Chapter 15

Multiple Deposit Creation and the Money Supply Process

The Money Supply Process

- Players
  - central bank: the Fed
  - banks
  - depositors
  - borrowers from banks
- Functions of the Federal Reserve System
  - conducts monetary policy
  - clears checks
  - regulates banks

The Fed's Balance Sheet

Federal Reserve System

Assets	Liabilities
Government securities	Currency in circulation
Discount loans	Reserves

Monetary Base (high-powered money), MB = C + R

Open Market Operations

Open Market Purchase from a Bank

The Banking System

Assets	Liabilities
Securities – \$100	
Reserves + \$100	

The Fed

Assets	Liabilities
Securities + \$100	Reserves + \$100

Open Market Purchase from the Public

Public

Assets	Liabilities
Securities – \$100	
Deposits + \$100	

The Fed

Assets	Liabilities
Securities + \$100	Reserves + \$100

Banking System

Assets	Liabilities
Reserves + \$100	Checkable Deposits + \$100

***Result: R*↑ \$100, *MB*↑ \$100**

Open Market Operations (cont.)

Open Market Purchase from the Public (check cashed)

Public

Assets	Liabilities
Securities – \$100	
Currency + \$100	

The Fed

Assets	Liabilities
Securities + \$100	Currency + \$100

Result: ***R*** **unchanged,** ***MB*** **↑ \$100**

Effect of open-market operation on ***MB*** **certain, on** ***R*** **uncertain**

Shifts From Deposits into Currency

Public

Assets	Liabilities
Deposits – \$100	
Currency + \$100	

The Fed

Assets	Liabilities
	Currency + \$100
	Reserves – \$100

Banking System

Assets	Liabilities
Reserves – \$100	Deposits – \$100

Result: ***R*** **↓ \$100,** ***MB*** **unchanged**

Discount Loans

Banking System

Assets	Liabilities
Reserves + \$100	Discount loan + \$100

The Fed

Assets	Liabilities
Discount loan + \$100	Reserves + \$100

Result: R **↑ \$100,** ***MB*** **↑ \$100**

Conclusion: **Fed has better ability to control** ***MB*** **than** ***R***

Deposit Creation: Single Bank

First National Bank

Assets		Liabilities	
Securities	– $100		
Reserves	+ $100		

First National Bank

Assets		Liabilities	
Securities	– $100	Deposits	+ $100
Reserves	+ $100		
Loans	+ $100		

First National Bank

Assets		Liabilities	
Securities	– $100		
Loans	+ $100		

Deposit Creation: Banking System

Bank A

Assets		Liabilities	
Reserves	+ $100	Deposits	+ $100

Bank A

Assets		Liabilities	
Reserves	+ $10	Deposits	+ $100
Loans	+ $90		

Bank B

Assets		Liabilities	
Reserves	+ $90	Deposits	+ $90

Bank B

Assets		Liabilities	
Reserves	+ $ 9	Deposits	+ $90
Loans	+ $81		

Deposit Creation – Example

Table 1 Creation of Deposits (assuming 10% reserve requirement and a $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

Deposit Creation

If Bank A buys securities with the $90 check

Bank A

Assets		Liabilities	
Reserves	+ $10	Deposits	+ $100
Securities	+ $90		

The seller deposits $90 at Bank B and the process is the same.

Whether the bank makes loans or buys securities, we get same deposit expansion

The Deposit Multiplier

- required reserves are calculated as a certain fraction r (*required reserve ratio*) of checkable deposits:

  $RR = r \times D$
- hence, deposits can be calculated as:

$$D = \frac{1}{r} \times R$$

- thus, the change in deposits depends on the change in reserves:

$$\Delta D = \frac{1}{r} \times \Delta R$$

Deposit Creation: The Banking System as a Whole

Banking System

Assets		Liabilities	
Securities	– $100	Deposits	+ $1000
Reserves	+ $100		
Loans	+ $1000		

Critique of Simple Model

Deposit creation stops if:

- proceeds from loan kept in cash
- bank holds excess reserves