



# Big Genie, Small Bottle: Normalizing Abnormal Monetary Policy

Bill Nelson | May 12, 2021

Chair Powell said last month that the FOMC was not yet “talking about talking about” when to start tapering its asset purchases, but you can be certain that the Committee is talking about how it will go about normalizing policy when the time comes. Expanding your balance sheet by \$3½ trillion without a plan for how you will return to normal would be central banking malpractice. Indeed, as the Fed expanded its balance sheet between 2009 and 2014, the Committee discussed its normalization plans at least four times and issued two different sets of exit principles.

Fed communications suggest that it envisions normalization proceeding roughly like last time. In my remarks today, I’m going to flesh out what normalization along that previous timeline might look like, argue that such an approach could be too slow this time, demonstrate that if the Fed had to tighten faster and more substantially it could end up losing a lot of money and chart a path for reducing the Fed’s balance sheet to a much smaller size than it is now.

The FOMC’s forward guidance currently states that it will continue to expand its Treasuries portfolio at \$80 billion a month and its MBS portfolio at \$40 billion a month until the economy has made “substantial further progress” toward its goals of maximum employment and 2 percent inflation. That benchmark will be gauged relative to the situation in December 2020 when the Committee adopted the guidance. The first step in normalization will be adjusting the statement language so that it characterizes the extent of progress toward the Committee’s employment and inflation goals. After that, it’s just a matter of choosing a sequence of adjectives that end in “substantial.”

After the Committee declares that substantial further progress has been made, it will begin to taper the rate of balance sheet expansion. The Committee wound down QE 3 by tapering both its Treasury purchases and its MBS purchases by \$5 billion each month. At that pace, tapering would take 16 months. Tapering Treasury purchases this time by \$10 billion and MBS by \$5 billion each month seems more likely, shortening the process to eight months.

The next step in normalization will be to raise the target range for the federal funds rate. Again, they would first have to adjust the statement language, but that adjustment could start during tapering. The forward guidance indicates that they will tighten when the economy is at maximum employment and inflation is at or above 2 percent and on track to modestly exceed 2 percent for some time. As with the asset purchase guidance, the Committee would characterize the economic situation in terms of proximity to those goals and then incrementally adjust that characterization.

Once the conditions are met, the Fed will raise its target range for the federal funds rate—probably initially to a range of 25 to 50 basis points—and guide the funds rate into that new range by increasing the interest rate it pays on reserve balances (the IORB rate) and the interest rate it pays on overnight repurchase agreements (the ON RRP rate). When the Fed tightened in 2015, it initially set the IORB rate at the top of the range and

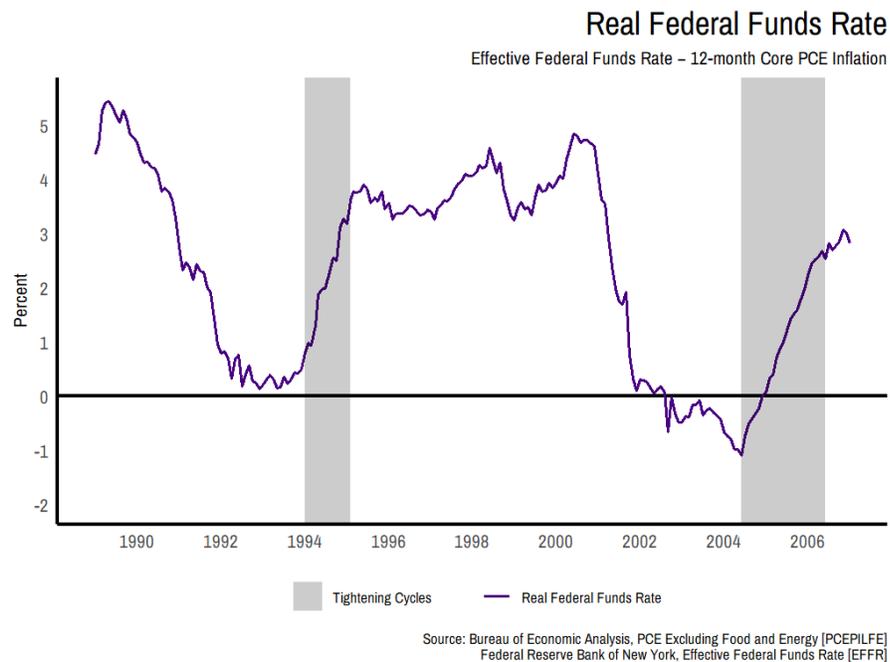
the ON RRP rate at the bottom, and the fed funds rate traded in the middle. However, at that time, there were \$2.8 trillion in reserve balances in the system. Reserve balances are currently \$4 trillion and could easily be \$5 trillion or higher at liftoff, so the funds rate could end up much closer to the ON RRP rate.

To prevent the funds rate trading at the bottom of the range, the Fed could set the IORB and ON RRP rates closer together and near the middle of the range. If they did so, use of the ON RRP facility could be far higher than it's been in the past. If this is the FOMC's plan, it might want to revisit the profound concerns it had when it created the facility about expanding the Fed's involvement in financial markets and facilitating flights to quality -- concerns that led it to put caps on use of the facility.

For reasons I will discuss in a minute, I don't think interest rate normalization will follow its previous timeline, but if it did, it will take a long time. The FOMC has been emphasizing repeatedly recently that the current rise in inflation will be temporary and that it is not going to respond to forecasts of inflation, just actual inflation. Consequently, before tapering will begin, the FOMC would seem to have to observe the current rise in inflation and either (1) watch it recede and then wait for actual inflation to rise up again, or (2) if it didn't recede, wait until it was clearly not transitory, perhaps because it was becoming embedded in inflation expectations, before it can declare that the economy has made substantial progress toward 2 percent inflation. I don't see how that process can take less than a year, so unless they adjust their script, it is hard to see tapering starting sooner than May 2022. Let's suppose the Committee tapers its Treasury purchases at twice the rate it tapered in 2014, in which case balance sheet expansion will end in January 2023. The Committee then begins to raise the target range for the funds rate. Assume it does so at the same pace as in 2017 and 2018 -- 25 basis point increments at every other meeting, until policy is neutral. The Committee currently judges a neutral nominal funds rate to be about 2½ percent, which would be reached in June 2025, four years from now.

There are good reasons, however, to think that the Committee might need to tighten monetary policy more rapidly and by a greater amount. Recoveries from financial crises tend to be slow because growth is impeded by the repair of the damaged financial system. But the recession last year was caused by a pandemic, and as the pandemic recedes, the return to normal could be rapid. Indeed, last week's employment report notwithstanding, the economy appears to be growing strongly. In addition, the Committee's emphasis on waiting for realizations rather than responding to forecasts and its new average-inflation-targeting framework both appear designed to let the economy gather considerable momentum before responding, at which point policy would have to move quickly from providing stimulus, past neutral, and to a level where it was imparting restraint.

To consider what such a path might look like, it is worth reviewing the two most recent times the Fed engineered a soft landing. This graph shows the real federal funds rate, highlighting the mid-1990s and mid-2000s tightening cycles. In both instances, achieving a soft landing required a 4-percentage-point increase in the real funds rate and took, on average, 1½ years. If inflation rises 1 percentage point to 2½ to 3 percent, then the nominal funds rate would need to be raised to about 5 percent to achieve a 4-percentage-point real tightening as in these two previous episodes. If the appropriate time to begin tightening is now, somehow the FOMC would have to begin to taper its balance sheet expansion and increase the funds rate by 475 basis points by the end of next year.



One implication of such a substantial and rapid rise in interest rates seems to have generated little notice. Like any financial institution that funds long-term assets with short-term liabilities, if interest rates go up, the Fed’s net income will decline, and it could make losses. If interest rates have to go up a lot and go up quickly, the losses will be big.

Consider the implications for Fed earnings of having to raise the fed funds rate to 5 percent. It’s complicated to project the whole scenario – further balance sheet expansion, then rapid tightening and balance sheet runoff. But to get a rough idea, it is simple to consider what would happen right now if the IORB rate were 510 basis points instead of 10 basis points and other short-term rates were also 500 basis points higher.

As of a week ago, the Fed had about \$4.5 trillion in interest-paying liabilities – \$3.9 trillion in reserve balances, \$388 billion in reverse repos, and \$326 billion in what are called “other” deposits of which perhaps \$235 billion are interest-bearing. If short-term interest rates were 5 percentage points higher, Fed interest expense would increase by \$225 billion. Interest income would be essentially unchanged initially, but it would rise gradually as securities matured and the Fed reinvested the proceeds. Fed net income last year was \$90 billion, so this back-of-the-envelope analysis suggests it would initially make losses of \$135 billion at an annual rate, and elevated, but declining, losses would persist.

Remarkably, even though the Fed only has capital of \$32 billion, despite those losses, the Fed’s capital would not go negative. Instead, the Fed would offset the losses with a balance sheet item the Fed’s accountants call “deferred asset – remittances to Treasury” but that everyone else calls the “magic asset.” The magic asset is defined in footnote 3.q of the Fed’s annual financial statement as the amount of future profits that the Fed will retain before it again passes its profits over to Treasury. For every dollar of losses, the Fed would increase the magic asset by a dollar.

At the same time that its net income turned negative, the Fed would experience large unrealized losses on its securities portfolio. The duration of the Fed’s portfolio is probably a bit more than five years and would be

longer still if mortgage prepayments slowed to a trickle as mortgage rates rose. If overnight rates went up to 5 percent and QE 4 ground to a halt, five-year rates would likely go up to at least 4 percent, 3 percentage points higher than currently. Under these assumptions, a rough guess is that the value of the FOMC's \$7 trillion securities portfolio would decline by about 15 percent, or over \$1 trillion.

Even though those losses would be unrealized, they are not imaginary: Because the purchases are funded to a large extent by short-term borrowing, the losses roughly correspond to the present value of the decline in future net interest income paid to the U.S. Treasury. In other words, these costs would have real consequences for federal budget deficits and ultimately would be shouldered by U.S. taxpayers.

It is worth emphasizing again that these are just ballpark approximations under a stress scenario. I'm working with Andy Levin, a former colleague at the Fed, now at Dartmouth, to develop more sophisticated forecasts under a range of scenarios.

It is also important to note that neither negative profits nor the unrealized losses would, in and of themselves, interfere with the ability of the Fed to implement monetary policy.

Returning to the normalization process, the size of the balance sheet will be "normalized" when reserve balances decline to a level that the Fed decides is the minimum amount necessary to conduct monetary policy "efficiently and effectively." As of the end of 2019, that minimum amount appeared to be about \$1.7 trillion, a \$300 billion buffer over an estimate of the structural demand for reserve balances of about \$1.4 trillion. The structural demand for reserve balances is the level below which the fed funds rate would exceed the IORB rate.

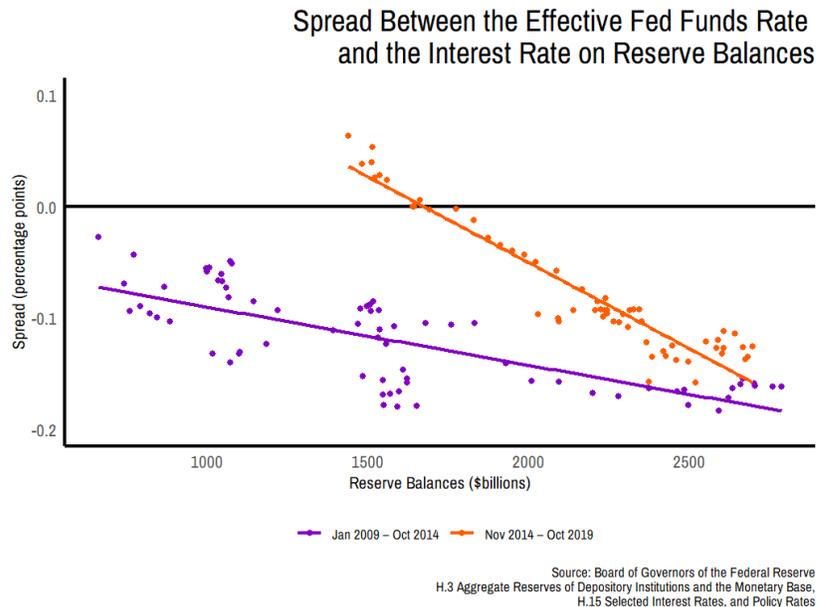
According to Chair Powell, the Fed will probably normalize its balance sheet by just ceasing to reinvest principal payments from its Treasuries and MBS. The Fed could, of course, shrink the portfolio faster by selling assets, but it is unlikely to do so in part because such sales could disrupt markets but also because it might then have to realize losses on its securities holdings. Not only would those losses reduce Fed profits further, they would also make it harder for the Fed to maintain that its large unrealized losses were irrelevant. According to FOMC meeting transcripts from 2012 and 2013, avoiding having to realize losses was one of the reasons that the Fed chose not to sell assets when it last shrunk its portfolio.

Structural demand for reserve balances has reached the high level of \$1.4 trillion for several reasons. First, banks concluded that they needed a much higher level of cash based on their experiences during the global financial crisis. Second, a raft of new liquidity requirements were imposed through both the regulatory and examination process. Many of those regulatory requirements treat reserve balances and Treasury securities equally, but rank-and-file examiners and those reviewing resolution plans prefer that banks hold reserve balances, which are more liquid.

Those factors alone can't explain the continued growth in the structural demand for reserves after the post-crisis regulatory regime was in place. In a variant of Say's law, the additional growth in demand occurred because of the high level of supply. When reserve balances are super abundant, they are cheap; that is, the interest rate that the Fed pays on reserve balances is above the interest rate on alternatives. Banks choose to satisfy their liquidity needs with reserve balances, and bank examiners get used to those choices. It's not just examiners, of course. Like any large institution, banks get used to certain ways of doing things and can be resistant to change. Likewise, credit-rating agencies and bank investors understandably base their views of what is prudent on what has been normal practice.

This whole process acts as a ratchet. Structural demand for reserve balances ends up just below whatever level the system has gotten used to. You can see the process in this scatter plot of the spread of the fed funds

rate and the interest rate on reserve balances against the level of reserve balances. The purple dots show the relationship as the Fed expanded its portfolio between January 2009 and October 2014, and the orange dots trace out the relationship as the Fed contracted its portfolio through September 2019. As can be seen, the spread widened faster when the Fed contracted than it narrowed when the Fed expanded.



To be clear, I’m not saying that with reserve balances at \$4 trillion, banks’ short-run structural demand for reserves has shifted up to \$3.9 trillion. But I fully expect that structural demand is shifting up and will continue to do so after liftoff because the IORB rate will be above market rates.

Suppose structural demand rises to \$1.7 trillion, putting the normalized level of reserve balances at \$2 trillion after adding a \$300 billion buffer. Suppose further that the Fed’s securities portfolio had expanded to \$8 trillion, and that there were \$5 trillion in reserve balances. If the securities portfolio declines 10 percent a year, roughly corresponding to the portfolio’s five-year duration, and currency grows at the 5 percent trend growth rate in nominal GDP, the balance sheet would be normalized about four years after redemptions began.

The Fed could get substantially smaller, however, if it decided to. It might decide that the financial risk associated with being so large was unacceptable. It could conclude that banks’ structural demand for reserve balances would just continue to rise as long as the IORB rate was above market rates. It also might decide that having an unbounded balance sheet left it open to political pressure to monetize the debt or expand its role in financial markets.

I also wonder how a view that there is no real cost to getting larger has affected decision-making within the System. If each incremental decision about increasing the balance sheet is perceived as having no cost, that too acts as a ratchet.

The most important thing that the Fed could do if it decided to get smaller would be to create a modest financial incentive for banks to economize on reserve balances rather than subsidizing the holding of reserve balances. Once that happened, banks would gradually start finding alternatives, and bank examiners and investors would become accustomed to those alternatives. Short-run structural demand would slowly start to

move down. That's what was beginning to happen in 2018 and '19 when the gradual decline in reserve balances shifted the repo and fed funds rates above the IORB rate.

The Fed could create that incentive, as it did in 2018 and '19, by nudging reserve balances down to structural demand. Once there, they would, of course, have to control volatility in the supply of reserves and accommodate variations in demand. A standing repo facility would be a helpful tool under those circumstances because it could help put a ceiling on interest rates and automatically inject reserves when needed.

The structural demand for reserves could be reduced further by recognizing that a deposit at the central bank and a collateralized line of credit from the central bank are economically nearly identical. Both are promises to provide funds on demand in the future. Structural demand for reserve balances is high because each and every bank is prepositioning at the Federal Reserve funds it might need in a contingency. However, rather than inefficiently providing contingency cash to every bank that might need it in advance at a subsidized rate, the Fed could instead provide each bank for a fee a collateralized line of credit.

Such lines, called Committed Liquidity Facilities or CLFs, are already included in the Basel Standard for the Liquidity Coverage Ratio and are in use by Australia, South Africa and Russia. If the Fed were to offer such lines of credit and count them toward all of banks' different liquidity requirements, the demand for reserve balances could be reduced significantly without sacrificing safety and soundness. Moreover, the Fed would collect fees on the lines rather than paying a subsidy on deposits.

So what's the bottom line? What should the Fed do? First, it should clearly articulate an exit plan, the sooner the better. Second, despite its forward guidance, it should start tapering its asset purchases now; with the economy growing strongly, the marginal added stimulus they provide is unnecessary and each purchase just makes normalization harder. Third, it should start preparing Congress and the public for the possibility that it will make substantial losses. Lastly, it should reconsider, this time with public notice and comment and congressional review, its large-balance-sheet approach to conducting monetary policy.

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