

Financial Intermediaries

Introduction and Description

Financial intermediaries act as the go-between borrowers and lenders. They take deposits from households and businesses and make loans to other households and businesses. Financial intermediaries include commercial banks, savings and loan associations, savings banks, credit unions and money market mutual fund companies.

This lesson focuses on demonstrating how banks create money. The term *banks* is used to mean any depository institution whose deposits are a part of M1. The concept of money creation is a difficult one for most students. Many students think that money is created only by the U.S. Mint or the Federal Reserve System. Student understanding of the money creation process is essential to understanding the economic effects of monetary policy. Thus, this lesson is very important. Activity 37 provides the students with practice in calculating the deposit expansion multiplier and an opportunity to understand it and its effect on the money supply.

Objectives

1. Explain the economic function of financial intermediaries.
2. Explain the fractional reserve system.
3. Explain the process by which banks create or destroy money and the factors that affect the increase or decrease in the money supply.
4. Define the *required reserve ratio*, *required reserves*, *excess reserves* and *deposit expansion multiplier*.

Time Required

Two class periods or 90 minutes

Materials

Activity 37

Procedure

1. Give a brief lecture on financial intermediaries. Define the role of financial intermediaries as

bringing people who want to borrow funds together with people who want to lend funds.

Give examples of financial intermediaries. Present the functions of financial intermediaries: liquidity creation, minimization of the cost of borrowing, minimization of the cost of monitoring borrowers and risk reduction through pooling.

2. Describe the fractional reserve system of banking in the United States. Banks are any institution holding deposits. People deposit money in a bank. Banks must hold a specific percentage of the deposit as reserves; this percentage is called the *required reserve ratio*. The deposit that is not part of required reserves is called *excess reserves*. The bank may loan excess reserves or buy government securities. A bank makes a loan by creating a checkable deposit for the borrower; this results in an increase in the money supply. The money supply, or M1, equals currency, checkable deposits and traveler's checks.
3. Present the entire money creation process. Most texts have a graphic. Stress that the total increase in the money supply may be less than predicted by the money expansion multiplier if
 - borrowers do not spend all of the money they borrow,
 - banks do not lend out all their excess reserves and
 - people hold part of their money as cash.
4. On the next day, review the money creation process and discuss how different required reserve ratios have different effects on the size of the money supply. Show that with a required reserve ratio of 1, all money deposited would be required reserves. The United States has a fractional reserve system because the required reserve ratio is not 1.
5. Have the students complete Activity 37. Review the answers with the students.

The Multiple Expansion of Checkable Deposits

Part A

Assume that

- the required reserve ratio is 10 percent of checkable deposits and banks lend out the other 90 percent of their deposits (banks wish to hold no excess reserves) and
 - all money lent out by one bank is redeposited in another bank.
1. Under these assumptions, if a new checkable deposit of \$1,000 is made in Bank 1,
 - (A) how much will Bank 1 keep as required reserves? \$ 100
 - (B) how much will Bank 1 lend out? \$ 900
 - (C) how much will be redeposited in Bank 2? \$ 900
 - (D) how much will Bank 2 keep as required reserves? \$ 90
 - (E) how much will Bank 2 lend out? \$ 810
 - (F) how much will be redeposited in Bank 3? \$ 810
 2. Use your answers to Question 1 to help you complete the table in Figure 37.1. Fill in the blanks in the table, rounding numbers to the second decimal (for example, \$59.049 = \$59.05). After you have completed the table, answer the questions that follow by filling in the blanks or underlining the correct answer in parentheses so each statement is true.



Figure 37.1

Checkable Deposits, Reserves and Loans in Seven Banks

Bank No.	New Checkable Deposits	10% Fractional Reserves	Loans
1	\$1,000.00	\$100.00	\$900.00
2	900.00	90.00	810.00
3	810.00	81.00	729.00
4	729.00	72.90	656.10
5	656.10	65.61	590.49
6	590.49	59.05	531.44
7	531.44	53.14	478.30
All other banks combined	4,782.98	478.29	4,304.67
Total for all banks	\$10,000.00	\$1,000.00	\$9,000.00

3. In this example:
- (A) The original deposit of \$1,000 increased total bank reserves by \$1,000. Eventually, this led to a total of \$10,000 expansion of bank deposits, \$1,000 of which was because of the original deposit, while \$9,000 was because of bank lending activities.
 - (B) Therefore, if the fractional reserve had been 15 percent instead of 10 percent, the amount of deposit expansion would have been (*more / less*) than in this example.
 - (C) Therefore, if the fractional reserve had been 5 percent instead of 10 percent, the amount of deposit expansion would have been (*more / less*) than in this example.
 - (D) If banks had not loaned out all of their excess reserves, the amount of deposit expansion would have been (*more / less*) than in this example.
 - (E) If all loans had not been redeposited in the banking system, the amount of deposit expansion would have been (*more / less*) than in this example.
4. Another way to represent the multiple expansion of deposits is through *T-accounts*. In short, a T-account is an accounting relationship that looks at changes in balance sheet items. Since balance sheets must balance, so, too, must T-accounts. T-account entries on the asset side must be balanced by an offsetting asset or an offsetting liability. A sample T-account is provided below. For the bank, *assets* include accounts at the Federal Reserve District Bank, Treasury securities and loans; *liabilities* are deposits and *net worth* is assets minus liabilities. Show how the \$1,000 checkable deposit described in Question 1 would be listed in a T-account.

Assets		Liabilities	
<i>Loans</i>	<i>\$900</i>	<i>Deposits</i>	<i>\$1,000</i>
<i>Reserves</i>	<i>\$100</i>		

Part B

5. Assume that \$1,000 is deposited in the bank, and that each bank loans out all of its excess reserves. For each of the following required reserve ratios, calculate the amount that the bank must hold in required reserves, the amount that will be excess reserves, the deposit expansion multiplier and the maximum amount that the money supply could increase.

	Required Reserve Ratio					
	1%	5%	10%	12.5%	15%	25%
Required reserves	\$10	\$50	\$100	\$125	\$150	\$250
Excess reserves	\$990	\$950	\$900	\$875	\$850	\$750
Deposit expansion multiplier	100	20	10	8	6.67	4
Maximum increase in the money supply	\$99,000	\$19,000	\$9,000	\$7,000	\$5,669.50	\$3,000

6. If the required reserve ratio were 0 percent, then money supply expansion would be infinite. Why don't we want an infinite growth of the money supply? (Hint: remember the equation of exchange: $MV = PQ$.) **Based on the equation of exchange and assuming a constant velocity of money, an infinite increase in the money supply would translate into an infinite increase in nominal GDP. We know that real output cannot increase that rapidly; therefore the increase must be caused by increases in prices. Thus, we would have hyperinflation.**
7. If the Federal Reserve wants to increase the money supply, should it raise or lower the reserve requirement? Why? **The Federal Reserve should lower the required reserve ratio. Banks would have more excess reserves to lend out and, thus, the money supply could increase.**
8. If the Federal Reserve increases the reserve requirement and velocity remains stable, what will happen to nominal GDP? Why? **If the Federal Reserve increases reserve requirements, the money supply will decrease. Nominal GDP will decrease based on the equation of exchange ($MV = PQ = \text{nominal GDP}$): If M decreases, V stays constant and then PQ (nominal GDP) must decrease.**
9. What economic goal might the Federal Reserve try to meet by reducing the money supply?
Price stability
10. Why might the money supply not expand by the amount predicted by the deposit expansion multiplier? **Several reasons: All money may not be deposited into the banking system; the banks may not be able to lend out all excess reserves because people do not want to borrow; banks may want to keep excess reserves as a precaution.**