US Daily: Early Thoughts on Fed Balance Sheet Runoff (Mericle)

- The Fed's balance sheet normalization principles state that the target range for the funds rate is the primary means of adjusting the stance of monetary policy. Last cycle, this meant that balance sheet reduction only began once normalization of the level of the funds rate was "well under way," which in practice meant after the FOMC had hiked four times to 1-1.25%.
- We make two simple observations about runoff in the last cycle. First, runoff began smoothly and—despite some confusion toward the end—successfully shrank the balance sheet to its new equilibrium size. There is no obvious problem with the prior strategy that needs to be fixed, and the Fed therefore has less reason than other central banks to rethink its approach. Second, the Fed was quite cautious in its first attempt at runoff—in particular, it provided a lengthy advance warning that runoff was coming and started at a very slow pace—but now has more experience.
- Fed officials have said that they will revisit the balance sheet normalization process. We assume that they will follow a somewhat less conservative version of the template used for runoff last cycle. We forecast that the fourth rate hike will come in 2023H1, and our best guess for now is therefore that runoff will begin around that time. Research on balance sheet policy implies that the impact of runoff on interest rates, broader financial conditions, growth, and inflation should be modest, much less than that of the rate hikes we expect. However, markets have sometimes reacted strongly to reductions in balance sheet accommodation in the past.

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Early Thoughts on Fed Balance Sheet Runoff (Mericle)

In his November press conference, Chair Powell said that the FOMC will discuss normalization of the Fed's balance sheet in coming meetings. We noted at the time that we expect the FOMC to follow an approach broadly similar to that used last cycle. In today's note we review the experience with runoff during the last cycle and its implications for runoff this cycle.

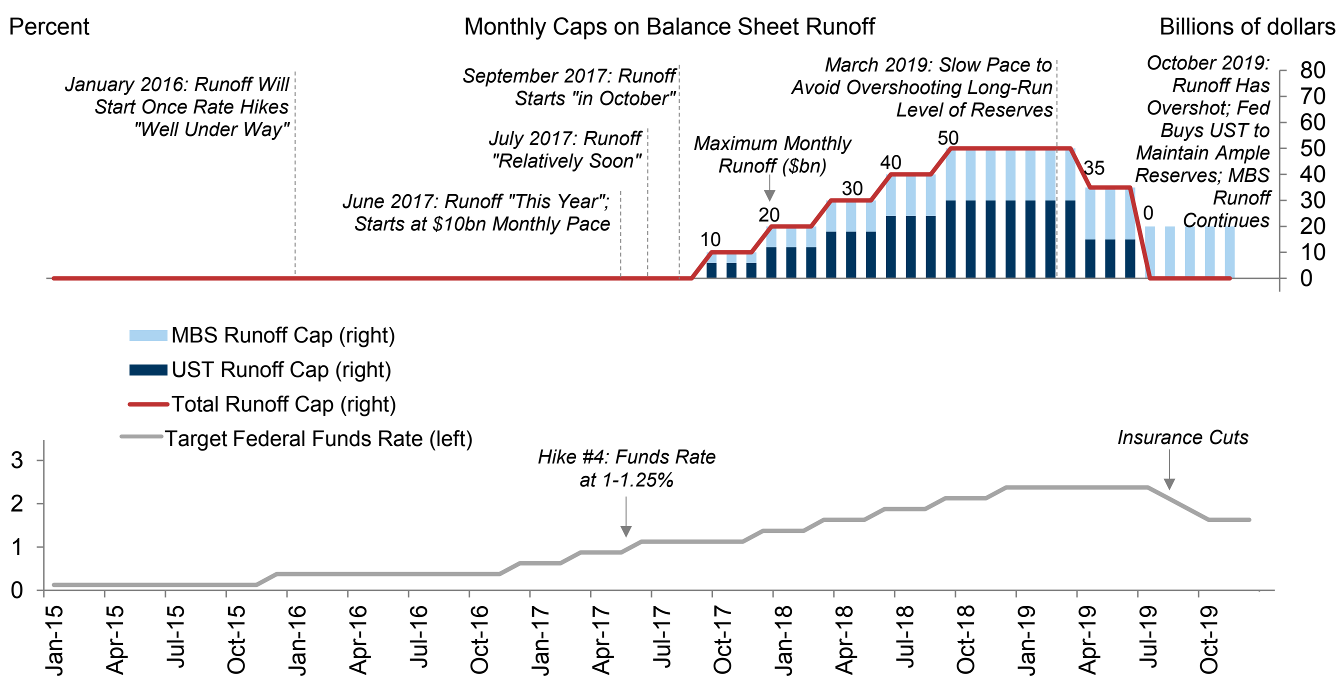
The Fed's balance sheet normalization principles state that the target range for the funds rate is the primary means of adjusting the stance of monetary policy. Last cycle, this meant that balance sheet reduction only began once normalization of the level of the funds rate was "well under way," which in practice meant after the FOMC had hiked four times to 1-1.25%.

We first recap the balance sheet normalization process in the last cycle, illustrated in Exhibit 1:

1. In January 2016, shortly after the first rate hike, the FOMC said that it anticipated continuing to reinvest maturing securities until normalization of the level of the fund rate was "well under way."
2. In June 2017, after raising the funds rate for the fourth time to 1-1.25%, the FOMC announced that runoff would start "this year." It also updated its normalization principles to note that runoff would begin at $10bn per month ($6bn UST, $4bn MBS) and gradually ramp up by $10bn per month every three months to a peak pace of $50bn per month.
3. In July 2017, the FOMC provided a second warning that runoff would start "relatively soon."
4. In September 2017, the FOMC announced the start of runoff, effective the next month.
5. In December 2017, the FOMC resumed rate hikes after having paused them in the lead-up to runoff.
6. In 2018, the pace of runoff rose gradually from $10bn per month to a peak of $50bn per month.
7. In September 2018, the Fed began a periodic Senior Financial Officer Survey that asked banks about their "lowest comfortable level of reserve balances" in order to estimate how much it could shrink aggregate reserve balances, the liability that declines as UST and MBS run off on the asset side.
8. In March 2019, the FOMC slowed the pace of runoff to reduce the risk of overshooting the long-run level of reserves required by the new ample-reserves monetary policy implementation regime.
9. In July 2019, the Fed announced that it would stop reducing the total size of its System Open Market Account (SOMA) portfolio and begin to reinvest up to $20bn per month of maturing MBS in Treasury securities in order to shift the composition of the portfolio toward Treasuries over time.

10. In October 2019, as it became clear that runoff had overshot, the Fed resumed Treasury purchases to grow the balance sheet again in order to ensure that the supply of reserves remained ample.

Exhibit 1: Last Cycle, the Fed Began Balance Sheet Runoff After Four Hikes and Proceeded Quite Cautiously



Source: Goldman Sachs Global Investment Research

We make two simple observations about runoff in the last cycle.

First, runoff began smoothly and—despite some confusion at the end about the required minimum level of reserve balances—successfully shrank the balance sheet to its new equilibrium size. There is no obvious problem with the prior strategy that needs to be fixed. The Fed therefore has less reason to rethink its approach than central banks that did not shrink their balance sheets last cycle and now worry about their balance sheets growing from one recession to the next, a concern raised at this year's Jackson Hole conference.

Second, the Fed was quite cautious in its first attempt at runoff. In particular, it provided a lengthy advance warning that runoff was coming, paused rate hikes during that warning period, and started runoff at the slow pace of just $10bn per month. Now, the Fed has more experience with runoff.

Based on the normalization principles and these observations about last cycle, we expect the Fed to follow the same broad template for runoff as last cycle, but to be a bit less conservative. We forecast that the fourth rate hike will come in 2023H1, and our best guess is therefore that runoff will start around then. It could start a little earlier even if the FOMC follows the same principle as last time because the FOMC now estimates that the neutral interest rate is 2.5% (vs. 3% in mid-2017), and using the same ratio would imply that funds rate normalization will now be "well under way" after three hikes rather than four. We also doubt that the FOMC will see a need to provide two meetings of advance warnings before announcing the start of runoff, and we could imagine a faster initial pace than $10bn per month.

Fed officials have said that they will revisit the balance sheet normalization process. Could they make a more dramatic change, such as starting runoff before the first rate hike? There is some sympathy within the Fed for reversing the order of operations, but it is clearly a minority view. The FOMC asserted that the funds rate is its primary policy tool last cycle because it had more confidence in its ability to calibrate the impact of rate hikes than the impact of balance sheet adjustments, which have sometimes had surprising effects on financial markets. This view was strongly held, and the trouble at the end of runoff last cycle likely reinforced it. A more realistic step might be to start runoff after just one or two hikes.

How much will the balance sheet ultimately shrink? It is hard to know at this point, but we can offer a few basic thoughts. First, the equilibrium dollar size of Fed liabilities such as currency should grow over time as the economy grows. Second, banks appeared to "grow into" a higher level of reserves over time last cycle. These points imply that the later runoff begins, the less will be necessary. The new standing repo facility presents another complication. The FOMC has said that it intends for the facility to act as a backstop rather than an active provider of liquidity that substantially reduces banks' need for reserves, but some Fed economists have advocated using such a facility to shrink the SOMA portfolio in the past.

For now, we offer an illustrative calculation of how far runoff might go. We assume that runoff begins in 2023Q2 and proceeds at the same pace as last cycle. We also assume that the equilibrium levels of all liabilities except currency are the same as a percent of nominal GDP as in February 2020, and that the equilibrium level of currency as a percent of nominal GDP is the current level. Under these assumptions, runoff would last until late 2027, just under five years, and the balance sheet would shrink from almost $9tn to $6.4tn, or from 36% to 21% of expected nominal GDP.

Research on balance sheet policy implies that the impact of runoff on interest rates, broader financial conditions, growth, and inflation should be modest, less than that of the interest rate increases we expect.

Our rule of thumb derived from a range of studies summarized in Exhibit 2 is that 1% of GDP or $230bn of asset purchases depresses 10y Treasury yields by 4bp. However, studies imply that about half of this effect comes from a duration removal channel and half from a signaling channel, meaning that ongoing asset purchases signal that rate hikes will not happen for a while. Because the signaling channel does not apply to balance sheet reduction, the impact of runoff is only half as large, or 2bp per 1% of GDP. This suggests that reducing the balance sheet by 15% of GDP would boost 10y yields by about 30bp. Studies also tend to find that the "stock effects" associated with balance sheet policy change announcements are larger than the "flow effects" of monthly purchases or runoff.

Exhibit 2: Studies Imply That 1% of GDP ($230bn) of Asset Purchases Reduces 10-Year Treasury Yields by 4bp, but Runoff Has Only Half That Impact Because It Lacks a Signaling Effect About Interest Rate Policy

Impact of QE on 10yr Treasury Rate				
Study	**Sample**	**Impact on 10yr Yield per 1% of GDP (bp)**	**Relative Importance of Duration Removal Channel (vs. Signaling)**	**Relative Importance of Flow Effect (vs. Stock)**
Modigliani-Sutch (1966, 1967)	Operation Twist	0bp	-	-
Greenwood-Vayanos (2008)	Postwar U.S. (pre-crisis)	4bp	-	-
Bernanke-Reinhart-Sack (2004)	U.S.	10bp	-	-
Krishnamurthy-Vissing-Jorgensen (2010, 2011)	Postwar U.S., QE1, and QE2	4bp	QE1: mostly portfolio rebalancing and liquidity vs. QE2: mostly signaling	-
Gagnon-Raskin-Remache-Sack (2011)	QE1	5-8bp	~75%	-
D'Amico-King (2013)	QE1 Treasury purchases	25bp	Mostly	40%
Hamilton-Wu (2011)	1990-QE2	4bp	-	-
Hancock-Passmore (2011)	QE1 MBS purchases	8bp	50% (rest improved market functioning)	-
Swanson (2011)	Operation Twist	4bp	-	-
Neely (2013)	Effect of U.S. QE1 on foreign bond yields	4bp	-	-
Christensen- Rudebusch (2012)	QE1, QE2	2.5bp	40% (rest signaling)	-
D'Amico et al (2012)	Pre-crisis	11bp	-	-
Bauer-Rudebusch	QE1, QE 2	4bp	50-60% (rest signaling)	-
Li-Wei (2013)	Pre-crisis	6bp	-	-
Goldman Sachs (2013)	QE1, QE2	4bp	Less important than signaling	-
Goldman Sachs (2017)	QE1, QE2	4bp	-	0%
IMF (2013)	Various DMs	-	Less important than signaling	-
Kandrac, Schlusche (2013)	QE1, QE2	-	-	Economically Insignificant
Rebucci-Hartley-Jimenez (2020)	Various DMs in 2020	5bp	-	-
Median Result		**4bp**	**50%**	**20%**

Source: Goldman Sachs Global Investment Research

Another rule of thumb that we derived from simulations using the Fed's macroeconomic model implies that a 25bp boost to 10y term premia from runoff has roughly the same impact on broader financial conditions, growth, and inflation as a 25bp rate hike. This implies that the runoff process described above would be worth a little more than one rate hike. Of course, markets have sometimes reacted more strongly than this to reductions in balance sheet accommodation in the past.

David Mericle

Disclosure Appendix

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