

Model of Deposit Creation

Pre-test

Objectives:

To collect information about students' understanding of the meanings of "required reserve", "excess reserve" as well as the use of balance sheet.

Answer the following questions:

Suppose Mary deposits \$1000 to Bank A.

1. What is the immediate change in Bank A's balance sheet?

Assets(\$)	Liabilities (\$)
_____ +1000	_____ +1000

2. Given the required reserve ratio is 25%, what is the minimum reserve Bank A is required to keep? Show your calculation.

3. The amount of the deposit in excess of the required reserve is called

_____.

4. Suggest some ways that Bank A can make use of the amount of money mentioned in Q.3 to make profit?

Model of deposit creation

Part I—Assumptions of the Model of Deposit Creation

A. Pre-requisite knowledge:

- ◇ The calculation of required reserve, excess reserve
- ◇ The meaning and use of balance sheet

Objectives:

After the lessons, students will be able to understand

- i) how each assumption of the model affects the results of deposit creation
- ii) how each variable in the deposit creation equation affects the result of deposit creation

Case 1

Complete the balance sheets below with the following information.

Suppose Leon deposits \$1,000 to Bank A.

Given

1. Required reserve ratio is 25%.
2. Banks keep no excess reserve.
3. There are 5 borrowers.
4. There is no cash leakage.

Step 1

Bank A's balance sheet

Immediate effect:

Assets (\$)	Liabilities (\$)
Reserve + _____	Deposits + _____

➔ Bank A will keep 25% of the deposit as reserve and loans the rest out.

Bank A's balance sheet

Assets (\$)		Liabilities (\$)	
Reserve	+ _____	Deposits	+ _____
Loans	+ _____		

Step 2

➔The loan made by Bank A will be totally re-deposited to Bank B.

Bank B's balance sheet

Assets (\$)		Liabilities (\$)	
Reserve	+ _____	Deposits	+ _____
Loans	+ _____		

Step 3

➔The loan made by Bank B will then totally re-deposited to Bank C.

Bank C's balance sheet

Assets (\$)		Liabilities (\$)	
Required Reserve	+ _____	Deposits	+ _____
Loans	+ _____		

Step 4

➔The loan made by Bank C will then totally re-deposited to Bank D.

Bank D's balance sheet

Assets (\$)		Liabilities (\$)	
Required Reserve	+ _____	Deposits	+ _____
Loans	+ _____		

Step 5

➔The loan made by Bank D will then totally re-deposited to Bank E.

Bank E's balance sheet

Assets (\$)		Liabilities (\$)	
Required Reserve	+ _____	Deposits	+ _____
Loans	+ _____		

Record of the banking system's account:

Banks	Deposits	Reserve	Loans
A			
B			
C			
D			
E			
Total			

Total Deposits created: _____

Divide the class into several groups and each group would be assigned 2-3 of the following cases.

Students can follow steps shown in Case 1 and work out the answers for the assigned cases.

Case	Required reserve ratio	Excess reserve ratio	Number of borrowers	Cash leakage ratio
1	25%	0	5	0
2	V (100%)	I	I	I
3	V (20%)	I	I	I
4	I	V(10%)	I	I
5	I	V (15%)	I	I
6	I	I	V(0)	I
7	I	I	V(7)	I
8	I	I	I	V(10%)
9	I	I	I	V (20%)

Key: I - invariance (constant)

V - variance (change)

For comparison

Part II- Equation of deposit creation

Pre-requisite knowledge: calculation of maximum deposit created

Objectives:

After the exercise, students will be able to understand the effect on maximum deposit created, given

- i) a change in initial deposit
- ii) a change in RRR
- iii) changes in both initial deposits and RRR

Case 10

Calculate the maximum deposit created given:

Initial deposit: \$1,000; RRR: 25%

$$\text{Maximum deposit created} = 1000 \times \frac{1}{25\%} =$$

Divide the class into several groups and each group would be assigned 2-3 of the following cases.

Case 11

Calculate the maximum deposit created given:

Initial deposit: \$2,000; RRR: 25%

Maximum deposit created =

Case 12

Calculate the maximum deposit created given:

Initial deposit: \$1,000; RRR: 20%

Maximum deposit created =

Case 13.1

Calculate the maximum deposit created given:

Initial deposit: \$2,000; RRR: 50%

Maximum deposit created =

Case 13.2

Calculate the maximum deposit created given:

Initial deposit: \$2,000; RRR: 60%

Maximum deposit created =

Case 13.3

Calculate the maximum deposit created given:

Initial deposit: \$2,000; RRR: 30%

Maximum deposit created =

Case 14.1

Calculate the maximum deposit created given:

Initial deposit: \$500; RRR: 12.5%

Maximum deposit created =

Case 14.2

Calculate the maximum deposit created given:

Initial deposit: \$500; RRR: 10%

Maximum deposit created =

Case 14.3

Calculate the maximum deposit created given:

Initial deposit: \$500; RRR: 20%

Maximum deposit created =

Case 15

Calculate the maximum deposit created given:

Initial deposit: \$2000; RRR: 20%

Maximum deposit created =

Case 16

Calculate the maximum deposit created given:

Initial deposit: \$750; RRR: 30%

Maximum deposit created =

The following table summarizes the patterns of variation adopted in Cases 10 to 16.

Case	Initial deposit (\$)	Required Reserve Ratio (RRR)(%)
10	1000	25
11	V ↑ (2000)	I
11*	V ↓ (500)	I
12	I	V ↓ (20%)
12*	I	V ↑ (40%)
13.1	V ↑ (2000)	V ↑ (50%)
13.2	V ↑ (2000)	V ↑ (60%)
13.3	V ↑ (2000)	V ↑ (30%)
14.1	V ↓ (500)	V ↓ (12.5%)
14.2	V ↓ (500)	V ↓ (10%)
14.3	V ↓ (500)	V ↓ (20%)
15	V ↑ (2000)	V ↓ (20%)
16	V ↓ (750)	V ↑ (30%)

For comparison

Assessment

SEE-I Model of deposit creation

1. **S**tate the main idea of deposit creation.

2. **E**laborate on the concept in your own words. Explain it at greater length in a paragraph or two. Clarify the concept in your own words.

3. **E**xemplify the concept by giving concrete example (and counter examples) of the concept. Specify the concept by giving specific examples.

4. **I**llustrate the concept with a picture, diagram, metaphor, or analogy. Generalize the concept. Give a comparison or metaphor or picture-in-words to bring it home.
