# The Overnight Reverse Repurchase Agreement Facility

**Bill Nelson | April 30, 2021**

Every day, the Federal Reserve accepts overnight cash investments from banks, government-sponsored enterprises (the housing agencies plus the Federal Home Loan Banks), and money market mutual funds and provides Treasury securities as collateral at its Overnight Reverse Repurchase Agreement (ON RRP) facility.[1] [2] A "reverse repurchase agreement" is a transaction where one party (a GSE, say) purchases a security from another (the Fed) with an agreement that the second party will repurchase it the following day, usually at a slightly higher price in order to provide the cash provider interest. Reverse repurchase agreements are a common form of safe, collateralized investment, typically overnight and often using Treasury securities.[3]

The facility was created in 2013 as a tool to ensure that the Fed could lift the effective federal funds rate, the interest rate the Fed targets to conduct monetary policy, above zero when it decided it was appropriate to do so.[4] The federal funds rate is the market rate at which banks, or banks and GSEs, lend to each other, usually overnight, on an unsecured basis. The effective rate is the median funds rate each day. In 2013, the Federal Open Market Committee's target for the federal funds rate was 0-25 basis points, which the Fed refers to as the "zero" or "effective" lower bound.

The primary tool the Fed uses to control the federal funds rate is the interest on reserve balances (IORB) rate, the interest rate the Fed pays on deposits of banks at the Fed, which are called "reserve balances."[5] The Fed creates an abundant supply of reserve balances, making them readily available. The oversupply will push rates down, and no bank should lend money into the fed funds market for less than it could earn by just keeping the funds on deposit at the Fed, so the fed funds rate should equal the IORB rate. Importantly for what follows, GSEs and FHLBs also maintain deposits at the Fed, but do not earn interest.

In 2013, the Committee was in the midst of QE 3, the flow-based asset purchase program under which the Committee bought $95 billion in Treasury securities and Agency MBS each month, adding to reserve balances that were already high because of QE 1 and 2. The Committee was worried that when it came time to raise the fed

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[1] Additional information on the ON RRP facility is available at [Federal Reserve Board - Overnight Reverse Repurchase Agreement Facility](#).

[2] The ON RRP facility is essentially the opposite of a standing repo facility that is being considered by the Fed (see [Design Challenges for a Standing Repo Facility - Bank Policy Institute (bpi.com)](#)). Counterparties lend to the Fed at the ON RRP facility. The Fed would lend to counterparties at a standing repo facility.

[3] Confusingly, the Fed refers to repo and reverse repo transactions from the perspective of the counterparty. When it engages in what it calls a repo, it is really a reverse repo from the Fed's perspective. So the Fed is engaging in repos at its reverse repo facility. It is "borrowing" money from GSEs and money funds and providing Treasury securities as collateral. By contrast, when the Fed provides a discount window loan, it does not call that a discount window borrowing.

[4] The Fed opened the ON RRP facility in September 2013 for experimentation and officially adopted it as a tool for normalizing policy in September 2014.

[5] At the time, the Fed distinguished between the interest rate on required reserve balances and the interest rate on excess reserve balances, and it was the latter, "IOER" rate, that was the primary tool for controlling the fed funds rate. The Fed has since set reserve requirements to zero and, going forward, will just use the term "IORB rate."

funds rate, raising the IORB rate would not be sufficient. The Committee had doubts in part because the effective fed funds rate at the time was typically 8-9 basis points, below the IORB rate at that time of 25 basis points.

The effective funds rate was below the IORB rate because the typical fed funds transaction then (as now) consisted of GSEs lending to a bank. The overabundance of reserve balances had made interbank transactions uncommon. GSEs earned nothing on deposits at the Fed so lent the funds to banks that earned the IORB rate and the two parties essentially split the difference, resulting in a fed funds rate that was well below the IORB rate. No one was sure what would happen when the Fed lifted the IORB rate. Would the funds rate continue to be a fixed spread below the IORB rate, or would the spread widen because the GSEs and FHLBs continued to earn zero?

To become confident that it could raise rates when it came time to do so, the Fed created the ON RRP facility. Because overnight reverse repurchase agreements with the Federal Reserve are essentially the same as a deposit, the facility effectively extended the authority of the Fed to pay interest on reserve balances to a broader set of counterparties.[6]

When the Fed eventually raised the IORB rate in 2015, it raised the interest rate on the ON RRP facility in lockstep. Because GSEs could now earn the ON RRP rate if they desired, they could demand a higher rate when lending fed funds to bank counterparties. Moreover, by opening the facility to money funds, which are important lenders in the repo market, the ON RRP helped ensure that overnight repo rates in the market would not trade well below the Fed's ON RRP rate. Because investors arbitrage between repo and fed funds limiting downward moves in the repo market helps hold up the fed funds rate.[7]

And it worked. When the Fed increased its target range from 0-25 bp to 25-50 bp in December 2015 it increased the IORB rate to 50 basis points and the ON RRP rate to 25 basis points. Despite there being an unprecedented and astronomical $2.8 trillion in reserve balances in the banking system the effective federal funds rate rose from 14 basis points to 37 basis points.

The ON RRP facility is officially a temporary facility (although it seems likely to be permanent). When the Fed adopted the facility, it indicated that it would phase it out when it was no longer necessary to control the funds rate. Several members of the FOMC were concerned that the facility constituted an undesirable encroachment of the Fed into financial markets. Members were also concerned that the facility could pose financial stability risks because it could facilitate flights to quality. In bad times, why keep investing in the commercial paper of businesses when you could just leave the money at the ON RRP facility? To mitigate the flight-to-quality concerns, use of the facility was capped both at the total level and the counterparty level. The aggregate cap was later dropped but use per counterparty remained capped at $30 billion a day.

Half a decade later, the ON RRP facility is still around, and it is again helping the Fed control the federal funds rate. The expansion of the Fed's balance sheet that concerned the Committee in 2013 pales in comparison to the current situation. There are $4 trillion in reserve balances and that number is rising rapidly, both because the Fed is buying $120 billion in securities each month and because the Treasury is reducing its deposit at the Fed. When the Treasury spends the funds it has on deposit at the Fed, the money ends up in the banking system and boosts the reserve balances of banks.

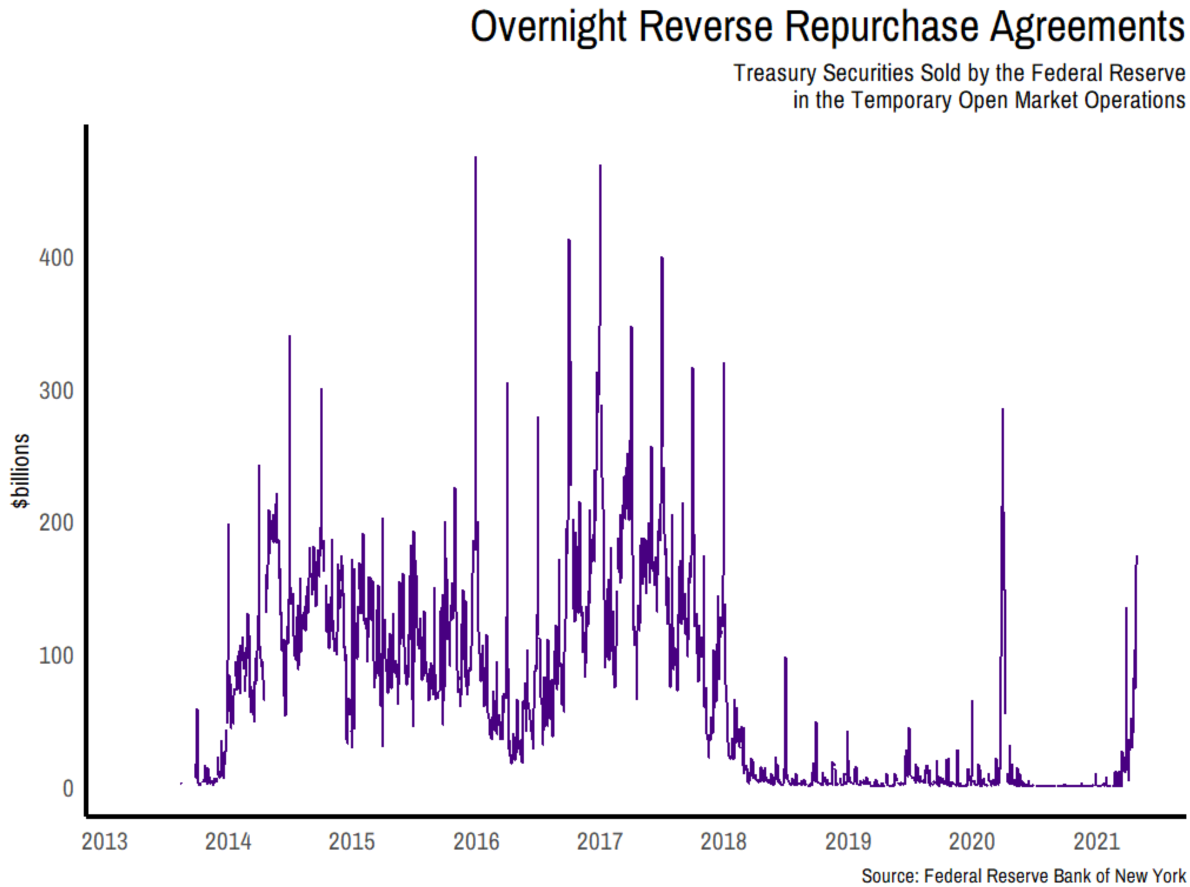
Currently, the IORB rate is 10 basis points, and the ON RRP rate is 0. The effective fed funds rate is 7 basis points and the average repo rate (the secured overnight financing rate or "SOFR") is 1 basis point. Although those rates

[6] The current list of ON RRP facility counterparties is available here: https://www.newyorkfed.org/markets/rrp_counterparties

[7] Despite officially targeting the fed funds rate, the Fed appears also to care about the level and volatility of the repo rate.

have held steady over recent weeks, it seems that the capacity of the banking system to absorb further reserve balances may be being reached.

As shown at the far right of the exhibit, use of the ON RRP facility has risen sharply in recent days. The super saturation of liquidity is putting downward pressure on money market rates including repo rates with some trades every day at slightly negative levels. Rather than accept negative rates, many investors are investing in the Fed at the ON RRP facility, earning 0. Anticipating this outcome, the Federal Reserve announced on March 17, 2021 that it was raising the per-counterparty cap on the facility from $30 billion to $90 billion.




The Fed may also have increased the per-counterparty limit in March because it knew that it would soon be making changes to its capital requirements that would make reserve balances more costly for banks to hold, driving funds into the ON RRP facility. In particular, two days later, the Fed announced that the temporary exclusion of reserve balances and Treasury securities from the calculations of bank supplementary leverage ratios (SLRs) would stop at the end of March.[8] The SLR requires banks to fund reserve balances in part with equity, and since equity is more expensive than debt, when the exclusion of reserve balance ended, it because more expensive for banks to hold reserve balances.

[8] The Fed indicated that it would be proposing adjustments to the SLR in coming months.

Use of the facility is likely to continue to rise. The Treasury has $1 trillion on deposit at the Fed but is drawing that level down to about $500 billion. Moreover, if there is another debacle over whether and when to raise the Federal debt ceiling, the Treasury would have to get the balance down to $130 billion by July 30. Meanwhile, the Fed continues to expand its holdings of securities at $120 billion a month and, according to Chair Powell, is not yet even "talking about talking about" tapering those purchases.

Use of the facility will rise especially sharply on June 30, 2021. The home country leverage ratio requirements of many of the foreign banks that have large U.S. branches, which are the biggest borrowers in the fed funds market, are calculated on a quarter-end basis. Consequently, on that day the branches will reduce their borrowing sharply to get smaller and the GSEs will invest instead in the ON RRP facility. The quarter-end spikes in use of the facility are visible in the graph.[9]

Future use of the facility will depend importantly on how the Fed adjusts the IORB and ON RRP rate. It is likely that eventually the effective fed funds rate will decline a bit from 7 basis points. If the funds rate falls too close to zero, the Fed will raise the IORB rate and probably also the ON RRP rate 3-5 basis points to push the rate back up. If the Fed raises the ON RRP rate, use of the facility will increase further, especially if reserves continue to be included in the denominator of the SLR.

If the sharp rise in use in recent weeks indicates that the Fed has discovered the point where further growth in reserve balances will not be absorbed by the banking system without either increasing the IORB rate materially, raising costs to taxpayers; accepting an unacceptable decline in money market interest rates, or immediately fixing the SLR, then the anticipated further growth in reserve balances could show up instead as growth in the ON RRP facility. In that case, the facility could easily grow to well over $1 trillion by mid-summer. Perhaps the FOMC participants that were concerned back in 2013 that the "temporary" facility would lead to a permanent entanglement of the Fed in financial markets were on to something.

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[9] The spikes went away by the fall of 2018 because reserve balances had declined to a point where the fed funds rate had risen above the IORB rate, making the arbitrage trade between GSEs and banks unprofitable.