans to banks secured by their mortgages, and they played the "lender-of-second-to-last-resort" role in 2008 and 2020, similar to their role today.

**FHLB Advances to Banks (USD)**



The FHLBs finance their loans to banks by issuing notes and bills that are largely purchased by money funds, which are investing the money of households and businesses. That introduces the curious dynamic where a household takes a 0% deposit out of a bank, gives it to a money fund (that pays them 4.5% or so), who gives it to the FHLB (that pays them 4.75% or so), who gives it to the bank for 5%. So in one sense the bank is getting the exact same money back that left, just paying 500 basis points more for it with the household the major beneficiary.

Indeed, we've seen that this trade has been happening on net for some time: in the past six to nine months, banks have borrowed about as much—mostly from the FHLBs—as they've lost in deposits, and that amount has roughly matched the flow of households into government money market funds and the reinvestment of money funds into agency (likely FHLB) paper. Of course there is a lot more going on, but this is an interesting microcosm into how banks' cheap funding gets switched out for much more expensive funding.



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