

## Part V: The Rise of Monetarism 1970 - 1990

### Objectives for Chapter 20: Introduction to Money and Banking

At the end of Chapter 20, you will be able to answer the following:

1. What are the three **functions of money**? What is "*barter*"?
2. What is meant by "*commodity money*"? by "*fiat money*"?
3. What are the components of the money supply (*M-1*)? What does each represent?
4. What is the difference between "**money**", "**income**", and "**wealth**"?
5. What is a "*savings and loan*" (*S&L*)? What is a "*credit union*"?
6. What is "*liquidity*"?
7. What are the components of *M-2*? What does each represent? What is a "*time deposit*" (*CD*)? What is a "*money market (mutual) fund*"?
8. What is a **credit card**? Why is it NOT money?
9. Describe the **structure** of the *Federal Reserve System (Fed)*. What is a "*central bank*" (i.e., what are its functions)? How is the **Board of Governors** chosen? How is the **chair** chosen? What is the *Federal Open Market Committee (FOMC)*?
10. What is "*discounting*"? What does "*discount rate*" mean?
11. Describe a bank's balance sheet. What is meant by its "**assets**"? by its "**liabilities**"? by its "**stockholders' equity**" or "**net worth**"? What are a bank's main assets and liabilities?
12. Define "*reserves*", "*required reserves*", and "*excess reserves*".
13. What are "*federal funds*"? What is meant by **the "federal funds rate"**?
14. What is meant by "**collateral**"?
15. What is the "*prime rate*"?
16. What is a "*Treasury Security*"? What is a "*bill*", a "*note*", or a "*bond*"?
17. Why might a bank or savings and loan become "**insolvent**"?
18. What is the **FDIC**?

### Chapter 20: Introduction to Money and Banking (latest revision September 2004)

#### 1. What is Money?

Every society that we know anything about has had something to serve as money. To understand what money is we need to imagine how the world would operate without money. How would people deal with each other? The answer is that people would **barter** with each other. *Barter means that people would have to trade goods for goods.* If you desire credit in Principles of Macroeconomics, you would have to provide me goods that I want --- food, housing, and so forth. If you cannot produce the goods I want, we would have to do a more complicated arrangement. You would produce goods for Jose. Jose would then produce goods that I desire. I would provide you with credit for Principles of Macroeconomics. When more than three people have to be involved, you can imagine how complicated this can become. As a result, all societies developed something to serve as a **medium of exchange**. I accept this something in exchange for teaching Principles of Macroeconomics. If you produce food, you will accept this

something from me in exchange for your food. Because we have something to serve as a medium of exchange, trade between us is much easier. This trade allows us to specialize in producing the goods or services that we produce best. With trade, there are more goods and services available and both of us have a higher standard of living.

There are certain characteristics that a good needs to be a good medium of exchange. First, the good needs to be **durable**. Having ice serve as a medium of exchange in Southern California would present many problems. Indeed, almost anything that is durable has served as money somewhere in the world. Tobacco was money in and around the American colony of Virginia for about 200 years. Rice, indigo, wheat, and maize (corn) also served as money in the American colonies. Seashells (wampum) were money among Native American tribes in the Northeast. Tree bark, bones of dead animals, eggs, feathers, jade, pigs, and so forth have served as money. Second, the good needs to be **high in value in relation to its weight**. This means that one will need only a small amount of it in order to be able to exchange for the goods and services one desires. Cotton would not be a good candidate for a medium of exchange because one would require trucks of it just to buy weekly groceries. A good that is high in value in relation to its weight is **portable**. Because one does not need much of it in order to exchange for goods and services, it is easy to carry around. Third, the good needs to be **scarce**. Something that is easily available will not have any value. Finally, the most important characteristic for a good to serve as a medium of exchange is that it is **acceptable**. *Indeed, money is whatever people will accept as a medium of exchange.*

While most goods that are durable have served as money somewhere and sometime, there are two commodities that stand out. **Gold and silver** have served as money most places in the world and over most of world history. The practice of making metal into coins of predetermined weight supposedly began with the kings of Lydia in the 8<sup>th</sup> century B.C. (in what is now Turkey) but may have existed in India hundreds of years earlier. In the Old Testament, the shekel that is mentioned is a silver coin of a certain weight. The custom of depicting the head of the sovereign on the coin goes back to Alexander the Great (336 B.C.). In approximately the year 800 A.D., the emperor Charlemagne created the monetary system that governed Europe for 1000 years. The basic unit of money was the **pound of silver**. The name of the British money is based on this. The British money is called the pound sterling (sterling is silver that is at least 95% pure). The Italian money was called the lira until Italy became part of the European Union. Lira means pound in Italian. In Charlemagne's system, the silver pound was then broken into twenty parts. These were called **schillings** in the German speaking areas and called **sous** in the French speaking areas. The schilling was the name of the Austrian money. You will find references to the sou in Shakespeare's plays, such as the Merchant of Venice. The schilling was then divided into twelve parts. These were called **pennies or pence** in the German speaking areas and **denier** in the French speaking areas. So a penny was 1/240 of a pound of silver. In Britain, the pennies were then divided into two parts (halfpence) and into four parts (farthings). So, a farthing was a coin of 1/960 of a pound of silver.

Gold and silver had very nice properties to serve as media of exchange. First, they were durable. Second, they were high in value in relation to their weight. Therefore, they were portable. Third, it didn't hurt that they were shiny. Fourth, they are soft metals and therefore could be easily molded into many different shapes and sizes. Fifth,

and most importantly, they were widely acceptable in exchange for goods and services. While there is no biblical command that gold or silver be accepted in exchange for goods and services, people have chosen to do so. However, gold and silver have one property that is bad for a medium of exchange. They are easy to debase. Generally, some monarch would melt down the coins, add some of a metal of lesser value such as brass, and then reproduce the coins. The coins would look the same to the untrained eye but were actually not worth as much. It was also possible for merchants to shave a few micromilligrams from the coin without being detected. As a result, it was common for merchants to carry scales to weigh the coins they received. Because this slowed down trade, some monarchs placed a special mark on the coin to certify that the coin did indeed weigh what it was supposed to weigh and that the coin was indeed pure gold or silver. Hence, the German money was called the Mark until Germany joined the European Union. If the mark was a picture of the official crown, the money came to be called the crown. This is still the name of the money in Denmark, Norway, Sweden, and the Czech Republic.

The American dollar was based on the Spanish money that circulated in the American colonies along with the British pounds. Remember that money is whatever is accepted as money. In the American colonies, there was a preference for the Spanish peso produced in Mexico City and for the Portuguese “pieces of eight”. These two coins were very similar in weight because they were imitations of the “thaler”, a coin that had been produced for centuries from the silver mines of Joachimsthal in Bohemia (in what is now the Czech Republic). Our word “dollar” is derived from “thaler”. The symbol for the dollar, “\$”, is the symbol for the Spanish peso.

All of the monies discussed so far have been what are called **“commodity money”**. ***This means that the value of the coin as money was equal to its value as a commodity.*** One could melt down a coin and sell the metal for the same worth as the coin. For centuries, countries have also used what is called **“fiat money” or “token money”**. ***This means that the metal in the coin is worth less than the value of the coin.*** So, if you were to take an American quarter today and melt the coin down, you would have some copper and some nickel. If you sold this metal, you would receive less than one cent. Yet the quarter coin is worth 25 cents in exchange for goods and services. Again, something is money if it is accepted as money. The 25 cent token coin is accepted in exchange for 25 cents worth of goods and services even though the metal in the coin is not worth 25 cents. Today, nearly all money is fiat money. Commodity money is extremely rare.

So far, we have considered only one function of money --- acting as a medium of exchange. There are two other functions that money serves. ***First, money is a store of value. This means that money is one way of holding wealth.*** Wealth is the value of everything you own. Think of everything you own --- your car, your clothes, your stereo, your home, your summer home, your private plane, your yacht, and some money. Money is part of your wealth. Later, we will consider how you determine the part of your wealth that you will hold in the form of money. (This is called your ***demand for money.***) You can have more money as part of your wealth (and less of something else) if you choose. You can do so by selling something you own. And you can have less money as part of

your wealth (and more of something else) if you choose. You can do so by buying something. As we will see, your decision as to how much of your wealth you choose to hold in the form of money has a role to play in determining what interest rates will be. *Second, money acts as a unit of account. This means that money is a unit of measurement of value.* So, just as we have pounds or grams to measure weight and we have miles or kilometers to measure distance, we have dollars to measure value. If I tell you that I live in a million dollar home, you have a good idea as to where and how I live. (What about a million peso home? What about a million ruble home?)

## 2. The Money Supply in the United States Today

So what comprises the money supply in the United States today? In the late 1970s, there was a commission created to study this question. The commission came up with four definitions of money that we use today. These are called **M-1, M-2, M-3, and L**. We will consider M-1 and M-2 below. We will not consider M-3 or L. However, you should know that L stands for **Liquidity**. It includes everything that is considered liquid. What does this mean? *An asset is considered “liquid” if it can be easily converted into money without risk of loss.* We will encounter many liquid assets as we discuss the financial system below.

Let us begin with **M-1**. This definition coincides with the medium of exchange function of money. M-1 includes mainly two items. We will call these **currency (including coins) and checkable deposits**. Actually, travelers’ checks are also included, but these are similar to currency. (“Checkable deposits” are found at Savings and Loans and at Credit Unions. At commercial banks, they are called **“demand deposits”**. Since they are the same, and since “checkable deposits” is a better name, we will call all of these “checkable deposits” here.)

### Test Your Understanding

Before you read on, try to answer the following questions. After you have read the text, check to see how you did.

1. Take out some currency. Any amount will do. Examine the front of the bill. Based on your examination, **what does this piece of paper represent?** That is, what is currency?
2. "I have \$200 in my checking account." If I go into the bank and tell them that I want to see my \$200, what will they show me? That is, **what is a checking account?**
3. What is a **credit card?**

Currency comprises a bit more than one fourth of the money supply as defined by M-1. Just what is currency? Take out a dollar bill and look at it. Just above the picture of George Washington, it tells you what it is --- a **Federal Reserve Note**. The Federal Reserve System will be discussed in detail below. For now, know that the Federal Reserve is a central bank. Just what is a note? The answer is that it is **a promise to pay -- or an IOU (I owe you)**. So that piece of paper you have in your hand tells you that a Federal Reserve Bank owes you \$1.00. If you look to the left of the picture on the older bills, you will see a letter --- from A to L. Around the letter, it says Federal Reserve Bank of \_\_\_\_\_ (name of a city). As we will see below, there are twelve Federal Reserve Banks around the country. Suppose you go to that city, show up at the Federal Reserve

Bank building, present that piece of paper, and say to them “it says here that you owe me \$1.00. I am here to collect.” What will they give you? Besides a dirty look, the answer is nothing (perhaps another dollar bill or four quarters). As you know from the description of the gold standard, there once was a time when you could receive approximately 1/20 of an ounce of gold. But today, that dollar bill is an IOU on which they will not pay you anything. It is uncollectible debt. So why do you hold it? The answer, of course, is that you hold it because you can exchange it for the goods and services you desire. You take it because you know that other people will take it. Once again, **money is whatever people will accept as money**. Just above the letter on the front of the dollar bill, it says that this note is **legal tender** for all debts, public and private. This means that, if I owe you \$1.00 and offer you that bill in payment, you are legally obligated to accept it. But they can print any phrase they want on the bill. If people will not accept the bill, it is not money. So in Russia, rubles were not accepted by many people for several years despite the fact that they were legal tender in Russia. And of course, your American dollar can be exchanged for goods and services in northern Mexico as well as in many other countries, even though it is definitely not legal tender there.

**Checkable (Demand) deposits** comprise a bit less than three fourths of the money supply as defined by M-1. Just what is a checkable deposit, known to most of us as a **checking account**? Suppose I get a statement from my bank that says that I have \$200 in my checking account. I go to the bank and tell them that I want to see my \$200. What will they show me? Of course, they do not show me two \$100 bills. What they show me is their debt. The bank owes me \$200. I cannot see it. I cannot touch it. It has no President’s face on it. But it is very real. The bank owes me \$200. And it is money because I can exchange it for goods and services. If I write you a check, I am transferring the IOU of the commercial bank from me to you in exchange for whatever goods or services you are selling me. Checkable deposits are not legal tender; if I owe you, you are entitled to refuse payment by check. But most people do accept checks. So the amounts in checking accounts are money.

We have focused exclusively on commercial banks here. But there are other financial institutions whose IOUs also serve as money. A **Savings and Loan (S&L)** today is similar to a commercial bank. But until the early 1980s, a Savings and Loan only had savings accounts (no checking accounts) and made loans almost exclusively for housing. And a **credit union** is also similar to a commercial bank. The only differences are (1) a credit union is owned by its depositors and (2) one must belong to a specific group to be a member of a credit union. In the following, we will use the words “financial institutions” to refer to commercial banks, savings and loans, and credit unions – the only financial institutions allowed to offer checking accounts.

Now let us consider **M-2**, the second definition of the money supply. **M-2 includes M-1, currency plus checkable deposits. But it adds three others: savings deposits, small time deposits (known as CDs), and money market funds (at a bank these are called money market deposit accounts)**. All three are IOUs of a financial institution. But the rules of the IOU differ. A **savings account** pays a higher rate of interest. There are usually some restrictions as to when one can take money out of a savings account. However, these are rarely enforced for small savings accounts. A **time deposit** (usually

called a **Certificate of Deposit or CD**) is also an IOU of a financial institution. These pay an even higher rate of interest. But the funds cannot be withdrawn until the specified time period expires (without a significant penalty). The time involved can be as little as a few months or can be several years. Finally, **Money Market Funds** (or Money Market Deposit Accounts) are also IOUs of financial institutions. Again, there are some restrictions as to when you can take the funds out of the account. The money placed in this account is invested in the money market. *The money market is a market for short-term IOUs.* Two short term IOUs are particularly important. One is the short-term IOU of the federal government, known as a **Treasury Bill**. These will be discussed below. The other is the short-term IOU of a very large corporation, known as **commercial paper**. The interest rate that you are paid on your money market fund depends on the interest rates received by your financial institution when it invests in the money market.

Notice that these three components of M-2 are not media of exchange. That is, you cannot take your savings account book nor your CD nor your money market fund to a store and exchange them for any goods or services. First, you must convert them into money, either as currency or into your checking account. But these are extremely **liquid**. That is, they are extremely easy to convert into money. For your savings account (and sometimes for your money market fund), all you have to do is use your ATM card (or call the financial institution) and instruct the financial institution to convert your account into either your checking account or into currency. There is no risk of loss. For your Certificate of Deposit (CD), you do have to wait until the time period expires. But this is usually not very long. M-2 is a very important measure. It is important because it seems to explain changes in Real GDP better than M-1. We know that when the money supply increases, people will take the extra money and spend some of it. This increase in spending will cause Real GDP to rise (and may also cause prices to rise). **There has been a closer connection between changes in M-2 and changes in Real GDP than there is between changes in M-1 and changes in Real GDP.**

In discussing the money supply, we have not mentioned **credit cards**. Just what is a credit card? Like money, a credit card is an IOU. But this time, you owe the financial institution. *A credit card is a pre-approved loan up to a certain amount (your credit limit) at a very high interest rate. Every time you use your credit card, you are borrowing from the financial institution.* Credit cards are substitutes for money, but are not money itself.

In conclusion, notice that **money is not “backed”**. Until 1934, one could exchange dollars for gold. So dollars were backed by gold. But this is no longer true. The United States does not have a certain amount of gold for every dollar in circulation. If money is not backed, what gives it its value? **The answer is its acceptability.** As long as people are willing to accept dollar bills or checks in exchange for goods and services, these dollar bills and checks have value. Indeed, their value is equal to the goods and services one can obtain in exchange for them.

### **Test Your Understanding**

Click on Money Supply Data on my web site.

1. What are the **components of M-1**? What is the total amount of each?
2. What is the total value of M-1 for the most recent period? \_\_\_\_\_

3. What are the additional **components of M-2**? What is the total value of each?
4. What is the total value of M-2 in the most recent period? \_\_\_\_\_

### 3. The Federal Reserve System

Earlier, we said that the Federal Reserve System (known as “**the Fed**”) is the central bank of the United States. *A central bank is simply a bank for banks.* It does for commercial banks what the commercial banks do for you. You have an account at your bank, say Wells Fargo Bank. Wells Fargo has an account at its bank, the Federal Reserve Bank. You call your account at Well Fargo Bank a checking account. Remember that your checking account represents the IOU of Wells Fargo Bank. *Wells Fargo’s account at the Federal Reserve Bank is called “reserves”. Reserves represent the IOU of the Federal Reserve Bank to Wells Fargo Bank.* Unlike you, Well Fargo does not write checks against its account. But otherwise, reserves are to Wells Fargo Bank what your checking account is to you. You also are able to borrow at your bank, Wells Fargo Bank. You can borrow to buy a car, buy a home, and so forth. Wells Fargo Bank is also able to borrow from its bank, the Federal Reserve Bank. This borrowing is called “discounting”. *Therefore, discounting is the act of a Federal Reserve Bank lending to a commercial bank.* Like you and any other borrower, Wells Fargo Bank must repay its loan with interest. This interest rate is named the discount rate. *Therefore, the discount rate is the interest rate charged by a Federal Reserve Bank to a commercial bank.* As we will see, the Federal Reserve System has more important functions than simply holding reserves and lending to commercial banks. Through its holding of reserves and its lending to commercial banks it controls how many dollars are in existence. As you already know, the number of dollars in existence, called the **money supply**, is a major influence on the amount of aggregate demand (total spending) and therefore on Real GDP and on prices.

The organization of the Federal Reserve System is show below. As we saw earlier, there are **twelve Federal Reserve Banks** in the United States. (This is the reason that the letters on the old currency go from A to L.) The Fed is a system of twelve central banks. When the Federal Reserve Act was written in 1913, the country was divided into twelve Federal Reserve Districts. Each district has a Federal Reserve Bank. So there is a Federal Reserve Bank of Boston, New York, Philadelphia, Richmond, Atlanta, Cleveland, Chicago, Minneapolis, St. Louis, Dallas, Kansas City, and San Francisco. The western region of the Federal Reserve Bank of San Francisco includes all of California, Oregon, Washington, Hawaii, Alaska, Idaho, Nevada, Utah, and Arizona. Each Federal Reserve Bank is technically organized as a private bank would be organized. Each is owned by the commercial banks in its territory. Therefore, Wells Fargo Bank is an owner of the Federal Reserve Bank of San Francisco. Wells Fargo had no choice in becoming an owner. And the amount it had to pay to become an owner was set for it. So Wells Fargo Bank considers itself a **member bank**, as though the Federal Reserve System were a club it was forced to join. Each Federal Reserve Bank has a **Board of Directors**, as would any private business. And each of the 12 Federal Reserve Banks has a **President**.

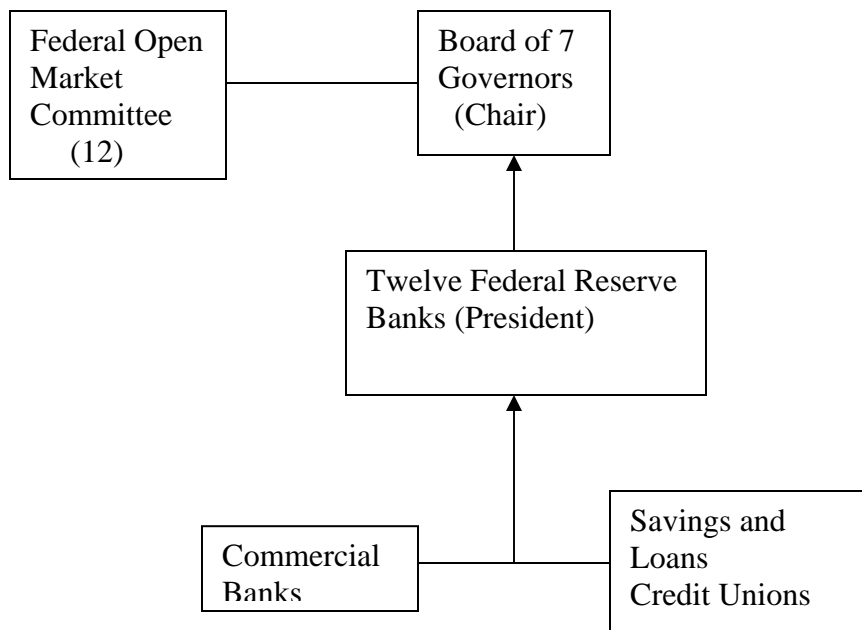
Governing the entire Federal Reserve System is a **Board of Governors**, located in Washington D.C. **The Board of Governors is composed of seven people.** Each one is appointed by the President of the United States and confirmed by the Senate. If appointed, one gets a **non-renewable fourteen-year term.** The idea was to take the governance of the Federal Reserve System out of everyday politics as much as possible.

So once appointed, you do as you think is best for fourteen years. You cannot be removed from the Board for any reason except corruption. (There have so far been no examples of corruption.) After fourteen years, you cannot be re-appointed. So there is no sense trying to please a President just to keep your job. (If you are appointed to fill out the term of another governor who died or resigned, you may have the rest of that term plus one 14-year term of your own.) The fourteen-year terms are staggered so that one begins every two years. The date of a new term is January 31<sup>st</sup> of the even numbered year. Therefore, in a four year Presidential term, if there are no deaths or resignations, a President can appoint only two of the seven Governors.

Of the seven Governors, one is the **Chair**. The Chair is appointed to the Board of Governors according to the rules stated in the previous paragraph. **But as Chair of the Board, the Chair is appointed by the President of the United States for a four-year term.** At the end of that term, the Chair can be reappointed by the President of the United States (as long as the Chair has time left to serve on the Board). Or the Chair may be demoted to being just another member of the Board. Unless the fourteen-year term is complete, the Chair cannot be removed from the Board by the President of the United States. As we will see, the Chair is one of the most powerful people in the world as regards economic matters. If the Chair is a good leader, the Board will follow the wishes of the Chair most of the time. (The Board has seven people, so a vote of four to three wins. But the Board tries to make its decisions by consensus.) A few words from the Chair as to what he or she is thinking can have major effects throughout the world.

Let us illustrate this process. In 1979, President Carter appointed **Paul Volcker** as Chair. The term had originally begun in 1978. But the person who had been appointed in 1978, G. William Miller, left the position of Chair to become Secretary of the Treasury. Volcker had been a top executive in some of the commercial banks in New York City as well as a top executive of the Federal Reserve Bank of New York. Many people credit Volcker for the rapid reduction of the inflation rates in the early 1980s. Other people blame Volcker for the very deep recession and high rates of unemployment of the early 1980s. The first term as Chair for Volcker finished in 1983. President Reagan re-appointed him for another term. He did so reluctantly. But he believed that the financial leaders had great faith in Volcker. Four years later, in 1987, Volcker's term was concluded again. Most people thought he would be re-appointed. But President Reagan did not re-appoint him. President Reagan demoted Volcker and brought in **Alan Greenspan** to be the Chair. Volcker immediately resigned from the Board (and accepted a \$3 million book advance). Alan Greenspan was re-appointed by President Bush (41) in August 1991. In January of 1992, the fourteen-year term ended; Alan Greenspan was appointed to the new 14-year term (he was entitled to a term of his own because he had served only 4 ½ years of the previous term). His term on the Board will end on January 31, 2006. He was re-appointed as Chair by President Clinton in 1996 and again in 2000, even though President Clinton is a Democrat and Alan Greenspan is a Republican. His term as Chair expired in January of 2004. President George W. Bush appointed Alan Greenspan to complete the last two years of his term. Alan Greenspan ended much of the secrecy that used to exist at the Fed. Because he has been a much more public figure than his predecessors, many people are aware of him. Many people give him credit for the remarkable economic performance of the 1990s. Although he has many critics, his views on economic matters are very highly respected.

We hear on the news that “the Fed will meet next Tuesday”. There is a meeting and then there is an announcement that interest rates will rise or will fall. How the Fed influences interest rates will be considered later. But the group involved with this meeting is called the Federal Open Market Committee (FOMC). *The Federal Open Market Committee (FOMC) is composed of twelve people. Seven are the Governors, headed by the Chair. The other five are Presidents of the Federal Reserve Banks.* Remember that there are twelve Federal Reserve Banks and that each has a President. The President of the Federal Reserve Bank of New York is always one of the members of the Federal Open Market Committee. The other eleven Presidents rotate in and out of the other four positions. The Federal Open Market Committee meets about every six weeks in Washington D.C. It may also meet via conference call in between scheduled meetings. While technically the seven Governors can outvote the five Federal Reserve Bank Presidents, in practice they debate the issues until they reach a consensus as to what to do. An announcement of their decision is made at the end of the meeting. This announcement is greatly anticipated and is always a big news story.



### Test Your Understanding

1. Go to the following site: <http://www.frbsf.org/system/fedsystem/monpol/tofc.html>  
What are the goals of the Federal Reserve? Are they in conflict?
2. Go to the following site: <http://www.bog.frb.fed.us/FOMC/MEMBERS.HTM>  
Who are the current members of the Federal Open Market Committee (FOMC)?
3. Go to the following site: <http://woodrow.mpls.frb.fed.us/pubs/region/98-06/meyer-FOMC.html>

Read the article and then write a brief description of a meeting of the FOMC. Be sure to explain the most significant points of the article.

#### 4. The Balance Sheet of a Financial Institution

Modern banking began in ancient Babylonia, some 7,000 years ago. Let us examine what a bank (or other financial institution) does. Examine the following **T account**. A T account is commonly used in accounting. **On the left side, there is a list of all of the financial institution's assets.** That is, there is a list of everything the financial institution owns. **On the right side, there is a list of the places that the financial institution got the money to buy what it owns. This is a list of its liabilities (its debts) and its owners' equity (or net worth).** That is, the financial institution got its assets either by borrowing to pay for them or by paying for them with the money invested by the owners.

Bank A	
Assets:	Liabilities:
Reserves	Checkable Deposits
Federal Funds	Savings Deposits
Treasury Securities	Time Deposits (CDs)
Loans	Money Market Funds (or Deposit Accts)
Buildings, Land, and Other Capital	Other Deposits
	Discounts
	Net Worth (Owner's Equity)

Let us examine each of these in turn. As noted above, **reserves are the IOUs of a Federal Reserve Bank to the commercial bank, Bank A.** This is Bank A's account at its bank, the Federal Reserve Bank. (Currency in the bank is also part of these reserves.) **Reserves pay an interest rate of zero** (just like currency pays you an interest rate of zero). So why would a commercial bank have these reserves? The answer is that "they are required to". **All commercial banks that are members of the Federal Reserve System must have ten cents in their reserves for every \$1.00 they have in checkable deposits.** This is called the **"reserve requirement"** – 10%. That is, if you put \$1.00 into your checking account at Bank A, then Bank A must have ten cents in its account at the Federal Reserve Bank. These reserves are then called **"required reserves"**. If a commercial bank chooses to have more reserves than it is required to have, the difference is called **"excess reserves"**. Because reserves pay no interest, commercial banks usually will not choose to have excess reserves.

The second asset is called **"federal funds"**. The **Federal Funds Market** was developed in the 1920s. This is **a market in which one commercial bank can lend to another commercial bank.** These loans are typically for a very short term. Because "Federal Funds" are listed as an asset in the T account above, Bank A must have loaned to another commercial bank. If Bank A had borrowed from another commercial bank, "Federal Funds" would be listed as a liability. As with any other loan, commercial banks pay interest to other banks. **The interest rate charged by one commercial bank to another commercial bank is called the federal funds rate.** As we will see, this is one of the most important interest rates there is.

The third asset is called “Treasury Securities”. *Treasury Securities are IOUs of the United States Treasury.* The Treasury Department runs the financial affairs for the executive branch of the federal government. **So these are IOUs of the United States government.** (Do not confuse the “United States Government” with the “Federal Reserve”.) The sum of all the Treasury Securities is called the **national debt**. As we saw earlier, part of the national debt is held by commercial banks. Banks hold this debt because it pays a good interest rate and because it is very liquid (that is, it can easily be converted into money without loss). The Treasury Securities come in three forms --- bills, notes, and bonds. *A Treasury Bill (or T-Bill) is an IOU of the United States government that will be repaid in one year or less.* Typically, there are 3-month, 6-month, and 1-year Treasury Bills. *A Treasury Note is an IOU of the United States government that will be repaid in more than one year and usually in no more than ten years.* *A Treasury Bond is an IOU of the United States government that will be repaid in more than ten years.* (The ten-year dividing line is not rigid.)

**Loans are the main asset of a financial institution.** In fact, over 80% of a financial institution’s assets are in the form of loans. Financial institutions make loans for all kinds of purposes --- personal loans, credit cards, home loans, car loans, business loans, and so forth. There are commercial banks that specialize in lending to businesses. There are mortgage companies that specialize in lending to people to buy homes. Credit Unions tend to specialize in personal loans. And then there are general financial institutions that make loans for many different purposes. Some of the loans require collateral. *Collateral means that the financial institution will get something physical if the borrower fails to repay the loan.* So, if you borrow to buy a home or car, you pledge the home or car as collateral. If you fail to repay, the financial institution gets the home or car. The interest rates charged by the commercial banks have many names. An important rate is called the prime rate. *The prime rate is the interest rate charged by a commercial bank to those borrowers considered to be the least risky.* It is important because many other interest rates are connected to it. So, for example, if I have a small business and the prime rate rises, the interest rate that I will have to pay will also rise.

The other assets of the commercial banks are less significant. Of course, they own the buildings for their banks and land on which to build the buildings. They own computers and other capital goods.

### Test Your Understanding

Go to the Interest Rate site on my web page:

What is the current interest rate for each of the following:

Federal Funds Rate _____	3 month Treasury Bill Rate _____
Prime Rate _____	5 year Treasury Note Rate _____
Discount Rate _____	30 year Treasury Bond Rate _____

The most important **liabilities** of a financial institution have been described already. Checkable deposits, savings deposits, time deposits (CDs), and money market funds (or money market deposit accounts) are all IOUs of the financial institution. There are various rules for the IOUs, as described earlier. Discounts represent the amount that Bank A has borrowed from the Federal Reserve Bank.

The **Net Worth (or Owner’s Equity)** represents the amount the owners have invested into the financial institution. **What is unique about a financial institution is that the**

**share of the assets paid for by the owners is very small.** In a typical business, perhaps 30% to 50% or more of the assets will have been provided by the owners. In a financial institution this is typically about 8%. In the 1980s, some major financial institutions had the owners' share drop to 2% and below.

The small share of Net Worth (and the corresponding large share of liabilities) puts financial institutions in a somewhat precarious situation. In making their loans, they assume that perhaps 2% to 3% of the loans will not be repaid and make provision for this loss. But what happens if the economy goes into a very serious recession and many more borrowers than expected are unable to repay their loans? Assume that the liabilities are equal to 92% of the value of the assets. If the value of the loans (the main asset) were to decline by more than 8%, the value of the assets would become less than the value of the liabilities. To see this assume the following numbers exist for Bank A.

Bank A	
Assets:	100
Reserves	10
Federal Funds	5
Treasury Securities	5
Loans	80
Buildings, Land, and Other Capital	
Liabilities	92
Checkable Deposits	
Savings Deposits	
Time Deposits (CDs)	
Money Market Funds (or Deposit Accts)	
Other Deposits	
Discounts	
Net Worth (Owner's Equity)	8

If, for some reason, \$10 of loans cannot be repaid and the value of the Loans falls to 70 and the total assets of the Bank A would fall to 90. With total assets of \$90 and total liabilities of \$92, **Bank A does not own enough to pay all of its liabilities.** Its Net Worth is negative. We say that Bank A is "*insolvent*". If this is a temporary situation, Bank A might borrow from the Federal Reserve Bank (discounting) or from other commercial banks (federal funds) to get it through the bad period. The real problem occurs if this is a permanent situation. For example, Bank A may have made many high-risk loans that did not pay off. In most cases, the Federal Reserve will try to find a healthy commercial bank to take over Bank A. For example, in the early 1970s, there was a corruption scandal involving the largest commercial bank in San Diego County. The owner of the commercial bank had made loans to his other business enterprises that he had no intention of repaying. For doing this, he ultimately went to jail. This bank was taken over by Crocker Bank of San Francisco, which was subsequently taken over by Wells Fargo Bank. If you were a customer of the bank, you received new checks; otherwise, nothing changed. If there is no healthy commercial bank willing to take over Bank A, the next step is to pay off the depositors at Bank A. There is insurance specifically for this purpose. The agency that handles this insurance is called the **Federal Deposit Insurance Corporation (FDIC)**. Despite the name, it is a government agency. All accounts at the commercial bank are officially insured up to \$100,000. (The largest bank failure in American history was that of the Continental Illinois Bank of Chicago in the 1980s. In this episode, every depositor received every penny of his or her account --- even those who had more than \$100,000 in their accounts.)

### Test Your Understanding

Go to the site: [http://www.bankofamerica.com/annual.report/html/cons\\_balance.cfm](http://www.bankofamerica.com/annual.report/html/cons_balance.cfm)

What are the main assets of Bank of America? What percent of the assets is comprised of loans?

What are the main liabilities of Bank of America?

What percent of the assets of Bank of America was provided by owners? (Calculate the stockholders' equity as a percent of the total assets)

## 5. Conclusion

In this chapter, we have examined the phenomenon of money. We have seen that it serves three main functions: a medium of exchange, a store of value, and a unit of account. We have examined those things that have served as money in the past as well as those things that serve as money in the United States today (using both the M-1 and M-2 definitions). In the world today, money is composed of IOUs. Indeed, most financial instruments are IOUs. This money is not “backed” by anything other than the willingness of the people to accept it in exchange for goods and services. We have also examined some major parts of the financial system: the Federal Reserve System and those financial institutions that are allowed to offer checking accounts (commercial banks, savings and loans, and credit unions). We saw how the Federal Reserve System is organized and governed. And we saw what the financial institutions do. Both of these have a major role to play in the process by which money is created. So we now turn to this topic: how is money created?

### Practice Quiz for Chapter 20

1. **The function of money** that is defined as “money is one way of holding wealth” is the \_\_\_\_\_ function.
    - a. medium of exchange
    - b. store of value
    - c. unit of account
    - d. barter
  2. Which of the following has been **commodity money**?
    - a. gold
    - b. a dime
    - c. a dollar bill
    - d. a CD
    - e. all of the above
  3. Which of the following is part of **M-1**?
    - a. gold
    - b. checkable deposits
    - b. CDs
    - d. credit cards
  4. Which of the following is the most **liquid**?
    - a. a savings account
    - b. a house
    - c. a CD
    - d. a mortgage loan
- 5 through 10 Match the definition with the appropriate letter below:
5. A commercial bank borrowing from a central bank
  6. A bank for commercial banks
  7. An IOU of the United States government payable in one year or less
  8. The interest rate charged by a commercial bank to another commercial bank
  9. 7 Governors and 5 of the Federal Reserve Bank Presidents
  10. The government agency that insures commercial bank deposits

5 through 10:

- |                                       |                       |               |
|---------------------------------------|-----------------------|---------------|
| a. FOMC                               | f. discounting        | k. CD         |
| b. FDIC                               | g. Treasury Bill      | l. collateral |
| c. Chair of the Federal Reserve Board | h. Treasury Note      | m. insolvent  |
| d. Central Bank                       | i. Federal Funds Rate | n. prime rate |
| e. Reserves                           | j. Net Worth          |               |