

The Fed Should Fix the Interest on Reserves Floor

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OPEN
MARKET
COMMITTEE

Shadow Open Market Committee Meeting New York,
New York
March 20, 2015

 Economic Policies
for the 21st Century
AT THE MANHATTAN INSTITUTE

The Federal Reserve should fix the interest on reserves floor for the federal funds rate to facilitate the normalization of interest rate policy without interfering in financial markets. Instead, the Fed's intention to employ reverse repurchase agreements to establish a funds rate floor inserts the Fed into money market arbitrage and violates the minimum intervention principle of central banking.

Prior to the financial panic in the fall of 2008, when the Fed wished to raise interest rates it sold securities to drain aggregate reserves from the banking system. Banks pushed the federal funds rate higher as they bid harder among themselves for increasingly scarce reserves. The Fed then paid zero interest on reserves. Banks economized on reserve demand. And the Fed managed the federal funds rate by varying the scarcity of aggregate bank reserves within a relatively small range, well under \$50 billion.

Today, with \$3 trillion of bank reserves outstanding it is *impractical* for the Fed to raise the federal funds rate by recreating a scarcity of bank reserves. The Fed would have to drain all but a few hundred billion dollars of reserves to recreate a scarcity sufficient to

push the federal funds rate much above zero. The hurried, discretionary sale of the huge quantities of long-term Treasuries and mortgage backed securities would be highly disruptive. Sales would best be undertaken according to a timetable, and would take time that the Fed does not have before it must raise interest rates.

Alternatively, the Fed could utilize measures to *encumber* reserves without selling securities. In principle, reserve requirements could tie up reserves and create a scarcity relatively quickly; however, the Fed would need legislation to utilize reserve requirements flexibly at higher ratios than currently allowed. The Fed could create a scarcity of reserves by offering term deposits to banks at attractive rates relative to interest on reserves, or by borrowing in money markets via managed liabilities such as reverse repurchase agreements. However, the Fed could not be confident of raising the federal funds rate with any degree of precision starting from such an unprecedented, enormous abundance of reserves.

The Fed anticipated the problem in May 2008 when it asked Congress to expedite its authority (to begin in 2011 under the Financial Services Regulatory Relief Act of 2006) to pay interest on reserves.

After receiving permission to do so, the Fed began to pay interest on reserves for the first time on October 6, 2008 in the midst of the financial crisis.

The idea was that interest on reserves would create a floor below which banks will not lend to each other. Hence, interest on reserves would enable the Fed to create bank reserves on a massive scale to finance the re-intermediation of distressed banking and money markets, while supporting a federal funds rate target at the interest on reserves floor deemed appropriate for stabilizing employment and inflation.² By early 2009, the Fed had created around \$1 trillion of new reserves to finance a like volume of credit initiatives, and had cut interest on reserves to ¼ percent in December 2008 against the Great Recession.

The recently released *FOMC Transcript* from June 23-4, 2009 shows that the Fed also planned to employ the interest on reserves floor as the primary means to exit the zero interest bound and tighten monetary policy without first shrinking its balance sheet and creating a scarcity of reserves. But there was a problem: the *Transcript* reports on

² See M. Goodfriend “Interest on Reserves and Monetary Policy, Federal Reserve Bank of New York *Economic Policy Review*, May 2002, Volume 8, Number 1, pages 77-84.

page 19 that the federal funds rate regularly traded 50 basis points or more *below* interest on reserves for much of the 4th quarter of 2008.

We can understand the problem as follows. The federal funds rate equilibrates the supply and demand for *overnight balances* held at the Fed. The Fed determines the *supply* of overnight balances via its monetary and credit balance sheet policies. Institutions eligible to hold overnight balances at the Fed determine the *demand*. When the Fed creates an abundance of overnight reserve balances, these institutions put downward pressure on the federal funds rate as they try to lend their excess Fed balances to other eligible borrowers. If all institutions that hold overnight balances at the Fed also receive interest on their balances, i.e., interest on reserves, then the federal funds rate will settle no lower than the interest on reserves floor.

The interest on reserves floor for the federal funds rate failed, and continues to fail to this day, because non-depository institutions (such as government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac, and Federal Home Loan Banks (FHLBs)) are *authorized* to hold overnight balances at the Fed, but are *not eligible* to receive interest on

those balances. Hence, the GSEs and FHLs have an incentive to try to earn interest on their overnight balances at the Fed by lending them to depositories eligible to receive interest on their reserve balances. The federal funds rate is thereby driven below interest on reserves to the point that depositories are willing to borrow from the GSEs and the FHLBs, deposit the proceeds at the Fed, and earn the spread between interest on reserves and the federal funds rate.

In practice, a number of factors conspire to limit such arbitrage. The June 2009 *FOMC Transcript* mentions on page 19 impediments such as line limits, banks' concerns about capital constraints, and possible adverse perceptions associated with significant overnight borrowing in the federal funds market. The New York Fed's *Domestic Open Market Operations During 2013* mentions on page 21 uncertain or rising balance sheet costs—related in part to regulatory changes in recent years, including higher capital requirements, leverage and liquidity requirements, and changes in the fee assessment calculation for FDIC deposit insurance. The 2013 report also cites concentration in

banking and the lack of strong competition among banks with access to interest on reserves as a factor weakening arbitrage.

Allowing the federal funds rate to fluctuate below interest on reserves complicates interest rate policy by creating doubt about whether interest rates beyond the banking system that matter for borrowing and lending will follow interest on reserves or the federal funds rate. The simplest and most effective way to ensure that the Fed can manage the federal funds rate precisely and flexibly as it exits the zero interest bound without shrinking its balance sheet or creating a scarcity of reserves is to *fix the interest on reserves floor for the federal funds rate*.

The Fed's July 2009 *Monetary Policy Report to Congress* points out on page 37 that interest paid on bank reserves worked successfully for other central banks to put a floor under interbank rates in their economies even as central banks created bank reserves aggressively during the financial crisis. The Fed should follow suit and ask Congress to amend existing interest on reserves legislation to secure the floor for the federal funds rate in the United States--either to allow only

depository institutions to hold balances at the Fed, or to allow non-depository institutions holding balances at the Fed to receive interest on those balances. So strengthened, interest on reserves policy would provide the Fed with a precise, flexible, and reliable means of raising the federal funds rate without first shrinking the Fed's balance sheet.

Some might say that the interest on reserves floor for the federal funds rate is an idea that works in *theory* but not in *practice*. It is more appropriate to say that the interest on reserves floor works in *theory* but not with *politics*. One wonders why and when the government authorized, and the Fed accepted, non-depository institution balances in the first place given that non-depositories have no role in the payments system and no need or reason to hold balances at the central bank. Has the Fed ever requested legislation to fix the interest on reserves floor for the federal funds rate? We don't know.

We do know that according to the FOMC's September 17, 2014 "Policy Normalization Principles and Plans" the Fed intends to put a floor under the federal funds rate by borrowing on a large scale from money markets via overnight reverse repurchase agreements (ON

RRPs), if need be, offering ON RRP at a fixed interest rate in "full allotment," satisfying any level of market demand at that rate. The Fed would set its rate for ON RRP at or slightly below interest on reserves as it normalizes interest rates. The fixed rate, full allotment ON RRP facility would enable the GSEs and the FHLBs holding overnight balances at the Fed to earn the ON RRP rate, and thereby put a floor under the federal funds rate. In addition, the Fed's ON RRP facility would attract funds from money market participants more broadly, including from money market mutual funds, which would tighten the Fed's control of money market rates more generally.

The Fed's planned use of ON RRP is unfortunate because the use of managed liabilities on a large scale via ON RRP addresses an *operational issue* by violating an *implicit principle of central banking* in the United States--that where possible the central bank should minimize its interference in financial intermediation and credit allocation in managing the monetary system. Moreover, it is unfortunate because with modest legislative support from Congress the Fed could manage the

federal funds rate precisely and flexibly by securing the interest on reserves floor without interfering more broadly in financial markets.

The Fed's intended use of ON RRP's violates the minimal intervention principle of central banking by turning the Fed into a financial intermediary operating directly on a large scale beyond the banking system with the potential to distort short term credit allocation and enable disruptive flight-to-quality flows during periods of financial distress. Rather than inserting itself into money market arbitrage, the Fed should work to ensure that its regulation and supervision of depositories in general, and its imposition of liquidity coverage, leverage, and capital ratios specifically, do not interfere unduly with efficient financial market arbitrage between depository and money market interest rates.