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# Fed Sentinel

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## Breaking Down the Federal Reserve Balance Sheet

Not for the first time over the last 18 months, the buzz among financial market participants around a near-term tapering and/or end to the Federal Reserve's balance sheet reduction has picked up this month. This time, there has actually been a little bit of noise out of the Federal Reserve system itself, lending additional credence to the speculation. However, there still has been no signal that a change in balance sheet strategy is coming any time soon, and the arithmetic still indicates that the Fed has a very long way to go to get liquidity back to normal levels.

### A Brief History

At the outset of the pandemic in 2020, the Federal Reserve cut its policy rates to the zero bound quickly and then began to infuse massive amounts of liquidity into the financial system. At first, the main objective was to bolster financial markets. Recall that for a while, the Fed was buying $75 billion of Treasuries per day to relieve market participants of illiquid off-the-run positions that were being offered for sale by investors trying to bring their exposures down quickly. Eventually, once financial markets stabilized, the Fed's rationale evolved to providing liquidity to prop up the economy, the classic Quantitative Easing formulation.

Amazingly, the Fed continued to buy securities at a significant pace through March 2022 before finally ending the purchases. From the time inflation began to surge in the spring of 2021, the Fed bought roughly an additional $750 billion in Treasuries and $500 billion in agency MBS.

The Fed made a relatively quick turnaround, commencing runoff in July 2022. Since the fall of that year, runoff has been about $60 billion per month for Treasuries and a monthly cap (which has not been even close to binding) of $35 billion for MBS.

The current level of the Fed's securities portfolio is a bit less than $7.2 trillion, down about $1.3 trillion from the high water mark.

### End Game Chatter

Financial market participants on both the buy and sell side understandably prefer more liquidity to less. So, there is a natural predisposition to favor a large Fed balance sheet that offers ample excess liquidity. This bias has been exhibited in the commentary around the Fed's balance sheet strategy. After the Fed expanded its balance sheet by nearly $5 trillion over two years, after only a few hundred billion dollars' worth of runoff in the fall of 2022, some money market players began suggesting that the Fed would need to stop soon, because the level of bank reserves was falling toward the minimum comfortable level. The evolution of bank reserves can be seen in Chart 1.

**Chart 1: Bank Reserve Balances**


Source: *Federal Reserve, Bloomberg.*

Chart 1 shows that bank reserves did fall substantially in 2022, sliding from a high of over $4 trillion to around $3 trillion by the fall. Some analysts were arguing at the time that the Fed would need to cut short their balance sheet reduction to prevent a liquidity crisis in the banking system. However, one look at the rest of the Fed's balance sheet should have effectively halted that talk, as the balance sheet had only been reduced by a few hundred billion dollars at that point.

The primary development at that time was that the form of liquidity was shifting. Depositors were slowly realizing that bank savings account rates were incredibly unattractive relative to alternatives such as money market fund yields. This gap reflected the fact that the banks were still awash in liquidity that they did not need or want and thus were willing to keep their deposit rates low and allow runoff.

Thus, Fed liquidity provision was shifting to other places, such as the overnight reverse RP program, which became a favorite parking spot for money market funds, to the tune of well over $2 trillion (see Chart 2). In other words, we were seeing a reallocation of liquidity more than a reduction in liquidity.

## Chart 2: Reverse RP Balances


Source: *Federal Reserve, Bloomberg.*

That speculation died out eventually, as bank reserves leveled off around $3 trillion and Fed officials gave no indication that there was any need to consider altering their strategy.

In recent weeks, the market chatter has picked up again, based on two factors. First, the reverse RP facility has seen a huge outflow, as shown in Exhibit 2, from well over $2 trillion to about $600 billion. A number of money market players have argued that the Fed wants to maintain a significant buffer in the reverse RP program in the event of a disruption that requires the spare cash being parked in the facility, perhaps on the order of several hundred billion dollars. So, the thinking goes, once the reverse RP facility level slides to some minimum level, the Fed would need to stop balance sheet reduction regardless of the overall amount of liquidity provision.

The problem with this reasoning, as was the case in late 2022, is that the Fed should be (and, I believe, is) thinking about overall liquidity levels, not focusing on a single component of that liquidity. In the converse of what happened in late 2022 and early 2023, as RRP balances shrank, bank reserves surged again (refer back to Chart 1) and currently stand at a level (over $3½ trillion) higher than when the Fed began reducing its balance sheet in July 2022. Once again, the story involved a migration of liquidity rather than its elimination. The Treasury issued over $2 trillion in Treasury bills on a net basis in calendar 2023, and money market funds moved a significant portion of their assets out of RRP and into T-bills. Excess liquidity diminished but did not go away.

The recent buzz around balance sheet strategy has also been fueled by the first indication from the Fed itself that it may be time to begin thinking about a change. The December FOMC minutes included this paragraph:

“Participants observed that the continuing process of reducing the size of the Federal Reserve's balance sheet was an important part of the Committee's overall approach to achieving its macroeconomic objectives and that balance sheet runoff had so far proceeded smoothly. Several participants noted that, amid the ongoing balance sheet normalization, there had been a further decline over the intermeeting period in use of the ON RRP facility and that this reduced usage largely reflected portfolio shifts by money market mutual funds toward higher-yielding investments, including Treasury bills and private-market repo. Several participants remarked that the Committee's balance sheet plans indicated that it would slow and then stop the decline in the size of the balance sheet when reserve balances are somewhat above the level judged consistent with ample reserves. These participants suggested that it would be appropriate for the Committee to begin to discuss the technical factors that would guide a decision to slow the pace of runoff well before such a decision was reached in order to provide appropriate advance notice to the public."

The last sentence caught the attention of market participants. It has been interpreted by many as a signal that tapering of runoff will commence within the next few months. However, the sentence merely states that the Fed should begin to discuss which parameters it should be looking at to decide about balance sheet policy so that it can make and announce the eventual tapering decision well before it actually begins to slow the pace of runoff. That is not even a promise that includes a timeframe. And, even if it were, the implication is that the Fed should soon begin to start discussing what to look at so that the Committee can reach agreement when the time comes to make a change. Dallas Fed President Logan repeated this vague language suggesting that the Fed might soon need to talk about what to watch a few days after the release of the minutes (which would strongly suggest that she was one of the "several" participants noted in the FOMC minutes). Shortly thereafter, however, New York Fed President Williams offered a course correction after the Treasury market reacted sharply to the minutes and Logan's speech, noting that the balance sheet was very far from approaching the appropriate size.

## Balance Sheet Arithmetic

In light of all of this, it seems an opportune time to return to the details of the Fed's balance sheet to get a reality check on how far along the Fed might be. Table 1 shows the key components of the asset side of the balance sheet.

### Table 1: Asset Side of the Fed Balance Sheet

| Billions of Dollars | 12/25/2019 | 6/29/2022 (peak level) | 1/17/2024 |
|---|---|---|---|
| Reserve Bank Credit | 4127 | 8877 | 7638 |
| Treasury Securities | 2329 | 5764 | 4724 |
| MBS Securities | 1420 | 2709 | 2432 |
| Loans (Discount Window + PPP Loans + Bank Term Lending Program) | 0 | 22 | 167 |
| Other | 87 | 85 | 87 |
| Total | 4214 | 8962 | 7725 |

Source: Federal Reserve.

Table 2 offers a similar look at the liability side of the Fed's balance sheet.

### Table 2: Liability Side of the Fed Balance Sheet

| Billions of Dollars | 12/25/2019 | 6/29/2022 (peak level) | 1/17/2024 |
|---|---|---|---|
| Currency | 1802 | 2281 | 2336 |
| RRP Foreign Official Accounts | 249 | 261 | 346 |
| RRP Other | 4 | 2227 | 590 |
| Treasury Cash Balance | 352 | 760 | 774 |
| Other Liabilities | 45 | 48 | -88 |
| Bank Reserve Balances | 1648 | 3119 | 3592 |
| Total | 4214 | 8962 | 7725 |

Source: Federal Reserve.

We can use the rows of Table 2 to assess where the proper level for the balance sheet might be. The key benchmark that applies to several of the components is that they should be rising in proportion with the overall economy (though the ratio need not be exactly 1-to-1). Nominal GDP growth from the fourth quarter of 2019 through the fourth quarter of 2023 (I am estimating the Q4 figure) has been about 27½%. Keep that figure in mind.

- Currency. Currency in circulation has risen by about 29½% since the end of 2019, slightly more than the growth in the economy. Nonetheless, for the purposes of our calculations, it seems reasonable to just take the current reading as the "correct" level.
- RRP Foreign Official Accounts. The Fed could in theory pressure its foreign central bank clients to limit their usage of this facility, but I would just take the figure as given.
- RRP Other. This is the piece that has garnered so much attention lately. For the sake of argument, let us assume that the Fed would like to keep a $300 billion cushion in this program, a view that I have heard from a number of market participants, though I am not entirely sold that this is necessary.
- Treasury Cash Balance. Treasury has indicated that it aims to maintain a $750 billion cash balance. The Fed has to take Treasury's decision on the cash balance as a given, so if Treasury moves its target up or down, the Fed would have to provide more or less liquidity accordingly to keep the provision to the private financial system steady.
- Other Liabilities. This is not especially relevant to the balance sheet level discussion, but I could not resist including it because it underpins a point that I have made in prior writing that I do not think many understand. This line item reflects the fact that the Fed is running its operations at a big loss. To pay the interest due on bank reserves and RRP above and beyond what its portfolio is earning, the Fed has to print money. For every billion dollar of losses, the Fed adds another billion to bank reserves, a dynamic that accounts for over $100 billion in bank reserve creation over the past 18 months. Call it the Fed's dirty little accounting secret.
- Bank reserves. Using our nominal GDP benchmark, a 27½% increase in bank reserves from the end-2019 level would be about $2.1 trillion. Let's play it safe and figure that given stricter bank regulation, banks are demanding a higher level of bank reserves. I have seen estimates ranging from $2½ trillion to as high as $3 trillion. I could make case for a lower figure based on the GDP comparison, but let's use $2.7 trillion just to be safe.

Tallying it all up, Table 3 repeats Table 2 but adds a column to reflect the "proper" levels that are discussed just above. The key assumptions and the result are in red.

## Table 3: Liability Side of the Fed Balance Sheet

| Billions of Dollars | 12/25/2019 | 6/29/2022 (peak level) | 1/17/2024 | Proper Levels |
|---|---|---|---|---|
| Currency | 1802 | 2281 | 2336 | 2336 |
| RRP Foreign Official Accounts | 249 | 261 | 346 | 346 |
| RRP Other | 4 | 2227 | 590 | 300 |
| Treasury Cash Balance | 352 | 760 | 774 | 750 |
| Other Liabilities | 45 | 48 | -88 | -88 |
| Bank Reserve Balances | 1648 | 3119 | 3592 | 2700 |
| Total | 4214 | 8962 | 7725 | 6344 |

Source: Federal Reserve.

Despite being generous (in my estimation) at every turn, the conclusion of our exercise is that the Fed's balance sheet is still too large by about $1.4 trillion. Depending on how the regulatory regime evolves, I believe that one could plausibly argue that the proper level for the balance sheet is actually noticeably lower, as it is not obvious that bank reserves need to be so much larger in relation to the economy than they were in 2019 (it could also be said that, with a standing repo facility in place, there is no special reason why the reverse RRP facility needs to be much above zero in equilibrium). So, the proper balance sheet level could plausibly be well over $1½ trillion or even approaching $2 trillion below the actual current reading. In any case, keep in mind that total balance sheet reduction to date has only been about $1¼ trillion, so the gap remains massive.

As time passes, the proper level of the balance sheet should grow along with the economy. For the sake of argument, the proper level a year from now might be somewhere in the neighborhood of 5% higher, roughly tracking the projected advance in nominal GDP, i.e., an extra $300 to $350 billion. So, if we are solving to getting to the right level by, say, the end of 2024, the amount of balance sheet contraction would need to be close to $1 trillion, at a minimum.

Referring back to Table 1, we might expect the level of Fed loans to drop back closer to zero, as the Bank Term Funding Program is scheduled to expire in March. Thus, the amount of securities runoff needed to get the balance sheet right sized in a year's time might be up to $150 billion less than the overall gap. In that case, the minimum amount of balance sheet runoff needed over the next year would seem to be in the neighborhood of $850 billion. The recent pace of MBS runoff (about $15 billion per month) suggests that the Fed may not get much more than $150 billion from this source of reduction in 2024. That leaves a minimum of $700 billion (and, more realistically in my view, probably above $1 trillion) of Treasury runoff. Thus, the arithmetic suggests that we are unlikely to see tapering of Treasury runoff before late in 2024, with balance sheet reduction potentially ending some time in 2025. My own projections at this point are that tapering begins in January 2025 and runs through all of 2025.

## Could the Market Say Different?

While this arithmetic is straightforward and compelling, there is an alternative scenario where the Fed is driven to end QT earlier. If stress develops in the repo market well before we get to the desired balance sheet level, then the Fed would likely be compelled to stop. The Fed's pain threshold for sitting by and allowing stress in the financing markets appears to be minimal, so policymakers could flinch at the first sign of any trouble. A number of financial market participants got very excited when repo rates jumped over the turn of the year, which was viewed by some as a sign that we are nearing the end for QT. However, the arithmetic strongly suggests otherwise, and the turn of the year looks like an anomaly that cleared up within a few days in early January. To be considered significant, any repo market pressure would have to be persistent, not a function of month- or quarter-ends. Given the degree of excess liquidity still sloshing around in the system, I doubt we will see this any time soon.

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