

Monetary Operations 101

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Real-World Banking 101

Mainstream view of reserve balances (RBs) is that they “finance” bank balance sheet expansion via rising excess reserves (ER)

↑ RBs → ↑ ER → ↑ Loans and ↑ Deposits

Money multiplier ($1/rrr$ in its simplest form) then tells how much loans and deposits can increase given a rise in RBs and ER

Real-World Banking 101

That is a fixed FX, gold standard model. In the real world, loans create deposits

Assets	Liabilities & Equity
+ 100 Loan	+100 Deposit

That is, a bank's ability to expand its balance sheet not limited by quantity of RBs or fractional RR

Real-World Banking 101

Additional RR are obtained as needed in money markets or, if not obtained elsewhere, via borrowing from Fed at a penalty

Assets	Liabilities & Equity
+ 100 Loan	+100 Deposit
+ 10 RBs	+ 10 Borrowings

Real-World Banking 101

Deposit outflows, if they exceed the bank's RBs, result in overdrafts. Banks clear this via lowest cost available in money markets or from the Fed.

Assets	Liabilities & Equity
+ 100 Loan	+100 Deposit
- 100 RBs	-100 Deposit
+ 100 RBs	+100 Borrowings

Real-World Banking 101

Alan Holmes, NY Fed, 1969

“real-world banks extend credit, creating deposits in the process, and then look for reserves later.”

More precisely, though . . .

- Liabilities created may be non-reservable
- Deposit outflows may not result in reduced RBs
- Securitization

So, extending credit and creating new bank liabilities are mostly unrelated to desired RB levels.

Real-World Banking 101

A more fundamental approach . . .

For what do banks use RBs?

1. Settle payments with govt, clearinghouses, and other banks
2. RR

Expanding its balance sheet creates a potential short position in RBs for the bank, which can affect the profitability of a loan, not the bank's operational ability to create the loan.

In other words, it's about PRICE, not QUANTITY

Fed Funds Market 101

- Banks' Demand for RBs is very interest inelastic
 - Need AT LEAST enough to meet RR and settle payments
 - Have NO USE for more than this qty
 - No Remuneration
 - Loans create Deposits

Fed's Balance Sheet 101

Fed Assets = Securities held + Fed loans to banks + Float
+ Gold + SDR + Other Assets

Fed Liabilities = Currency + Reserves +
Treasury Account + Foreign Accts
+ Other Liabs

Due to Accounting Identity:

Reserves = Fed Assets - Non-Reserve Liabilities

Fed's Balance Sheet 101

- Banks in the aggregate cannot create/destroy RBs
 - Borrowing/lending among banks simply shifts RBs from one bank to another
- Only changes to the Fed's balance sheet alter aggregate RBs
 - Fed Repos/Reverse Repos/outright Purchases
 - Fed lending/overdrafts
 - Autonomous changes to Fed's balance sheet (currency, Treasury's account, float, foreign RPs)

Fed Funds Rate Targeting 101

Desk offsets autonomous changes to Fed's balance sheet— “operating factors”—while accommodating inelastic Demand for RBs at Target Rate

Table 2

DAILY AUTONOMOUS FACTORS CHANGE AND FORECAST MISSES (MILLION \$)

Daily Change (Absolute Values)	<u>2004</u>		<u>2005</u>		<u>2006</u>	
	<u>Average</u>	<u>Max.</u>	<u>Average</u>	<u>Max.</u>	<u>Average</u>	<u>Max.</u>
Currency in Circulation	918	3,510	855	2,930	927	3,112
Treasury balance	763	4,272	704	4,942	585	6,945
Foreign RP pool	599	5,219	756	6,773	805	5,666
Float	721	5,724	943	6,572	1,192	6,853
Net Value*	1,356	7,209	1,666	7,483	1,887	11,747

Fed Funds Rate Targeting 101

- Supplying more RBs than banks desire at target rate sends Fed Funds Rate to Fed's bid rate (currently zero).
- Supplying fewer RBs than banks desire at target rate sends Fed Funds Rate to Fed's ask rate (currently 50bp above Target).

Supplying too many or too few balances is thus DE FACTO interest rate targeting at the bid or the ask—it's about PRICE, not QUANTITY!

Fed Funds Rate Targeting 101

- Operationally, primary function of RR is to improve Desk's ability to achieve Target Rate
 - Less likely to incur overnight overdrafts
 - Averaging Provisions for RR
- But . . . more fundamentally . . . potential deviation of Fed Funds Rate from Target Rate is set by “spread” between Fed's bid (rate paid on RBs) and ask (rate charged borrowings from Fed)

Target Rate Changes 101

The conventional textbook view is that the Trading Desk buys and sells securities in response to policy easings and tightenings [i.e., the liquidity effect]. From the Desk's perspective, however, the supply-demand balance is primarily a function of the demand for required balances, which is almost completely insensitive to small changes in policy. *Consequently, any change in the [FOMC's] target has virtually no effect on excess supply or demand in the funds market [i.e., the period-average need].* (Krieger 2002, 74; emphasis added)

Target Rate Changes 101

In other words, there is NO “liquidity effect” associated with changes in the Target Rate

– Recall Real-World Banking 101

- Banks can do nothing with more RBs than necessary to settle payments and meet RR

– Recall Fed Funds Mkt 101 and Targeting 101

- More than desired RBs reduces rate to Fed’s bid (currently 0)
- Fewer than desired RBs raises rate to Fed’s ask (currently discount rate + stigma)

Target Rate Changes 101

More fundamentally . . .

CBs can change Target Rate by simply announcing increases/decreases in bid/ask rates (“open mouth operations”) and adjusting the stop RATE on open market operations.

It's about PRICE, not QUANTITY

Target Rate Changes 101

Given RR, higher/lower Fed Funds Target Rate shifts banks' demand for RBs, with a lag

- Higher federal funds rate

- Greater benefit to banks from sweeps
- Less RCBs needed to cover costs of pmt services
- DDs less attractive to customers

- Lower federal funds rate

- Smaller benefit to banks from sweeps
- More RCBs needed to cover costs of pmt services
- DDs more competitive

Causation is from Target Rate to Demand for RBs, *not vice versa*

Again, it's about PRICE, not QUANTITY

Some Alternative Proposals

Fullwiler (2005), Lacker (2006), Whitesell (2006)

- Pay interest on reserve balances
- Supply substantial qty of excess balances
- Target rate = rate paid on reserve balances
- Change target by changing rate paid on reserve balances

Some Alternative Proposals

With a sweep service in place paying interest at the target rate, monetary policy operations could in principle be substantially simplified by supplying, via open market purchases, more reserves than the banking system wishes to hold.

The market funds rate thus would not rise above the sweep rate, except to reflect borrower-specific risk. The New York Fed staff would merely need to provide an amount of reserves that will be sufficient to oversupply the system with reserves and meet daylight settlement needs. But they would not need to estimate daily reserves

Lacker 2006

In Conclusion

- Fed necessarily sets an interest rate target
- PRICE, not QUANTITY, of RBs is what matters regarding expansion of bank balance sheets
- Operations could be greatly simplified if these were facts were understood