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%

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.

_____

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