

Chapter 16 - Tools of Monetary Policy

Players in the Money Supply Process

- Central bank (Federal Reserve System)
- Banks (depository institutions; financial intermediaries)
- Depositors (individuals and institutions)
- Borrowers

Federal Reserve System	
Assets	Liabilities
Government securities	Currency in circulation
Discount loans	Reserves

- Monetary Liabilities
 - Currency in circulation: in the hands of the public
 - Reserves: bank deposits at the Fed
- Assets
 - Government securities: holdings by the Fed that affect money supply and earn interest.
 - Fed now holding MBS.
 - Discount loans: provide reserves to banks and earn the discount rate

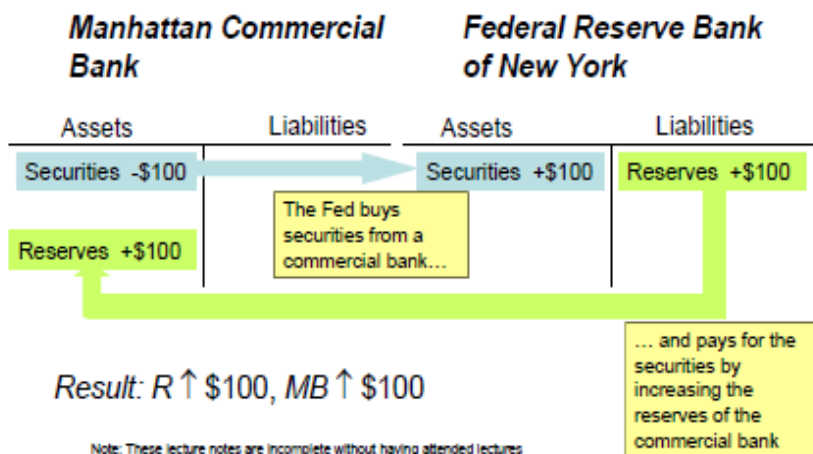
Monetary Base (High Powered Money)

High-powered money: $MB = C + R$

C= currency in circulation

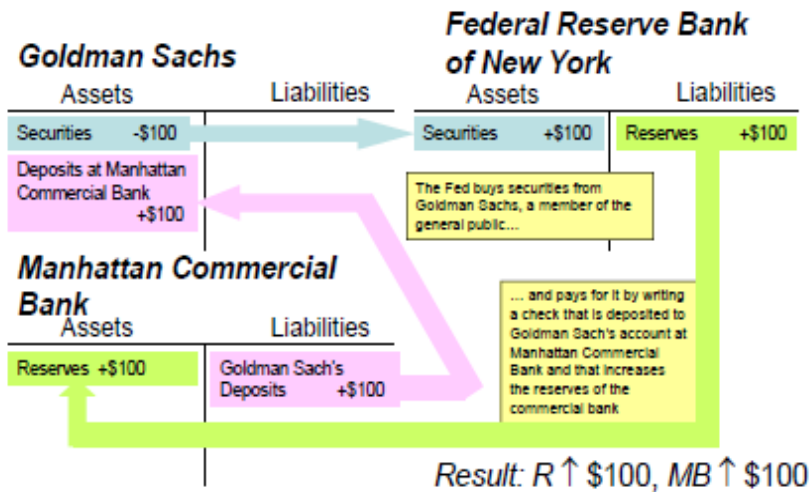
R=total reserves in the banking system (includes vault cash)

The Money Supply Process: Fed Open Market Purchase From a Commercial Bank (Assume a 10% reserve requirement)



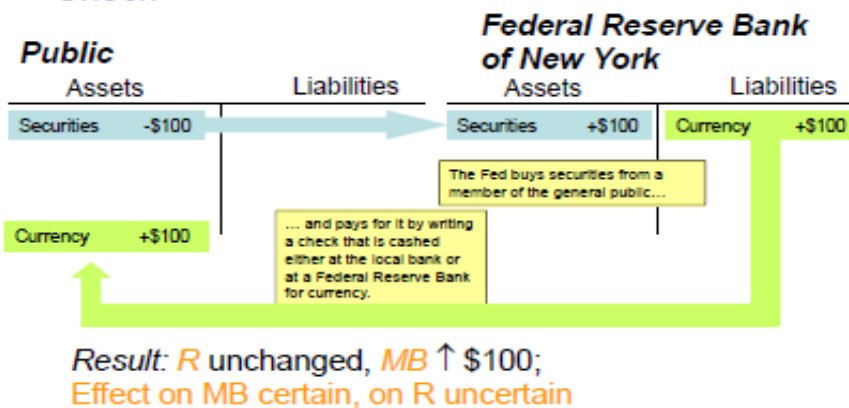
- Reserves have increased by \$100.
- What about excess reserves?
- No change in currency
- Monetary base (C + R) has increased by \$100
- Has the money supply changed?

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Open Market Purchase from Public: Cashing a Check

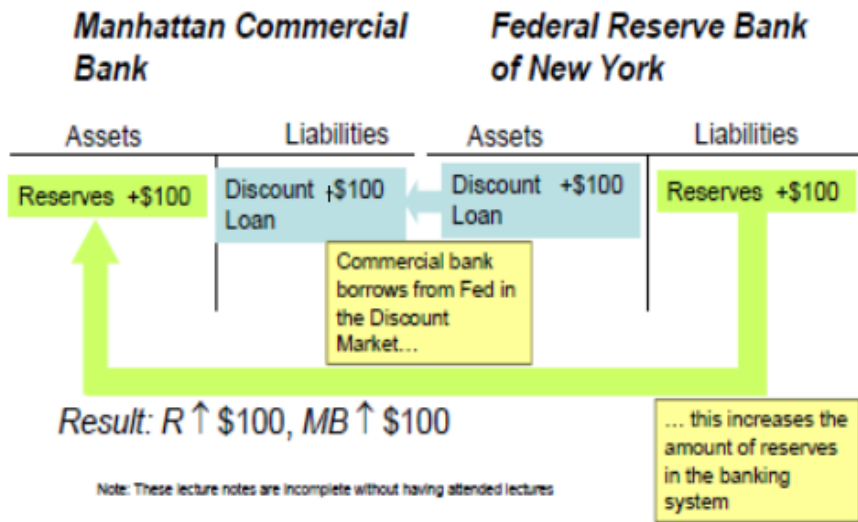


- The person selling the bonds cashes the Fed's check
- Reserves are unchanged
- Currency in circulation increases by the amount of the open market purchase
- Monetary base (C+R) increases by the amount of the open market purchase

Open Market Purchase: Summary

- The effect of an open market purchase on reserves depends on whether the seller of the bonds keeps the proceeds from the sale in currency or in deposits
- The effect of an open market purchase on the monetary base always increases the monetary base by the amount of the purchase

Fed Discount Loan to a Bank



Fed's Ability to Control the Monetary Base

- Open market operations are controlled by the Fed
- The Fed cannot determine the amount of borrowing by banks from the Fed
- Split the monetary base into two components
 $MB = MB_n + BR$
- The money supply is positively related to both the non-borrowed monetary base MB_n and to the level of borrowed reserves, BR , from the Fed

Deposit Creation (Single Bank):

Fed open market purchase from First National Bank

Creation of Deposits (assuming 10% reserve requirement and the initial \$100 increase in reserves)

Bank	Increase in Deposits (\$)	Increase in Loans (\$)	Increase in Reserves (\$)
First National	0.00	100.00	0.00
A	100.00	90.00	10.00
B	90.00	81.00	9.00
C	81.00	72.90	8.10
D	72.90	65.61	7.29
E	65.61	59.05	6.56
F	59.05	53.14	5.91
.	.	.	.
.	.	.	.
.	.	.	.
Total for all banks	1,000.00	1,000.00	100.00

The Formula for the Deposit Multiplier

Note:

- Holding cash stops the deposit creation process
 - Currency removes funds from the banking system and has no multiple deposit expansion
- Holding excess reserves stops the deposit creation process
 - Banks may not use all of their excess reserves to buy securities or make loans.
- Depositor decisions (how much currency to hold) and bank's decisions (amount of excess reserves to hold) affect the money supply and the Fed's ability to control the money supply.

The Money multiplier

Money (M1) = currency + checkable deposits = C+D

Case Study: The Great Depression Bank Panics, 1930 – 1933

- Bank failures (and no deposit insurance) caused:
 - Increase in deposit outflows and holding of currency (depositors)
 - An increase in the amount of excess reserves (banks)

