

The Fed Exit Monitor V.1

December 17, 2014

Introduction

The Federal Reserve Bank of New York is currently undertaking experimental monetary operations.

The aim of these experiments is to enable the FRBNY to gather experience with its new monetary instruments—instruments that will be critical to ensure a smooth implementation of the exit strategy.

Since Lehman Brothers filed for bankruptcy in September 2008, the Federal Reserve has been unable to control its operational target—the fed funds effective rate¹. This was a significant source of concern between September 16, 2008 and December 16, 2008. During that time the Fed was still attempting to target a nonzero policy rate. Once the decision was taken, 6 years ago, to abandon a point target and adopt a band (0 – 25 bps), including the zero lower bound, the Fed’s inability to control the operational rate became immaterial. But with exit—raising the fed funds rate—on the horizon, the Fed knows that it will need to regain control over its operational target. In other words, the operational arm of the Fed, the FRBNY, is preparing to receive the eventual call from the FOMC in Washington to raise rates.

The *Fed Exit Monitor* will observe and report on this experimentation. This inaugural issue will provide some background on the problem and discuss the first experiments. Future issues will follow progress toward what I believe will be an eventual significant ramp up in the use of three instruments, Term Deposits, Reverse Repos and US Treasury deposits, prior to an eventual rise in the operational target.

The FRBNY first intentionally raised the fed funds rate on December 1, 2014:

The exit is underway

Background

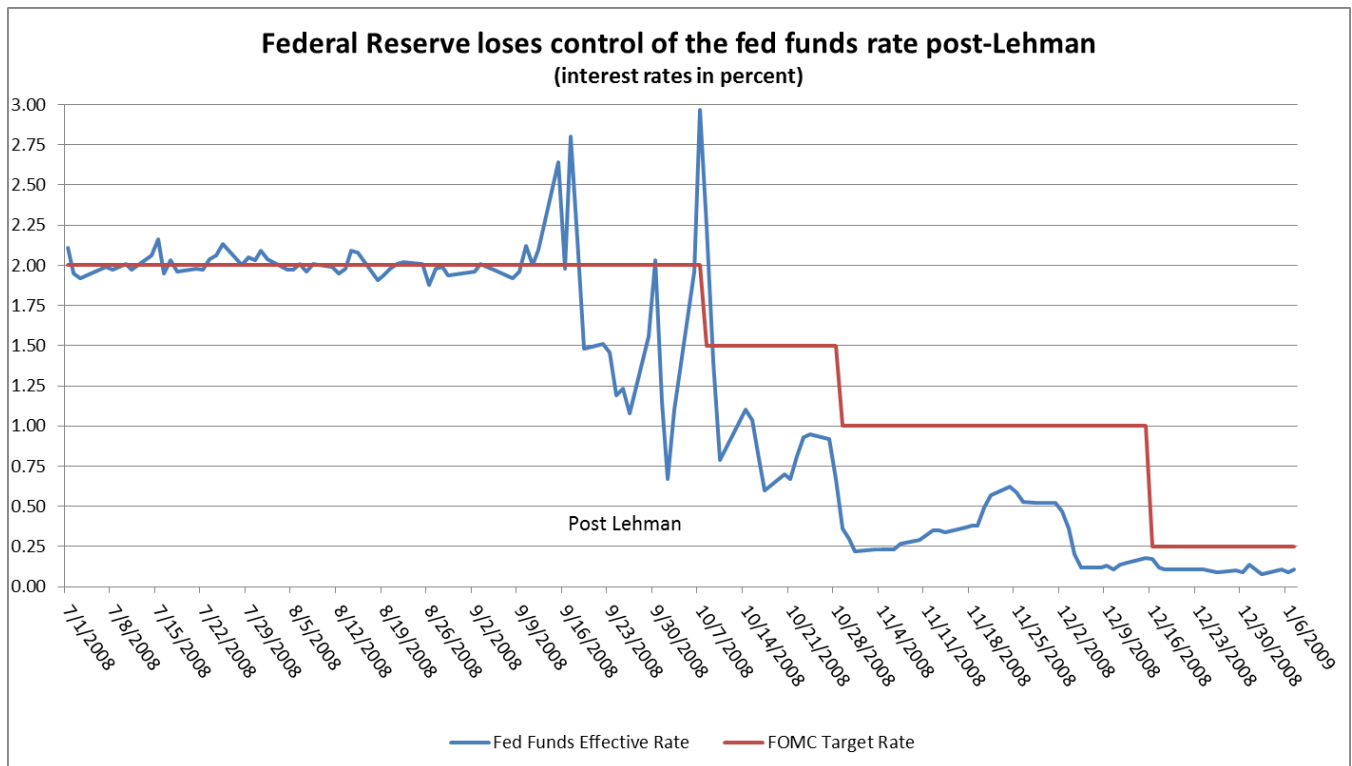
The FRBNY lost control of the fed funds rate after Lehman. Prior to that time, although the Fed had expanded the asset side of its balance sheet by \$390 billion through various crisis related interventions it had absorbed the related increase in bank reserves by selling \$300 billion in US Treasury securities and reducing its liquidity providing repos by \$80 billion². In other words, FRBNY was increasing bank reserves (liabilities) with one hand and immediately decreasing them with another leaving the overall size of the balance sheet largely unchanged. Equilibrium in the market for overnight balances at the Fed was thereby preserved at the FOMC target rate. From the financial market’s point of view, they were providing the Fed dodgy collateral (trash) to obtain financing to acquire Treasuries.

¹ The “fed funds effective rate” is the daily transaction-value weighted average interest rate on brokered trades for unsecured overnight fed funds—overnight deposits at one of the 12 Federal Reserve Banks. A “trade” is an agreement between two parties wherein the lender transfers FRB balances it holds through FEDWIRE to the borrower in expectation that the later will reverse the transaction next day plus interest. The FRB is neither a lender nor borrower in a trade. It merely collects data from brokers, calculates and publishes the effective rate.

² An increase in demand for currency accounted for the remainder of the absorption of reserves.

In the days following Lehman, it quickly became apparent that the FR Banks did not hold enough Treasuries to maintain equilibrium in the money market at a nonzero interest rate. The FR held only \$480 billion in Treasuries on September 10, 2008 whereas it was to increase its nonconventional assets by over \$850 billion by October 22, 2008. Although the US Treasury responded by assisting the Fed with its Supplementary Financing Program, augmenting its deposits at the FRBs, it was not enough to keep the fed funds rate at the FOMC target—as shown below. Bank reserves increased by 7 times, from \$32 billion on September 10 to \$227 billion on October 22³.

The fed funds rate before and after Lehman (weekend of September 13 -14) is shown below.



Exit preparations center on regaining control of the fed funds market prior to attempting to raise the rate. Laying the ground for the exit essentially involves action to bring the overnight money market back into equilibrium, something that has not been important—from an operational standpoint—for 6 years. The situation in which the Fed finds itself is somewhat akin to a driver who realizes her brakes no longer work just prior to beginning a difficult drive uphill for an extended period of time. Before the descent begins, something must be done to ensure that the brakes will function. Although the emergency brake could be used, it would be quite damaging to the system as a whole.

The Fed has already outlined the anticipated journey or sequencing of the exit. The first step in the strategy has been taken, to curtail and then eliminate the large scale asset purchases (LSAPs) that

³ That is a compound annual rate of increase in excess of 500 million percent.

continued to add reserves to the banking system. As can be seen from the two balance sheets below, bank reserves rose from \$16 billion pre-crisis to \$2821 billion at the end of the LSAP program.

Consolidated Balance Sheet of the Federal Reserve Banks

October 15, 2014

(in US\$ billions)

Assets		Liabilities	
US Treasuries	2567	FR Notes Outstanding	1252
MBS and Agencies	1832	Bank Deposits (Overnight)	2821
Net Other Assets	53	Bank Deposits (Term)	0
		Reverse Repos	221
		US Treasury Deposits	101
		Equity	56
Total Assets	4452	Total Liabilities	4452

Source: Federal Reserve Board Release H.4.1 and Author's calculations

Consolidated Balance Sheet of the Federal Reserve Banks

December 5, 2007

(in US\$ billions)

Assets		Liabilities	
US Treasuries	780	FR Notes Outstanding	782
Liquidity Providing Repos	47	Bank Deposits (Overnight)	16
Net Other Assets	50	Reverse Repos	37
		US Treasury Deposits	5
		Equity	37
Total Assets	876	Total Liabilities	876

Source: Federal Reserve Board Release H.4.1 and Author's calculations

Not surprisingly, the fed funds rate has been trading below 25 bps for more than 6 years.

During the second step of the normalization process, overnight bank deposits at the Federal Reserve, “fed funds”, would be *reduced* in overall magnitude by (1) ceasing to roll over maturing securities in the Fed’s portfolio; (2) an increase in the program of term deposit auctions; and (3) an increase in reverse repurchase agreements or “reverse repos”. The latter two tools would essentially convert bank overnight deposits (fed funds) into longer term deposits in the first case and collateralized loans to the Federal Reserve in the second. Ceasing to roll over Treasury and government sponsored agency (GSE) debt would drain reserves by requiring the Treasury or GSE to issue more debt to the public than otherwise would be the case and to use the proceeds obtained to redeem their debt held by the Fed. Thus bank reserves used by the public to purchase the additional securities from the Treasury or GSE would be cancelled from the Fed balance sheet (on the liability side) once they are provided by the issuer to redeem their debt held by the Fed (thus Fed assets would fall by an identical amount).

The FOMC has announced that it will continue to reinvest the proceeds of maturing Treasury and Agency securities until after it raises the operational target, consequently FRBNY is currently experimenting only with term deposits (TD) and reverse repos (RRP). The quantitative impact of the TD experiment is evident in the most recent published balance sheet. Overnight bank reserves have fallen by \$392 billion since mid-October 2014 while TDs have increased by \$402 billion.

Consolidated Balance Sheet of the Federal Reserve Banks

December 10, 2014

(in US\$ billions)

Assets		Liabilities	
US Treasuries	2572	FR Notes Outstanding	1277
MBS and Agencies	1847	Bank Deposits (Overnight)	2429
Net Other Assets	43	Bank Deposits (Term)	402
		Reverse Repos	247
		US Treasury Deposits	49
		Equity	57
Total Assets	4462	Total Liabilities	4462

Source: Federal Reserve Board Release H.4.1 and Author's calculations

The Fed announced on September 4, 2014 that it would conduct a series of 7-day TD auctions beginning in October 2014. The results of the last 4 auctions (and the last in the series) is shown below.

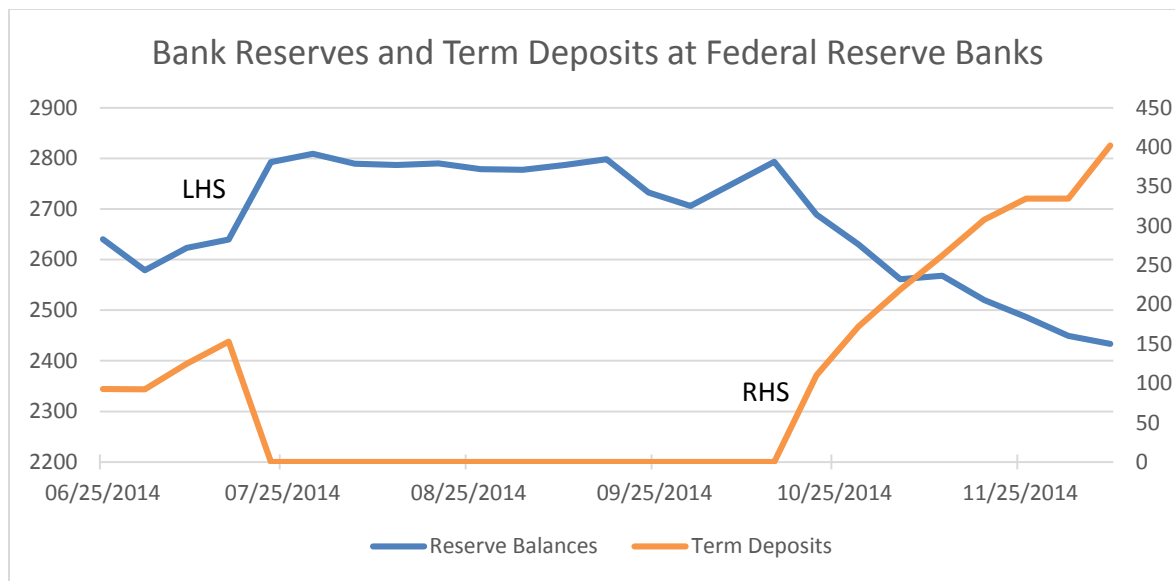
Term Deposit Experiment

in USD billions

Settlement date	Maturity Date	Amount	Rate	Participants
13-Nov-14	20-Nov-14	307.8	27	80
20-Nov-14	26-Nov-14	316.0	28	85
26-Nov-14	4-Dec-14	334.7	29	90
4-Dec-14	11-Dec-14	402.1	30	97

Term Deposits 12 November 2014 262.1 26

As the Fed gradually increased the offer rate on the 7-day deposit above the 25 bps it currently pays on overnight deposits, an increasing number of banks participated, placing an increasing amount of funds. In a very operational sense, the Fed was estimating the “demand curve” for term deposits. The impact of increasing term deposits on the quantity of bank reserves (overnight deposits) is evident in the graph below. By increasing the rate offered on TD, the Fed will be able to tighten the overnight market.



The FRBNY has also experimented with changes in the reverse repo rate and with term reverse repos. The primary purpose of the RRP instrument is to set a floor on the fed funds rate. The rate paid by the Fed on reserves, known as the interest on reserves rate (IORR) is not serving that purpose primarily owing to the fact that not all deposit holders at the FRBs (Freddie, Fannie, GNMA, and the Federal Home Loan Banks) receive IOR. Consequently they are willing to lend to banks at less than the IORR. The introduction of the RRP program was designed to establish a floor on the unsecured overnight rate for those non-depository institutions, aka nonbanks.

FRBNY has been engaging in an interesting series of experiments with both overnight and term reverse repos since the beginning of November, the results of which are shown below:

Overnight Reverse Repo Experiment

in USD billions

Settlement dates		Max Amount	Rate	Amount
30-Oct-14	31-Oct-14	300	5	117
3-Nov-14	14-Nov-14	300	3	106<->153
17-Nov-14	28-Nov-14	300	7	121<->154
1-Dec-14	12-Dec-14	300	10	86<->166
December 15 and after		300	5	35<->41

Term Reverse Repo Experiment

in USD billions

Settlement date	Maturity Date	Bid/Offer Amount	Rate	Duration
8-Dec-14	5-Jan-15	101.9/50	8	4 weeks
15-Dec-14	5-Jan-15	75.1/50	7	3 weeks
22-Dec-14	5-Jan-15	100	(max) 10	2 weeks
29-Dec-14	5-Jan-15	100	(max) 10	1 week

Target total amount maturing 5 January 2015

300

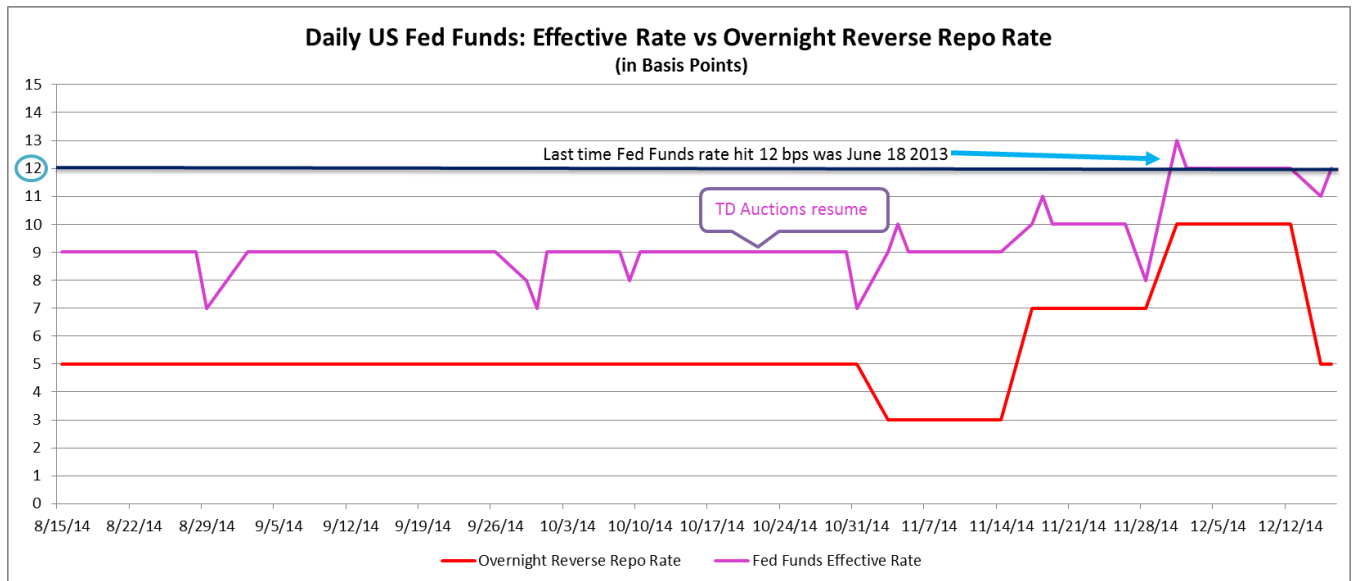
Essentially the Fed raised the overnight RRP rate to 10 bps for the first two weeks of December at the same time promising to lower the rate to 5 bps subsequently. That set up an interesting decision for money managers...whether to accept 10 bps overnight for a limited period of time and then 5 bps or to bid for a longer term RRP at a rate somewhere in the middle. As can be seen in the first table, the amount being placed in overnight RRP declined significantly once the rate was reduced to 5 bps.

A closer look at behavior in the overnight RRP auctions is provided below:

Overnight Reverse Repo Operations since
December 1

	Amount	Participants	Rate
1-Dec-14	154.6	58	10
2-Dec-14	153.5	64	10
3-Dec-14	166.3	59	10
4-Dec-14	142.6	49	10
5-Dec-14	145.5	56	10
8-Dec-14	104.2	56	10
9-Dec-14	94.4	49	10
10-Dec-14	105.3	46	10
11-Dec-14	99.8	44	10
12-Dec-14	86.4	39	10
15-Dec-14	34.6	26	5
16-Dec-14	40.7	29	5

The combined impact of the TD and RRP experiments is shown below.



Exploiting its new instruments, the FRBNY has managed to raise the fed funds rate to its highest level in 18 months and kept it there despite the cut in the overnight RRP rate. So far so good.

Expect more experimentation to follow today's FOMC meeting.

Peter Stella
December 17, 2014