

Unit 4: The Financial Sector

Exam Date

Multiple Choice: Wednesday, March 13th

**Advanced Placement Macroeconomics
Unit 4 - Financial Institutions**

(NOT TO BE OUTLINED) Total Textbook Pages covered

1. Chapter 12 - page 229 to 232 "what 'backs' the money supply" and page 234 "The Federal Reserve and the Banking System" to page 238 "The Federal Reserve and Independence" (It's all covered in a guided reading you will receive)
2. Chapter 13 - all

Graphs

No new graphs this unit.

Unit 3 Key Concepts

measures of the money supply, fractional reserve banking, the Federal Reserve System, banks, multiple deposit expansion, money creation, fractional banking, T accounts, money multiplier, required reserves, reserve ratio, excess reserves, total reserves,

Crucial Activities - Resources

1. Guided Reading - Money and the Federal Reserve
2. Macroeconomics Lesson 1 Activity 35 What's All This About the Ms?
3. Macroeconomics Lesson 1 Activity 34 Money
4. Note Packet Fractional Banking and Money Creation
5. Macroeconomics Lesson 1 Activity 35 What's All This About the Ms?
Lesson 1, Activity 37 The Multiple Expansion of Checkable Deposits"
6. Unit 4 Practice Test

Name _____ Hour _____

Guided Reading - Money and the Federal Reserve (Start on page 228)

1. List **and explain** the 3 functions of money:

a.

b.

c.

2. Money is said to be a preferred store of value because it is the most **liquid** of all assets. Explain what this means (one quick word is not enough for credit).

3. What are the components of the narrowest definition of the U.S. money supply, **M1**?

a.

b.

4. U.S. coins are examples of **token money**. What does this mean?

5. **Fill in the blanks**, "Most of the nation's currency is paper money. This "folding currency" consists of

_____ issued by the _____

(the U.S. central bank) with the authorization of _____.

6. What percent of the M1 money supply is:

A. Currency?

B. Checkable deposits?

7. To summarize: Money, M1 =

8. List institutions that allow customers to create checkable deposits, and put a star by the primary one (the collective name of the second kind is fine for credit).

9. Even though money that you have deposited in a bank in the form of a checking account is an asset to the bank (cash), it is not counted as money for them. Why not?

10. M2 money = M1 plus Near-monies. What are **Near-Monies**?

11. What 3 categories of near-money does the text list?
 - a.

 - b.

 - c.

12. How much larger is the M2 money supply than the M1 money supply alone?

13. MZM (Money Zero Maturity) focuses exclusively on monetary balances that are ...

14. The Equation for MZM =

Go to page 234 - The Federal Reserve and the Banking System

15. Various sections of the text have referred to "monetary authorities." These are authorities that can actually influence, if not outright control, the nations overall supply of money. In the U.S., who are these "monetary authorities?"

16. As figure 12.2 shows, the board directs the activities of _____,
which in turn control the lending activity of the nation's _____.

17. What law created the Federal Reserve System?

18. Explain the nomination process and the terms of the members of the Fed's Board of Governors (Be complete, and don't forget the chair-person and vice-chairperson).

19. Unlike most nations which have one single central bank, the Board of Governors directs the activity of how many Federal Reserve banks throughout the nation?

20. Rather than being motivated by profit like private banks are, what are the goals of the policies that these Federal Reserve banks carry out?

21. Look at figure 12.3. What Federal Reserve district is Michigan in, and where is the Federal Reserve Bank located that serves our state's banks?

22. Why do you think that some Federal Reserve districts include several states while others include just a few?

23. How is the relationship between the Federal Reserve banks and the local banks in their districts analogous to (like) the relationship between our local banks and us?

24. Continuing this point from the last question, in emergency circumstances, the Federal Reserve Banks become the " _____ " to the banking system.

25. What special function do Federal Reserve Banks have which other banks and thrifts certainly do not have?

26. As we shall learn, Monetary Policy includes policies of the Fed to influence the total supply of money available in the nation. What committee of the Fed assists the Board of Governors in this all-important task?

27. Who are the 12 individuals who make up Committee?
 - a.
 - b.
 - c.

28. List the 7 main functions of the Fed. Explain the one with an * a bit since it is not as self-explanatory as the others.
 - a.
 - b.
 - c.
 - d.
 - *e.
 - f.
 - g.

29. Unlike Congress and the President, who are beholden to the electorate (dependent upon voters for their jobs), Congress intentionally created the Fed as an independent agency. Why?

What's All This About the Ms?

While monetary policy is the subject of debates that capture the public's attention, the first steps in the formulation of policy may appear relatively mundane. We must first define and measure the money supply. Defining and measuring money has become an increasingly difficult task because of reforms in the financial system, and because people and banks hold money in myriad different forms.

Money Defined . . .

There is general agreement on a simple conceptual *definition* of money. However, the complexity of the real world and our rapidly evolving financial system prevent agreement on a single *measure* of money, and this can cause confusion.

The Federal Reserve defines monetary aggregates by grouping assets that the public uses in roughly similar ways. In defining these measures of money, the Fed draws somewhat arbitrary lines between groups of assets that serve in varying degrees as both the medium-of-exchange and store-of-value functions of money.

Depository institutions such as banks, savings and loan associations and credit unions report to the Fed the value of their time and savings deposits, vault cash and transaction accounts such as checkable deposits.

The data on checkable deposits are the primary source for the calculation of required reserves and the construction of the monetary aggregates. The Fed's Board of Governors and the Federal Open Market Committee use this information in the formulation of monetary policy.

. . . and Measured

M1 is the narrowest definition and measure of the money supply. It includes assets used primarily for transactions or as a medium of exchange. M1 includes currency and coin held by the nonbank public, demand deposits, other checkable deposits and traveler's checks.

M2 is a broader measure of money stock. In addition to the items included in M1, M2 includes the amount held in savings and small time deposits, money market deposit accounts (MMDAs), noninstitutional money market mutual funds (MMMFs) and certain other short-term money market assets.

M3 is an even broader definition of the money supply. It includes all of the components of M2 plus a number of financial assets and instruments generally employed by large businesses and financial institutions.

We can look at the three definitions of money in the following terms:

- M1 includes items that are primarily used as a medium of exchange.
- M2 includes items that are used as a store of value.
- M3 includes items that serve as a unit of account.

Name _____ Hour _____

UNIT

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Macroeconomics LESSON 1 ■ ACTIVITY 35 (continued)

The Fed considers a number of factors when it measures the monetary aggregates, but ultimately what matters is how the public uses the different forms of money available. For example, depositors can write checks on their MMDAs or their MMMFs. The public, however, primarily uses these types of accounts for savings and only secondarily for transactions. Therefore, these accounts are typically placed in M2 with savings accounts and time deposits, which also primarily serve the store-of-value function of money.

On the other hand, deposits in NOW (negotiable order of withdrawal) accounts are included in M1 because they are primarily used as a medium of exchange, even though they earn interest and depositors use them for savings.

1. What are the three basic functions of money?
2. Why is it important for the Fed to know the size and rate of growth of the money supply?
 - (A) What are the effects if the money supply grows too slowly?
 - (B) What are the effects if the money supply grows too rapidly?
3. Name a type of money that serves primarily as a medium of exchange.
4. Name a type of money that serves primarily as a store of value.
5. With the use of credit cards becoming more prominent and the availability of credit broader than ever, why are credit cards not included in the Ms?

6. Why is it difficult for the Fed to get an accurate measure of the money supply?
7. Why must the Fed continue to develop new ways to track the money supply?
8. Use the data in Figure 35.1 to calculate M1, M2 and M3. Assume that all items not mentioned are zero. Show all components for your answers.



Figure 35.1

Calculating the Ms

Checkable deposits (demand deposits, NOW, ATM and credit union share draft accounts)	\$850
Currency	\$200
Large time deposits	\$800
Noncheckable savings deposits	\$302
Small time deposits	\$1,745
Institutional money market mutual funds	\$1,210

M1 = _____

M2 = _____

M3 = _____

Name _____ Hour _____

Notes - Fractional Banking and Money Creation (Chapter 13 - all)

I. **Fractional Banking:** Only a portion (fraction) of checkable bank deposits (deposits that checks can be written on) are actually backed up by cash in:

A. _____

B. _____

II. A bank's Balance Sheet (Also called its _____) - A statement of a bank's:

A. **Assets** -

B. Claims against the bank by:

1. _____ - called **liabilities**

2. _____ - called **networth**.

C. Assets =

D. Every \$1 change in a bank's assets is matched by ...

III. Bank Transactions

1. Bank founders sell _____ worth of stock to the public (and to themselves) with which to create Wahoo Bank.

Transaction 1:	
Balance Sheet 1: Wahoo Bank	
Assets	Liabilities and Networth
Cash:	Stock Shares:

2. The Bank buys _____ worth of property and Equipment

Transaction 2:	
Balance Sheet 2: Wahoo Bank	
Assets	Liabilities and Networth
Cash:	Stock Shares:
Property:	

3. Fred Bradshaw and other Citizens deposit _____ in the bank as checkable deposits (checking accounts).

Transaction 3:	
Balance Sheet 3: Wahoo Bank	
Assets	Liabilities and Networth
Cash:	Checkable Deposits:
Property:	Stock Shares:

IV. Required Reserves:

A. Reserve Ratio:

B. Reserve Ratio =

C. _____ can establish and vary the reserve ratio within limits set by _____.

D. _____ help the Fed control the _____ of commercial banks.

4. Wahoo Bank deposits all of its cash with the Federal Reserve

Transaction 4: Balance Sheet 4: Wahoo Bank	
Assets	Liabilities and Networth
Cash:	Checkable Deposits:
Reserves:	Stock Shares: \$250,000
Property: \$240,000	

IV. The Reserve Ratio Continued.

E. Excess Reserves:

F. Excess Reserves =

G. Required Reserves:

H. Required Reserves =

I. For Wahoo Bank, if the Fed sets the reserve ratio at 20%, what are Wahoo banks current

1.) Required Reserves?

2.) Excess Reserves?

J. Therefore, legally Wahoo bank

1.) Must keep and not loan out...

2.) May loan out...

5. Fred Bradshaw writes a check for _____ and the Fed processes the transaction.

Transaction 5: Balance Sheet 5: Wahoo Bank	
Assets	Liabilities and Networth
Reserves:	Checkable Deposits:
Property: \$240,000	Stock Shares: \$250,000

Questions: At this point, what are Wahoo banks...

a. Required Reserves?

b. Excess Reserves?

6a. Wahoo bank loans out an amount equal to its extra reserves to a borrower by granting him a _____ checking account in return for a promissory note (an IOU).

Transaction 6a:	
Balance Sheet 6a: Wahoo Bank	
Assets	Liabilities and Networth
Reserves:	Checkable Deposits:
Loans:	Stock Shares: \$250,000
Property: \$240,000	

- Note - By loaning an amount equal to its extra reserves, Wahoo bank has actually created ...
- The borrower gave the bank something that cannot be spent, a _____, a fancy _____, a promise to pay money back in the future.
- The bank gave him something that can be spent, ...

6b. The borrower writes a check for the entire amount of the loan which is processed by the Fed.

Transaction 6b:	
Balance Sheet 6b: Wahoo Bank	
Assets	Liabilities and Networth
Reserves:	Checkable Deposits:
Loans:	Stock Shares: \$250,000
Property: \$240,000	

V. Abiding by the Reserve Ratio

A. Note - A Single Bank Can Only Lend...

B. Loaning out more than ones excess reserves will leave the bank with less than its required reserves once the loaned money is spent.

3. Example: **Alternative 6a.** Look back to Transaction 6a. Wahoo bank has excess reserves of \$50,000. Let's assume it loans out \$55,000 instead of the \$50,000 it actually did.

Alternative Transaction 6a:	
Balance Sheet 6a: Wahoo Bank	
Assets	Liabilities and Networth
Reserves:	Checkable Deposits:
Loans:	Stock Shares: \$250,000
Property: \$240,000	

VI. Multiple Deposit Expansion


A. The amount of money created by banks in the lending process actually greater than the amount that is initially loaned out.


B. Let us make 3 assumptions (for purposes of demonstration)

1. The Reserve Requirement is ...
2. All banks are "loaned up," that is, they all loan out ...
3. All money borrowed from a bank eventually ends up
4. Figure 13.2

Chapter 13

The Fractional Reserve System
Creating a Bank
Money Creation
The Banking System
Monetary Multiplier
Last Word

Key Terms 

End Show 

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The Banking System

Bank	(1) Acquired Reserves and Deposits	(2) Required Reserves (Reserve Ratio = .2)	(3) Excess Reserves (1)-(2)	(4) Amount Bank Can Lend; New Money Created = (3)
Bank A	\$100.00	\$20.00	\$80.00	\$80.00
Bank B	80.00	16.00	64.00	64.00
Bank C	64.00	12.80	51.20	51.20
Bank D	51.20	10.24	40.96	40.96
Bank E	40.96	8.19	32.77	32.77
Bank F	32.77	6.55	26.21	26.21
Bank G	26.21	5.24	20.97	20.97
Bank H	20.97	4.20	16.78	16.78
Bank I	16.78	3.36	13.42	13.42
Bank J	13.42	2.68	10.74	10.74
Bank K	10.74	2.15	8.59	8.59
Bank L	8.59	1.72	6.87	6.87
Bank M	6.87	1.37	5.50	5.50
Bank N	5.50	1.10	4.40	4.40
Other Banks	21.99	4.40	17.59	17.59
				\$400.00

Chapter 13

The Fractional Reserve System

Creating a Bank

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Monetary Multiplier

Last Word

Key Terms 

End Show 

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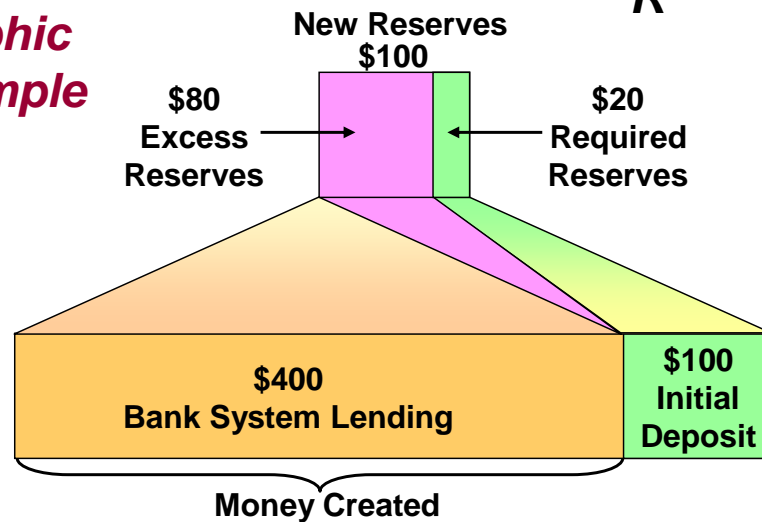
The Monetary Multiplier

Monetary Multiplier or Checkable-Deposit Multiplier

$$\text{Monetary Multiplier} = \frac{1}{\text{Required Reserve Ratio}}$$

or in Symbols...
$$m = \frac{1}{R}$$

Graphic Example



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C. Total Expansion of the money supply =

D. The Monetary Multiplier =

VII. The Multiple Destruction of Money

A. Making loans ...

B. Loan repayment ...

C. For the overall money supply to increase,

the dollar amount of loans made must be

the dollar amount of loans repaid

Money

Throughout history, a wide variety of items have served as money. These include gold, silver, large stone wheels, tobacco, beer, dog teeth, porpoise teeth, cattle, metal coins, paper bills and checks. All of these types of money should be judged on how well they accomplish the functions of money. Money is what money does!

The functions of money are to serve as a medium of exchange, a standard of value and a store of value.

To be a good *medium of exchange*, money must be *accepted by people* when they buy and sell goods and services. It should be *portable* or easily carried from place to place. It must also be *divisible* so that large and small transactions can be made. It must also be *uniform* so that a particular unit such as a quarter represents the same value as every other quarter.

To be a good *standard of value*, or *unit of account*, money must be useful for quoting prices. To accomplish this, money must be *familiar*, *divisible* and *accepted*.

To be a good *store of value*, money must be *durable* so it can be kept for future use. It also should have a *stable value* so people do not lose purchasing power if they use the money at a later time.

Money is any item or commodity that is generally accepted in payment for goods and services or in repayment of debts, and serves as an asset to its holder.

Name _____ Hour _____

UNIT

4

Macroeconomics LESSON 1 ■ ACTIVITY 34 (continued)

1. Use the table below to evaluate how well each item would perform the functions of money in today's economy. If an item seems to fulfill the function, put a + sign in the box; if it does not fulfill a function in your opinion, place a - sign in the box. Put a ? sign in the box if you are unsure whether the item fulfills the functions of money. The item with the most + signs would be the best form of money for you. In the space below the table, list the top six forms of money, according to your evaluation.

Item	Medium of Exchange	Store of Value	Standard of Value
Salt			
Large stone wheels			
Cattle			
Gold			
Copper coins			
Beaver pelts			
Personal checks			
Savings account passbook			
Prepaid phone card			
Debit card			
Credit card			
Cigarettes			
Playing cards			
Bushels of wheat			
\$1 bill			
\$100 bill			

Your top six forms of money:

Name _____ Hour _____

UNIT
4 Macroeconomics

LESSON 3 ■ ACTIVITY 37

The Multiple Expansion of Checkable Deposits

This activity is designed to illustrate how banks' lending of excess reserves can expand the nation's money supply and to explain how the Federal Reserve System can limit the growth of the money supply using the required reserve ratio.

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? \$ _____
 - (B) how much will Bank 1 lend out? \$ _____
 - (C) how much will be redeposited in Bank 2? \$ _____
 - (D) how much will Bank 2 keep as required reserves? \$ _____
 - (E) how much will Bank 2 lend out? \$ _____
 - (F) how much will be redeposited in Bank 3? \$ _____

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		810.00
3		81.00	
4			656.10
5			
6		59.05	
7	531.44		478.30
All other banks combined			
Total for all banks	\$10,000.00		\$9,000.00

3. In this example:
- (A) The original deposit of \$1,000 increased total bank reserves by \$_____. Eventually, this led to a total of \$10,000 expansion of bank deposits, _____ of which was because of the original deposit, while _____ 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

Part B

The Federal Reserve sets the reserve requirements: the percentages of the bank's deposits that the bank must hold as reserves. Banks may not loan out these required reserves. As we said in Part A, this fractional reserve system actually allows banks to create money. The amount of reserves a bank holds is known as its *total reserves*. Total reserves are composed of *required reserves*, which the bank must keep, and *excess reserves*, which the bank can loan to other customers. The reserves held by the bank beyond those required by the Fed are *excess reserves*.

How much money would be created if the bank continued to loan out its excess reserves to the last penny? To find out, we must calculate the *deposit expansion multiplier*. The deposit expansion multiplier determines how much money can be created in the economy from an initial deposit. The formula for the deposit expansion multiplier is

$$\text{Deposit expansion multiplier} = \frac{1}{\text{reserve requirement}}$$

In the example in Part A, the Federal Reserve set the reserve requirement at 10 percent. So the deposit expansion multiplier would be

$$\text{Deposit expansion multiplier} = \frac{1}{0.10} = 10$$

To find the maximum amount of money that could be created, the formula is

$$\text{Expansion of the money supply} = \text{deposit expansion multiplier} \times \text{excess reserves}$$

The multiplier is 10, and excess reserves from the initial bank deposit are \$900. So the potential expansion of money (M1) would be

$$\text{Expansion of the money supply} = 10 \times \$900 = \$9,000$$

M1 now consists of the original \$1,000 deposit plus the \$9,000 created.

Name _____ Hour _____

UNIT 4 Macroeconomics **LESSON 3 ■ ACTIVITY 37** (continued)

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						
Excess reserves						
Deposit expansion multiplier						
Maximum increase in the money supply						

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: $MV = PQ$.)
7. If the Federal Reserve wants to increase the money supply, should it raise or lower the reserve requirement? Why?
8. If the Federal Reserve increases the reserve requirement and velocity remains stable, what will happen to nominal GDP? Why?
9. What economic goal might the Federal Reserve try to meet by reducing the money supply?
10. Why might the money supply not expand by the amount predicted by the deposit expansion multiplier?