The Fed’s balance sheet run-off: Its impact on MBS and Treasuries

The U.S. central bank has begun running off part of the $3.4 trillion portfolio of MBS and Treasuries it acquired in response to the 2008 financial crisis. Despite concerns that this would lead to significant spread widening and volatility, MBS rates remain attractive on a relative basis to comparable duration Treasuries. However, the changing composition of the Fed’s Treasury book could cause the yield curve to steepen.

Executive summary

_ The Fed purchased about $3.4 trillion of Treasuries and Mortgage-Backed Securities (MBS) as part of its QE program. It shrank that portfolio between late 2017 and early 2019 by about $400 billion.
_ The Fed will finish its run-off program in the next year, and eventually shed all its mortgage bonds. It will eventually replace those MBS with Treasuries.
_ The Fed will shorten the weighted average maturity of its Treasury book. This could cause the yield curve to steepen.
_ The Fed will eventually re-expand its portfolio after the run-off ends, but only modestly, to match growth in its liabilities (in particular, currency), and thus keep reserves ample.
_ Worries that the end of QE would cause significant MBS spread widening and volatility turned out to be unfounded. Despite the Fed’s shrinking balance sheet and its rate hikes, mortgage rates remain attractive.
_ As the run-off shifts risk back to the private sector, we believe an evaluation of a portfolio’s duration and negative convexity exposures is warranted.

The Fed’s balance sheet

Prior to the 2008 financial crisis, the Federal Reserve’s balance sheet was much smaller than it is today. Its assets consisted of about $800 billion of Treasuries, and its primary liability was currency. Reserves, essentially bank deposits at the Fed, were minimal because the Fed did not begin paying interest on them until 2008. As a result, banks held little more than required. (See Figure 1.) In that environment, the Fed controlled the Federal Funds rate by adjusting the quantity of reserves via temporary repos or reverse repos of Treasuries. It required frequent temporary operations to keep the Funds rate near target.

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March 2019
After taking the Fed Funds rate down to near zero during the crisis, the Fed had to switch to unconventional easing to provide more support to the economy. It did this via a combination of forward guidance – stating that rates would be held low for a long time to manage expectations – and large-scale asset purchases. The purchases drove down the term premium on longer-term securities by reducing the duration risk for private sector investors and encouraging them to rebalance their portfolios to take more risk, thereby easing financial conditions. This strategy worked, although its impact diminished when the Fed ended its asset purchases, and it faded further as the central bank laid out and began executing plans for running off the assets it had accumulated.

Figure 2 illustrates the effect this had on the Fed’s balance sheet. There was a $3.4 trillion increase in the assets it held, split between Treasuries and MBS. (This was the first time the Fed bought mortgage-backed securities.) There were corresponding changes in its liabilities. The biggest increase by far was in reserves. Essentially, the Fed paid for the securities it purchased by crediting the reserve accounts of the banks that sold them, so reserves went up considerably. They didn’t go up by the same amount as the Fed’s asset purchases, because some of the reserve increase was absorbed by increases in other Fed liabilities, primarily currency.

Just prior to the beginning of the run-off in 2017, reserves had been coming down slightly. They were $2.2 trillion compared with a $3.4 trillion increase in total assets. The Fed had run down its assets by about $400 billion by January 2019, and reserves had come down to about $1.6 trillion.
The changes in the Fed’s balance sheet also required a change in operating procedures. With reserve so plentiful, the Fed could no longer control the Fed Funds rate the way it had before. To raise rates in such a plentiful reserves environment, the Fed would have had to drain a lot of those reserves under the old procedure. Instead, the Fed now pays interest on reserves and supplements that with a reverse repo facility for private sector participants who don’t have access to interest on reserves.

When the Fed raises the interest on reserves and the reverse repo rate, this drives up the Fed Funds rate and other short-term rates – even though reserves are abundant - because no one wants to lend at a rate below what they can earn at the Fed. This has afforded the Fed good control over short-term rates. If policymakers want to cut rates in the future, they can just cut the interest on reserves and reverse repo rates. They don’t have to add lots of reserves in order to drive down rates if the reserves are already abundant.

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Rationale for reduction

Despite the QE policy's success in supporting risk assets and providing good control over the Fed Funds rate, the Fed decided to reduce its balance sheet for several reasons. For one, policymakers wanted to reduce policy accommodation, and running off the balance sheet was a complement to increases in the Funds rate. Also, it shrinks the Fed’s footprint in the markets. It also affords more scope for the Fed to re-expand its balance sheet if there is some emergency in the future. Finally, it reduces the sensitivity of the Fed’s earnings to interest rates, which mitigates a potential source of political risk.

This risk arises because the Fed earns interest on the securities it holds, and it turns over those net earnings to the Treasury. By reducing the size of the balance sheet, and particularly the share of the Fed’s liabilities that pay interest (the reserves) relative to the share of Fed liabilities that don’t pay interest (mainly currency) it makes the Fed’s net earnings less interest sensitive. If the Fed is viewed as paying a lot of interest to banks, and that crimps the earnings it can turn over to the Treasury, it could increase political pressure on the Fed.

The Fed has been reducing its balance sheet gradually. The balance sheet reductions have been subordinated to changes in the Funds rate, which remains the primary policy lever. The Fed has not actually sold any assets, only slowed the pace of reinvestment. The portion not reinvested has been capped, and the caps have gradually increased. The cap peaked in October 2018 at $50 billion per month, of which $30 billion was Treasuries and $20 billion was MBS, although the typical amount available for run-off has been considerably less than that. The $400 billion cumulative run-off through January 2019 consisted of about $253 billion of Treasuries and $147 billion of MBS.

The decision on when to end the run-off is going to be dictated largely by technical considerations regarding the level of reserves in the banking system. While they will be lower than they are today, the Fed will want to keep them abundant enough so that it can still control the Funds rate through reserve interest rates, rather than open market operations. We estimate that sometime between the end of 2019 and the Spring of 2020 reserves will have gotten to that optimal level, at which point the cumulative run-off of the Fed’s holdings will have gotten to about $800 billion, or possibly as much as $1 trillion. Figure 3 shows how it might work. Alternatively, the Fed may end the runoff a bit earlier -- say by Q3 of this year -- and then keep their holdings steady well into 2020, letting growth in their other liabilities (primarily currency) slowly reduce reserves, edging them down toward the optimal level. In the end, the particular tactics the Fed adopts to complete the runoff won’t make much difference to the ultimate size of their balance sheet, which will be dictated by technical factors such as the amount of currency and reserves the public wants to hold.

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The Fed is likely to alter the composition of its holdings. In particular, MBS are apt to keep shrinking even after the run-off, but they will be replaced by Treasuries when the run-off stops. The Fed is also likely to shorten the duration of its Treasury holdings to better match them to the mix of Treasuries outstanding, and also increase its scope to impact markets more again in the future if an emergency arises.

When the dust settles, the Fed’s balance sheet is going to remain much larger than before the crisis. Currency and reserve demands are much larger than they were prior to the crisis, and the Fed wants to maintain its Funds rate operating procedure based on abundant reserves.

In fact, the Fed balance sheet will likely begin expanding again after the optimal level of reserves has been reached. The expansion will not be designed to provide stimulus to the economy. It will be purely technical, a very slow increase reflecting growth in the public’s demand for currency and reserves. The Fed’s liabilities will be growing, so the Fed will need to increase its assets to compensate for that. Figure 4 shows how the balance sheet might evolve from now to the end of the run-off and thereafter.

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FIGURE 4: ACTUAL AND PROSPECTIVE FED HOLDINGS
MBS likely to keep shrinking even after runoff ends ($ billions)

Source: Federal Reserve, DWS estimates, January 2019

Treasury and MBS impacts

Before the runoff began, there was a concern among fixed income and market participants that MBS sector performance would be dependent on the Fed’s QE support and would decline precipitously without it. The Fed avoided that problem by acting gradually and by being extremely transparent throughout the process. Some in the mortgage market also were concerned about convexity related spread widening, since the Fed was buying almost 50 percent of outstanding MBS at the peak of its purchases. However, the market repercussions thus far have been minimal.

After several Fed interest-rate hikes in the midst of this balance sheet reduction (as of late February 2019), MBS pass-throughs appear attractive relative to comparable duration Treasuries, with a current coupon spread of almost 90 basis points to Treasuries, and Treasury yields of 250 to 275 basis points. The mortgage index [Bloomberg/Barclay’s MBS Index] is quoted at a yield of 338 basis points as of late February. We are fairly sanguine about mortgages at this juncture with select assets providing an approximate 4 percent yield coupled with superior liquidity and limited prepayment risks under our short term interest rate forecast.

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One important aspect of the current MBS situation is its correlation with other asset classes. For example, it is negatively correlated with equities and lightly correlated with several of the credit sensitive sectors of fixed income. We expect mortgages to widen marginally in 2019, with our base case forecast being eight basis points cheaper this year. Our concern is how that is going to trickle through to the rest of the asset classes and this is where we believe more caution is warranted. With regard to Treasuries, we do not expect to see a massive move due to QT in isolation. While the Fed did directly invest in US Treasuries, the shape of the yield curve is more impacted by the current level of Fed Funds and expectations for future growth and inflation.

Another important consideration is how the Fed will modify its Treasury holdings, and how its preferences will affect future supply and demand across maturities. As noted above, we expect mortgages will be run off entirely out of the balance sheet. We do not expect the Fed to actually sell them, and so the timing of the run-off will be predicated on prepayment speeds, both actual and projected. How the Fed reallocates its Treasury book is just as important. There is concern in the market over the massive overhang of $1 trillion in net issuance of Treasuries this year. We believe that this concern is overblown, especially when the Fed is still going to be a buyer of Treasuries and global demand for US Treasuries should be robust as yields remain attractive.

The effect on the market will really depend on what type of Treasuries the Fed wants in its book. Ideally, it would shorten up its balance sheet in line with the outstanding Treasury market. The goal of a shorter weighted-average maturity would probably result in the Fed having more demand for short Treasuries than longer tenors, resulting in more long duration supply to be absorbed by the market. In turn, that could result in a steeper curve. (See Figure 5.)

FIGURE 5: WAM OF THE FED’S UST HOLDINGS UNDER VARIOUS SCENARIOS

DWS expects approximately $225 billion in organic mortgage supply in 2019. Add in the additional $180-$200 billion from the Fed’s run-off, and there is $400-$425 billion in net supply to be absorbed. Therefore, we do not forecast mortgages to tighten throughout the year. Nonetheless, any time they widen, it is important to reassess the relative value to other risk assets. The more attractive this asset class becomes, the more investors could reprice risk premium across competing sectors as a result.

There is some cause for concern that mortgage convexity has gotten worse and could deteriorate further. The Fed purchased its mortgage exposure over the years by taking delivery of TBA, which basically means taking the worst collateral characteristics out of the market. Because they are no longer doing that, there is now more negatively convex issuance hitting the market than in years past. In October 2018, convexity had significantly improved but that was a result of the 10-year Treasury increasing to as high as
housing. (Currently we seem to be experiencing a slowdown in the housing market, but not one that is perceived as tremendously troubling.) As a result, there is a broad consensus that the Fed cannot let mortgage spreads slip much wider. This may ultimately depend on how quickly the Fed unwinds its balance sheet, which is partially contingent on when it gets prepayments. The chart on the right side of Figure 6 shows some projections. At +/- 50 bps from current levels, it seems that we will see around $15-$25 billion of run-off per month, which is very manageable in our opinion given the environment. The chart on the left side shows the projection that the Fed’s System Open Market Account (SOMA) mortgages get wound down to zero and the Fed replenishes its balance sheet with Treasuries.

325 basis points. In mid-February 2019, we are back to 275, and that 50 basis points has brought us back to peak negative convexity. In our view, this is a bit troubling and we would focus on collateral characteristics to maintain exposure to the sector without significant interest rate sensitivity. Volatility spiking is a persistent threat and that could translate into problems for mortgages specifically, particularly with the increasing negative convexity.

If mortgage spreads were to undergo an extreme widening, that could have a negative impact on housing. There were some concerns when mortgage rates got close to 5 percent toward the middle of 2018 and that this level would impede housing. (Currently we seem to be experiencing a slowdown in the housing market, but not one that is perceived as tremendously troubling.) As a result, there is a broad consensus that the Fed cannot let mortgage spreads slip much wider. This may ultimately depend on how quickly the Fed unwinds its balance sheet, which is partially contingent on when it gets prepayments. The chart on the right side of Figure 6 shows some projections. At +/- 50 bps from current levels, it seems that we will see around $15-$25 billion of run-off per month, which is very manageable in our opinion given the environment. The chart on the left side shows the projection that the Fed’s System Open Market Account (SOMA) mortgages get wound down to zero and the Fed replenishes its balance sheet with Treasuries.

FIGURE 6: PROJECTED MBS SPREAD

As a result of the Fed’s transparency, we might have already seen the most egregious spread widening take place over the tapering horizon. If you look back at December 2017, mortgage spreads were about 66 basis points over Treasuries; by the end of 2018 they were at 90. DWS does not forecast much more widening from here but anticipates renewed volatility in the years to come.

Contrast this to earlier QE periods, when the markets were more volatile in general. Treasury rates were more volatile, and credit spreads were much more volatile as growth expectations were fragile. Take QE III in 2012 as an example. That was still at the height of the European financial crisis, and mortgage spreads went from a high of 145 down to 80, and then back to 140 in March 2013. This was coupled with Treasury rate shocks that were as large as 30 to 50 basis points every two weeks. This shows that the volatility backdrop is going to dictate our market. Again, the spread widening that we have already seen may ultimately might be the worst of what we will experience as a result of QT alone, but an increase in volatility can spur another adverse move in spreads across US fixed income markets.
Conclusion

The Fed’s carefully transparent and gradual approach to running down its balance sheet has allowed it to avoid market disruptions. The amount of the run-down will be limited by the Fed’s need to match its growing liabilities, so concerns about drastic, multi-trillion amounts of Treasuries being flung into the market are unfounded.

However, while we believe the mortgage market will not see significant widening, even though the Fed plans to eventually shed all its MBS, volatility remains a concern. Meanwhile, the Fed’s desire to shorten the weighted average maturity of its Treasury book may lead to a supply driven steepening of the yield curve.

The run-off should be completed by the Spring of 2020, at which time the consequences for the markets will be apparent. But our best estimate now is that the Fed’s balance sheet revisions will not cause significant problems for the markets.

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