

Research Briefing | US

Fed's path to balance sheet normalization

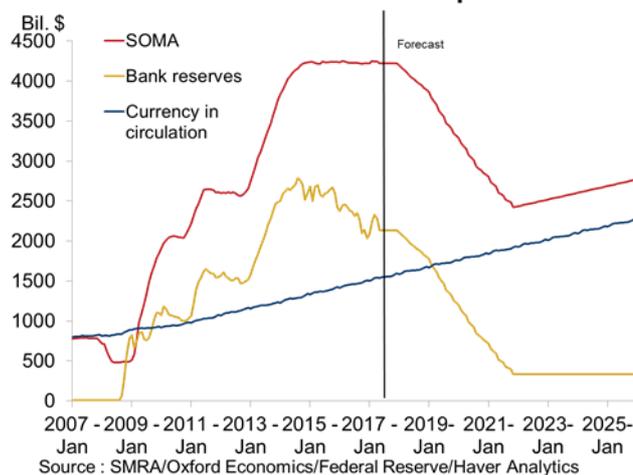
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- Assuming that the current political chaos does not greatly dampen economic activity, we expect the Fed to start reducing the size of its balance sheet in Q4 2017. The Fed has signaled it will allow Treasury and mortgage-backed securities (MBS) debt to “passively and predictably” roll off its balance sheet. We look for the Fed to very gradually start by allowing only 50% of maturing Treasuries and MBS to roll off in the first year. Thereafter we expect a full ceasing of reinvestments until balance sheet normalization is reached in 2021.
- Balance sheet normalization is likely reached in 2021, with the Fed's System Open Market Account (SOMA) shrinking to \$2.4 trillion and bank reserves falling to \$300-\$400 billion, from \$4.25 trillion and \$2.2 trillion respectively today.
- It is not feasible for the Fed to return to the pre-crisis targeting of the fed funds rate. Reserve balances held at the Fed are likely to exceed \$300 billion after normalization, far above the average \$8 billion that prevailed prior to the crisis. This, in conjunction with the increased variability of reserve balances due to regulatory changes suggests monetary policy will continue to be conducted under the current rate-setting system.
- As interest rates rise, the Fed's net interest income gains will decline and there is even the risk of losing money as it incurs rising interest payments on excess reserves. This engenders political concerns for the Fed.
- We believe the Fed will balance the political and market risks by first phasing out debt reinvestments by 50% for the first year, starting in Q4 2017.
- Beyond the normalization of the balance sheet (projected to be reached in 2021), the SOMA will once again expand in tandem with the growth in currency in circulation.

US: Balance sheet normalization path



We expect balance sheet normalization to be reached by 2021. The SOMA and bank reserves shrink in tandem. Post-normalization, currency in circulation will drive the growth of the SOMA.

The Fed likely starts to pare its balance sheet starting Q4 2017

Recent comments from Fed officials and the minutes from the [March 14-15 FOMC](#) policy meeting show that policymakers are moving swiftly to develop a comprehensive plan to normalize the balance sheet. Many Fed officials indicate a change to the reinvestment policy would likely be appropriate later this year. We anticipate that as early as the June 13-14 FOMC policy meeting Fed officials could unveil their plans to shrink the size of the balance sheet. This should allow Fed officials additional time to finalize their plans, provide advance notice to the markets, and allow Chair Yellen to explain the details at the June post-meeting press conference.

The FOMC could then begin tapering debt reinvestments in Q4 2017, after raising the fed funds target range by 25 basis points in both June and September to 1.25%-1.5%. This level would be consistent with Fed officials' view that the funds rate should be at least 1% or 2% as it would indicate that rate normalization is well under way.

As we have [written previously](#), in addition to considering fundamental factors to determine the timing, the FOMC might be influenced by the fact that Chair Yellen's term ends in February 2018. If Yellen is not reappointed, the FOMC does not know who will replace her. If it is someone with strong opinions regarding Fed balance sheet policies—such as an individual who opposed the Fed's actions during the crisis—he or she might seek to undo those decisions in a fashion that could be disruptive to both the financial markets and the economy. This acts as a catalyst for the FOMC to at least have a balance sheet plan in place before Yellen's term ends.

But exactly when the FOMC will accomplish balance sheet normalization depends on whether the FOMC decides to either:

- 1) return the balance sheet to a size whereby the NY Fed's Open Market Operations desk returns to a reserve supply/demand dynamic and the fed funds rate is targeted in a pre-crisis fashion;
- OR
- 2) shrink the balance sheet, whereby the system is still left with a substantial volume of reserve balances, and short-term interest rates are managed using the current system of floor rates including the reverse repo program (RRP) and the interest on excess reserves (IOER).

We expect Option 2 will be the path favoured by the FOMC, as we do not believe it is feasible for the Fed to return to the pre-crisis targeting of the fed funds rate. Reserve balances held at the Fed are likely to exceed \$300 billion—far above the pre-crisis average of \$8 billion. This, in conjunction with the increased variability of reserve balances stemming from such regulatory changes as the payment of interest on reserve balances in October 2008, and banks' liquidity coverage ratios in January 2015, will make targeting the Fed funds rate in a narrow range very imprecise.

Another factor determining when the balance sheet normalization is achieved and the size of the SOMA is whether the FOMC elects to fully stop reinvestments, or taper reinvestments, or whether outright sales should occur. The latter point hinges on a decision to either allow securities to mature and roll off the Fed's balance sheet passively, or to actively sell securities to the secondary bond market.

A related consideration is how quickly the Fed can return to a "Treasury Only" balance sheet. The Fed has never been comfortable holding MBSs, yet is the largest owner of them (holding one-third of all outstanding mortgage-backed bonds). But selling MBS

It is not feasible for the Fed to return to the pre-crisis interest rate targeting regime.

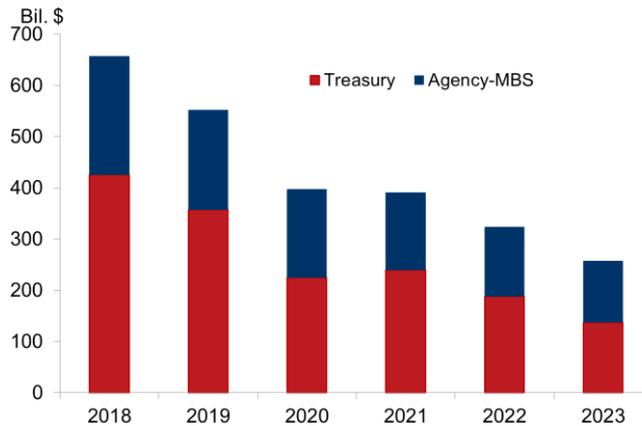
The bulk of balance sheet reduction will come via reduced holdings of Treasuries.

outright would be hugely disruptive to the mortgage market and likely send mortgage yields soaring. To avoid another “taper tantrum” as in 2013, Fed officials have advocated for the “passive and predictable” approach of allowing both Treasuries and MBS to mature and roll off as laid out in the Fed’s [Policy Normalization Principles and Plans](#) document from September 2014.

That means most of the downsizing in the years immediately ahead will be via the Fed’s holdings of Treasuries. As shown in Chart 1, the bulk of the Fed’s holdings of Treasuries mature during 2018–2023, peaking in 2018.

Chart 1

US: Maturing debt held on Fed’s SOMA



Source : SMRA/Oxford Economics/Federal Reserve/US Treasury

The bulk of the balance sheet downsizing in the next several years will come from the maturation of Treasury debt. The amount of maturing MBS stems from amortizations and pre-payments.

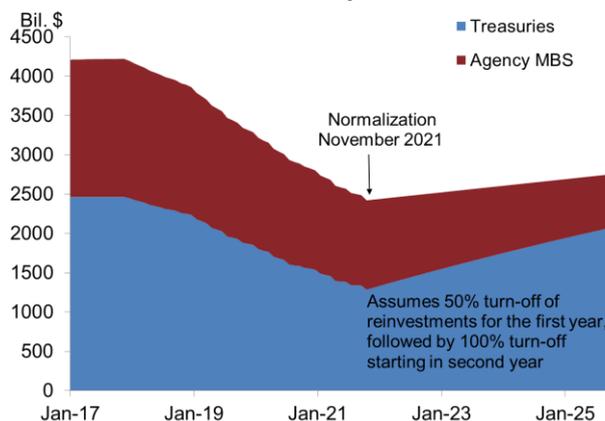
We look for the Fed to start balance sheet normalization in a very gradual manner by allowing only 50% of maturing Treasuries and MBS to roll off in the first year. Thereafter we expect a full ceasing of reinvestments.

In addition to being “passive and predictable,” in our base case we expect the FOMC to start the balance sheet normalization in a very gradual manner by only allowing 50% of the debt securities to roll off in the first year (Q4 2017–Q3 2018), before fully ceasing reinvestments starting in Q4 2018. Abruptly ceasing reinvestments of maturing Treasury and MBS debt could risk triggering financial market volatility.

Under this base-case scenario (which we assign 60% probability) normalization occurs in November 2021, with the SOMA totalling a little over \$2.4 trillion, bank reserve balances just above \$300 billion and the overall balance sheet slightly higher at \$2.75 trillion (Chart 2). For simplicity, we assumed all partial reinvestments are in securities that mature beyond 2025. This represents a change from the Fed’s current reinvestment policy.

Chart 2

US: SOMA normalization path



Source : SMRA/Oxford Economics/Federal Reserve

In our base-case scenario, balance sheet normalization is reached in November 2021. The SOMA would total about \$2.4 trillion, and bank reserve balances held at the Fed would be a bit above \$300 billion.

Balance sheet normalization is likely reached in 2021, with SOMA shrinking to \$2.4 trillion

Currently, the SOMA stands at \$4.25 trillion, the overall balance sheet is \$4.43 trillion, and excess reserves are at \$2.2 trillion. This is significantly larger than in 2007, when the SOMA was \$754 billion, the balance sheet \$848 billion, and bank reserves \$9.3 billion.

Table 1

Evolution of Fed's SOMA and bank reserves			
Bil. \$	Pre-Crisis - Dec-2007	Current May-2017	Normalized - 2021
SOMA	754	4245	2400
Total balance sheet	848	4433	2750
Bank reserves	9	2203	350

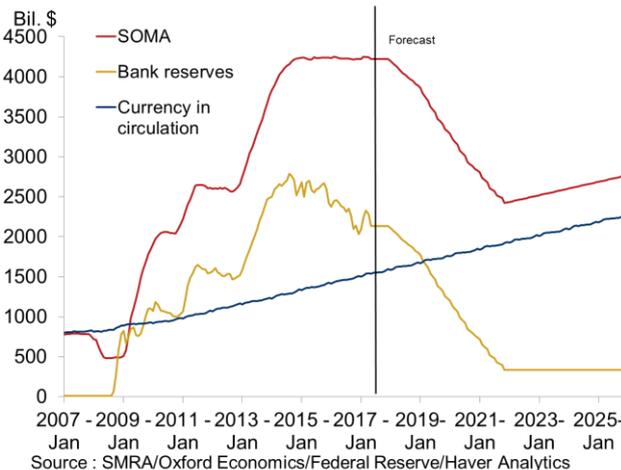
Source: Federal Reserve/Haver Analytics/Oxford Economics

Post-normalization, currency in circulation will once again be the main driver of SOMA

Pre-financial crisis, the growth in currency in circulation had been the primary determinant of the size of the SOMA. Massive asset purchases during the crisis, however, rendered a SOMA volume well above that associated with the growth of currency in circulation. Post-normalization, the trend in currency should again be the key factor driving the SOMA's size. Allowing the balance sheet to rise in line with growth in currency in circulation avoids an unwarranted decline in bank reserve balances. Additionally, Treasury issuance will need to rise to offset the decline in the Fed's holding of Agency MBS stemming from amortization of principal and prepayments. (Chart 3).

Chart 3

US: Balance sheet normalization path



We expect balance sheet normalization to be reached by 2021. The SOMA and bank reserves shrink in tandem. Post-normalization, currency in circulation will drive the growth of the SOMA.

Alternative normalization scenarios

The minutes from the [March 14-15 FOMC](#) policy meeting show that some Fed officials believe an immediate ceasing in debt reinvestments could be easier to communicate and lead to faster balance sheet normalization. This is not our central expectation, as it would require Fed officials to deem the markets prepared for an immediate ceasing. But political considerations could drive the Fed to forgo an initial period of phasing out reinvestments.

As an example of political considerations, Raymond Stone from SMRA has [written previously](#), the Fed may take into account the risk of incurring persistent losses as the IOER is increased (see Box 1 on page 7). This risk could be diminished if the size of the SOMA is reduced relatively quickly in comparison with the impending increases in the IOER. The basic concern is that losses (which would result in the suspension of remittances to the Treasury Department) could become a political "hot potato," inviting unwanted Congressional intrusion and compromising Fed independence.

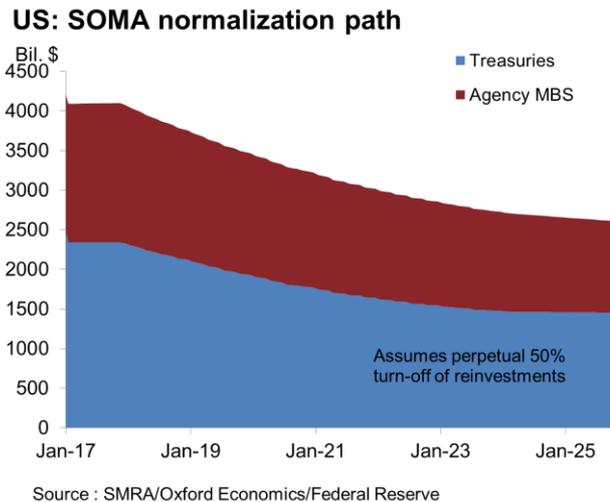
As interest rates rise the Fed could risk losing money as it incurs higher interest payments on excess reserves

Moreover, a disproportionate share of the interest paid on reserves has gone to a relatively small number of foreign banks. At one time a handful of foreign banks received over 50% of all interest paid on reserves, more recently it has been about 36%. In a politically charged environment characterized as "America-First," this may be deemed unacceptable. If remittances made to the Treasury are diminished or suspended, while interest on reserve balances to foreign banks is sustained, Congressional backlash could result.

In our second scenario, we assume an immediate shutdown of reinvestments (30% probability). Over time it does not greatly alter the path of normalization. The Fed would reach balance sheet normalization a little earlier, in April 2021, with the SOMA totalling \$2.34 trillion and Fed reserve balances at about \$275 billion.

We also ran a third scenario (10% probability) wherein the reinvestment valve is turned down to 50%, and remains unchanged through 2025. Under this scenario, normalization doesn't occur until after the forecast horizon of 2025. As of December 2025, the SOMA would total over \$2.7 trillion and Fed bank reserve balances would remain lofty, at \$640 billion (Chart 4).

Chart 4



In our third scenario, we assume the reinvestment valve is turned down to 50% and remains unchanged through 2025. Under this scenario balance sheet normalization is not reached until after the forecast horizon of 2025.

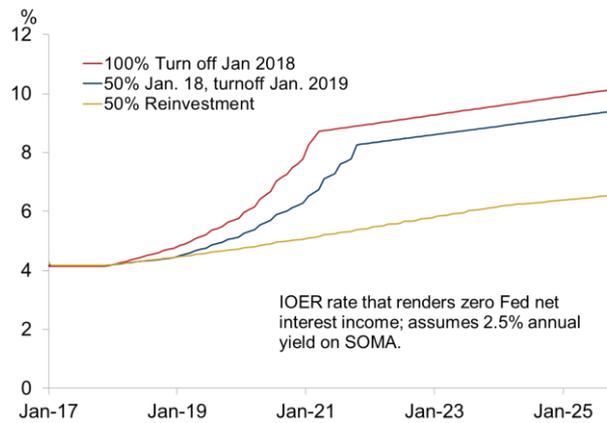
Scenarios 1 & 2 do not raise profitability threats, but Scenario 3, a much slower reduction, would.

However, this third scenario would raise the strong possibility of the Fed incurring a net negative interest income. We calculate over time the break-even interest rate for IOER whereby the Fed starts to lose money as it pays out interest on its reserves versus garnering interest payments from its SOMA holdings. Chart 5 below provides the trajectory of the break-even IOER paths for each of our three normalization scenarios. As a starting comparison, as of today, the Fed's break-even rate for IOER is about 4.25% well above the current 1% IOER, but not too much above the FOMC's notions of a 3% neutral Fed funds rate.

Under the third scenario the break-even IOER in April 2021 is only about 4.75%, a level that may be too low for comfort for the FOMC. This argues that the Fed is likely to reduce the balance sheet at a much faster pace.

Chart 5

US: Break-even IOER rates



Source : Oxford Economics/Haver Analytics

The different break-evens are consistent with our three Fed SOMA reduction scenarios. IOER rates below the lines mean the Fed is operating profitably. IOER rates above the line mean the Fed is incurring net interest income losses.

Our base-case scenario should not make the Fed vulnerable to incurring net losses

If the reinvestment valve were to be turned off 100% beginning January 2018 (our second scenario), the break-even IOER rate would rise quickly, and by the time of normalization in April 2021 the break-even IOER rate would be about 8.75%, a level that would be high enough that Fed officials might not feel any threat associated with raising rates above the perceived 3% neutral funds rate.

In our base-case scenario (where the reinvestment valve is turned down to 50% in January 2018 followed by a full turn-off in January 2019), the break-even IOER rate rises to about 6.75% in April 2021, and to about 8.25% by the November 2021 normalization point. Here again, the level of the break-even IOER rate is such that the threat of negative net interest income is not particularly problematic.

In sum, we believe the Fed must take into consideration both the political realities surrounding its declining profits and the risk of disrupting the markets, which would bring forth unwanted criticism and hinder progress to achieving full and stable economic growth. Our analysis shows that the Fed can address both issues by phasing out debt reinvestments by 50% for the first year, followed by a full ceasing of reinvestments thereafter.

We believe changes to the Fed’s debt reinvestment policy could be announced at the June 13-14 FOMC meeting, with implementation of the new policy to begin in Q4 2017. Under our base-case scenario, we project the Fed will accomplish normalization of its balance sheet by 2021, as the SOMA stands at \$2.4 trillion. The minutes from the May 2-3 FOMC meeting, released on May 24, might shed additional insight into the Fed’s prospective plan to shrink its balance sheet.

Note, in a follow-up research briefing slated to be released on Tuesday, May 23, we will analyze the impact of the Fed altering its debt reinvestments on Treasury issuance and the impact on long-term Treasury interest rates.

The minutes from the May 2-3 FOMC meeting, released on May 24, might provide insights

Box 1: Understanding the mechanics of the Fed's net interest income

Up until October 2008, when the Fed began to pay interest on bank reserve balances, there was almost no interest paid on Fed liabilities. The only interest was on reverse repos with foreign central banks, and the occasional reserve draining and reverse repos conducted with primary dealers.

Prior to 2008, the Fed was profitable by design. It held interest earning Treasury securities, and discount window loans on the asset side of its balance sheet, with its major liability being non-interest earning currency in circulation, in a volume that was similar to the size of the SOMA. In fact, until the early 1990s treasury securities owned by the Fed were required as the only collateral against currency in circulation. These days, currency in circulation is collateralized by the full array of Federal Reserve Bank assets.

Fed profitability was not a factor in the setting of the short-term policy rate prior to 2008, nor has it been in recent years with very low short-term rates. The FOMC policy decisions were simply independent of concerns about Fed profitability. But now, with the Fed's balance sheet including a substantial volume of short-term, variable-rate liabilities, there will always be some IOER interest rate wherein the interest expense of the Fed would exceed the interest income. We can envision a situation in which either much lower, or negative net interest income could trigger Congressional intrusions, compromising Fed independence.

Since the Fed doesn't mark to market, interest income for the Fed is equal to the yield of the Fed's SOMA, which is equal to the coupon income plus the amortization of premiums and discounts on the securities held in SOMA. Interest expense is equal to reserve balances multiplied by the IOER plus the volume of reverse repos multiplied by the administered reverse repo rate, currently set 25 bps below the IOER, plus the interest expense of the internal reverse repos conducted with foreign central banks multiplied by a representative repo rate.