

U.S. monetary policy: back to normal... in experimental mode

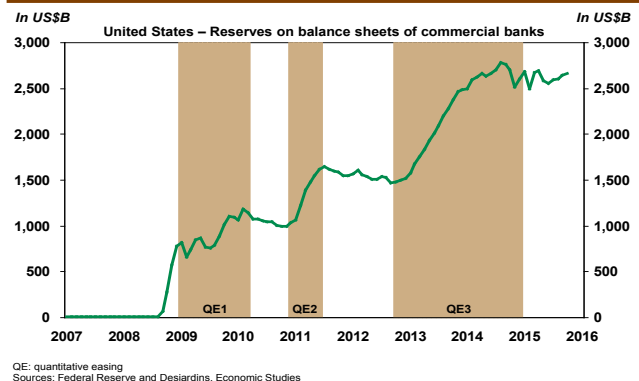
The Federal Reserve (Fed) should soon announce an increase in policy interest rates, something it has not done for over nine years. Although this gesture marks an important step towards the normalization of monetary policy in the United States, it need not imply that the mode of operation will seamlessly revert to the one that existed before the crisis. The swelling of the Fed's balance sheet has resulted in a massive expansion of reserves held by U.S. financial institutions, which will affect the management of interest rates during the normalization period. This *Economic Viewpoint* analyzes some of the operational challenges awaiting the Fed, and discusses the tools that will help it address these issues. It certainly will be an evolution towards a new normal for policy rates, but many monetary policy management aspects will remain abnormal.

Prior to the financial crisis of 2008–2009, the Fed implemented its interest rate policy through the federal funds market, i.e. the interbank funding system. Banks would tap the market for federal funds to address any overnight liquidity requirement. Conversely, when in a cash surplus position, they would use the federal funds market to offer these amounts. The Fed would set at a specific target for the rate at which these exchanges were to be made, i.e. the federal funds rate. Of course, supply and demand forces could cause the actual federal funds rate to drift away from the target set by the Fed but the latter undertook open market operations to control the alignment of the effective rate with the fixed target.

THE BREAK

Two key elements changed as a result of the financial crisis. First, the Fed continually lowered the rate on federal funds, to the point where, in its decision of December 2008, it decided to lower the rate from 0.50% to a corridor of 0.00% to 0.25%. This marked an important break with previous practice, according to which a specific effective rate was targeted. Second, the Fed undertook three major waves of asset purchases that swelled its balance sheet. This expansion had as a corollary a substantial increase in reserves held by financial institutions and deposited at the Fed (graph 1). As the start of the normalization process nears, the use of a target range for the federal funds (a practice that will be continued during the process), as well as the large amount of reserves on bank balance sheets dramatically changes the way monetary policy is conducted in the United States.

Graph 1 – Bloated reserves are a legacy of quantitative easing programs

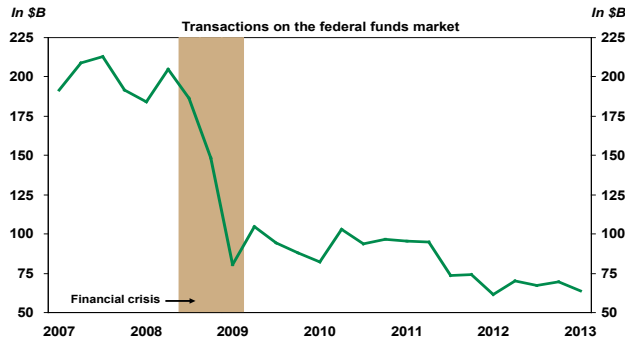


A KEY RATE SUBJECT TO DISTORTIONS

The significant increase in liquidity on bank balance sheets has nearly rendered the federal funds' market obsolete after the crisis. Flush with reserves, banks had no incentive to exchange liquidity. Transactions fell significantly (graph 2 on page 2), and Fed officials feared that an overly idle interbank market would contravene the eventual normalization process. To mitigate this possibility, the Fed decided in January 2009 to compensate banks on their holdings of excess reserves¹. Banks are currently remunerated at a rate equivalent to the upper bound of the

¹ As opposed to the Bank of Canada, which has ended the practice in 1994, the Fed requires banks to keep a small fraction of their deposit liabilities in the form reserves. The excess reserves represent the amount beyond these requirements.

Graph 2 – The level of activity has considerably diminished in the federal funds market

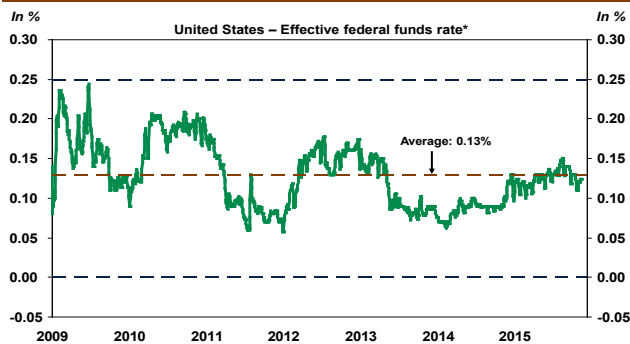


Sources: New York Federal Reserve and Desjardins, Economic Studies

range for the federal funds, that is 0.25%. This rate is known as the IOER (interest on excess reserves) rate.

The idea behind this method is the establishment of an arbitrage situation between the federal funds rate and the IOER rate. Indeed, federal funds are trading at a rate below the IOER rate, at 0.13% on average since 2009 (graph 3).

Graph 3 – The federal funds rate has oscillated near the mid-point of the target range since the crisis



* 5-session moving average
Sources: Bloomberg and Desjardins, Economic Studies

Thus, without incurring any risk, banks have in principle the opportunity to borrow at a lower rate on federal funds' market to receive the higher return offered by the Fed via the rate on excess reserves. The arbitrage is designed to maintain some demand for liquidity, be it artificial, in the federal funds market.

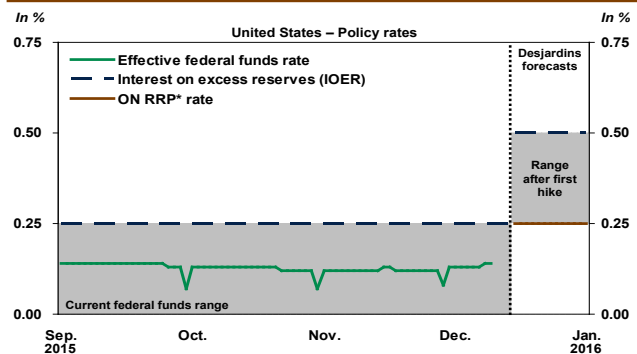
It should be noted that under the assumption of efficient markets, the presence of arbitrage should theoretically lead the federal funds rate to converge to the IOER rate, as banks exploit the opportunity. In practice, however, three factors prevent this alignment. First, regulatory capital requirements induce banks to limit the size of their balance sheets. The simple presence of arbitrage thus does not automatically imply a spike in the amount of transactions.

Second, U.S. financial institutions must pay a fee to the Federal Deposit Insurance Corporation (FDIC). The fee varies depending on the size and complexity of a given institution. According to the FDIC, it stands minimally at 0.025% and can rise to as much as 0.45%. Once this cost is considered, the apparent arbitrage opportunity is at best less compelling, and at worst inexistent. Third, the eligibility criteria for various Fed facilities are another element preventing the realization of the theoretical arbitrage. Access to the IOER facility is restricted to holders of reserves, that is, depository financial institutions. Other active entities in overnight money markets, including the government-sponsored enterprises and money-market investment firms, do not hold this privilege. When these entities find themselves in cash surplus position, they rely on the federal funds market, resulting in a downward pressure on rates.

Despite these operational limits, the payment of interest on reserves held by banks has met the objective of keeping a certain level of activity in the market for federal funds. Otherwise, the effective federal funds' rate would have converged towards zero. It has rather kept around the middle of its corridor.

That said, there are still doubts as to whether the federal funds market will be capable of reflecting the monetary policy the Fed will wish to implement in a context of tightening. The first move in this direction will consist of an increase in the range of fluctuation for the federal funds rate to 0.25%–0.50%. The IOER rate will also be increased to 0.50% (graph 4). In principle, arbitrage forces should lead the federal funds rate up but given the conditions described above, supply pressures on federal funds are more intense than demand pressures. Even after the first rate hike, banks will hardly depend on the federal funds market for their liquidity needs, in contrast to the state-sponsored companies and investment firms, which do not

Graph 4 – The behaviour of the federal funds rate after the first hike remains uncertain



* Overnight reverse repurchase.
Sources: Datastream and Desjardins, Economic Studies

have as lucrative alternatives as the IOER facility to invest their funds. The imbalance could cause the effective federal funds rate to struggle reaching the range set by the Fed.

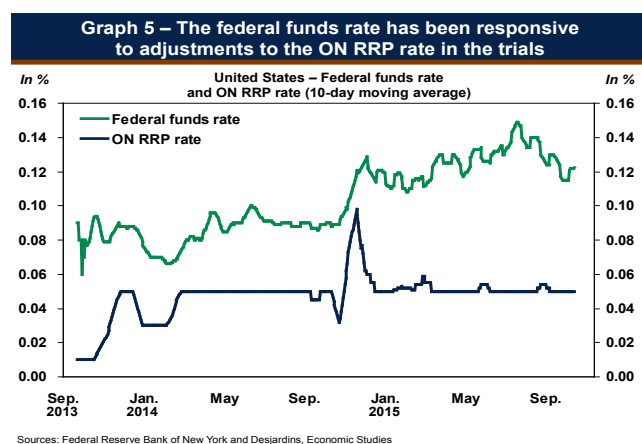
A NEW TOOL TO THE RESCUE...

Fearing difficulty in implementing its policy, (and the associated credibility liability), the Fed launched in September 2013 an overnight reverse repurchase facility, designed to compete with the federal funds' market. This mechanism will involve a rate set by the Fed (ON RRP rate) and will be accessible to a large number of investors in money markets that are not eligible to receive the IOER rate. The Fed will conduct auctions at which it will absorb investment demand at a fixed rate. Depositors will receive securities as collateral².

Through arbitrage forces, the ON RRP rate should establish a floor for the federal funds' rate. Normalization principles adopted by the Fed in September 2014 indeed stipulate that the ON RRP rate will be fixed at the lower bound of the federal funds' target range.

... BUT NOTHING IS EVER GUARANTEED

The Fed has tested the ON RRP facility between 2013 and 2015 to assess its ability to influence the federal funds rate. The tests were conclusive and the federal funds rate has generally reacted in the expected manner (graph 5).



However, there is no guarantee that in real time, the mechanism will be as effective as during testing. In particular, the effectiveness of the ON RRP facility is maximized when the Fed fully satisfies the demand for

² Of course, repo operations are no innovation for the Fed. They are to the contrary very much part of the traditional monetary policy toolbox. However, in typical open market operations involving repo transactions, the Fed would set the rate indirectly by adjusting the amount of securities it would purchase or supply. One distinctive feature of the ON RRP mechanism is that the rate will be fixed directly.

investment in the mechanism. The Fed, however, has set a limit of US\$300B per operation, to address concerns that the mechanism could turn into a safe haven in times of financial stress. If this limit proved too low and consequently, the demand for repo transactions substantially exceeded the maximum amount the Fed would be willing to accommodate, the market for federal funds would absorb the surplus, applying downward pressure on the federal funds rate. There is thus a risk that the mechanism does not effectively form a floor, even though at first glance, the limit seems generous enough to avoid this scenario.

OTHER WEAPONS IN THE ARSENAL

If the ON RRP facility proved ineffective, the Fed still has another way it can influence the federal funds rate; a term deposit facility. This mechanism will provide all institutions holding reserves with the possibility to deposit funds at the Fed over a longer period (7, 14 or 21 days). Such operations will help drain some of the excess reserves and help revive interest for overnight federal funds. Note that to encourage banks to adopt this facility, the Fed will have to fix the rate above the IOER rate. In tests conducted earlier this year, the rate was generally fixed at one to three basis points above the IOER.

The term deposit mechanism need not be used only in a scenario where the federal funds rate remains below the target range. For instance, all indicates that even if the rate joins the band, it will initially fluctuate very close to the lower bound. The Fed could tolerate this situation at first, which notably implies that the first increase would not be a 25 basis points hike, as is usually the case, but a hike of about 12 points effectively. However, an effective federal funds rate that would struggle to fluctuate above the lower bound would indicate persisting imbalances. A more intensive use of the term deposit mechanism could then come into play.

Note that another way to alleviate the downward pressure on the federal funds rate, simply consists of increasing the IOER rate to provide a better incentive to banks to tap federal funds to exploit a more engaging arbitrage opportunity. There are a certain number of obstacles with regards to this approach. For instance, this measure would be more costly for the Fed, and the notion of a central bank compensating commercial banks more generously might not sit well with the American public. There could also be more unintended consequences, for example if markets wrongly interpret this gesture as a more pronounced tightening. In all likelihood, the Fed would try this method only as a last resort.

Alternatively, one could question the goal of these maneuvers, that is, to artificially maintain a certain level of demand for federal funds. Could it be simpler to quickly

Table 1

<i>Facility</i>	<i>Use</i>	<i>Eligibility</i>	<i>Current target</i>	<i>Expected target¹</i>
Federal funds	Mechanism through which financial institutions exchange reserves. This is the Fed's main policy rate	U.S. banks, U.S. subsidiaries of foreign banks, government-sponsored enterprises, money-market investment firms	0.00% to 0.25%	0.25% to 0.50%
Overnight reverse repurchase (ON RRP)	Facility that will be used to create an arbitrage designed to prevent a drop in the federal funds rate below the targeted lower bound	U.S. banks, U.S. subsidiaries of foreign banks, government-sponsored enterprises, money-market investment firms	around 0.05% (trial period)	0.25%
Interest on excess reserves (IOER)	Main tool that the Fed intends to use to guide the federal funds' rate upwards	U.S. banks, U.S. subsidiaries of foreign banks, trusts	0.25%	0.50%
Term deposit	Mechanism that will drain reserves and ease downwards pressure on the federal funds' rate	U.S. banks, U.S. subsidiaries of foreign banks, trusts	1 to 3 basis points above the IOER rate	1 to 3 basis points above the IOER rate

¹ After the first hike.
 Source: Desjardins, Economic Studies

revert to a fixed target for the federal funds rate and drain excess reserves more thoroughly from the system to facilitate the process? It is one of the questions that might arise if the Fed's preferred approach either failed or proved unnecessarily complex.

CONCLUSION

Table 1 summarizes the tools available to the Fed. All in all, monetary policy will not yet operate as it did before the crisis. The implementation of a rise in interest rates after a long period of low rates, in conjunction with a balance sheet that has taken a monumental size, will be almost as experimental as the rolling out of the unconventional measures observed in recent years. The initial period may well be marked by trial and error, but the Fed should quickly be able to determine the appropriate calibration to carry out its interest rate policy.

In the base case, sometime after the first increase in interest rates, the Fed will begin to reduce the size of its balance sheet by ceasing reinvestments in Treasury assets held in its portfolio. The amount of reserves within the financial system should then decrease, gradually eliminating an important factor hampering a genuine return to a traditional monetary policy regime. At this point, the interest on excess reserves will have become a much less influential element. Neither will monetary policy any longer need the crutch of a specially-dedicated repo facility or a term deposit mechanism. These developments are not around the corner, however. Until then, the so-called normalization will feature many abnormal elements!

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