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Money and Banking

? Fundamental Questions

1. What is money?
2. How is the U.S. money supply defined?
3. How do countries pay for international transactions?
4. Why are banks considered intermediaries?
5. How does international banking differ from domestic banking?
6. How do banks create money?

Up to this point, we have been talking about aggregate expenditures, aggregate demand and supply, and fiscal policy without explicitly discussing money. Yet money is used by every sector of the economy in all nations and plays a crucial role in every economy. In this chapter, we discuss what money is, how the quantity of money is determined, and the role of banks in determining this quantity. In the next chapter, we examine the role of money in the aggregate demand and supply model.

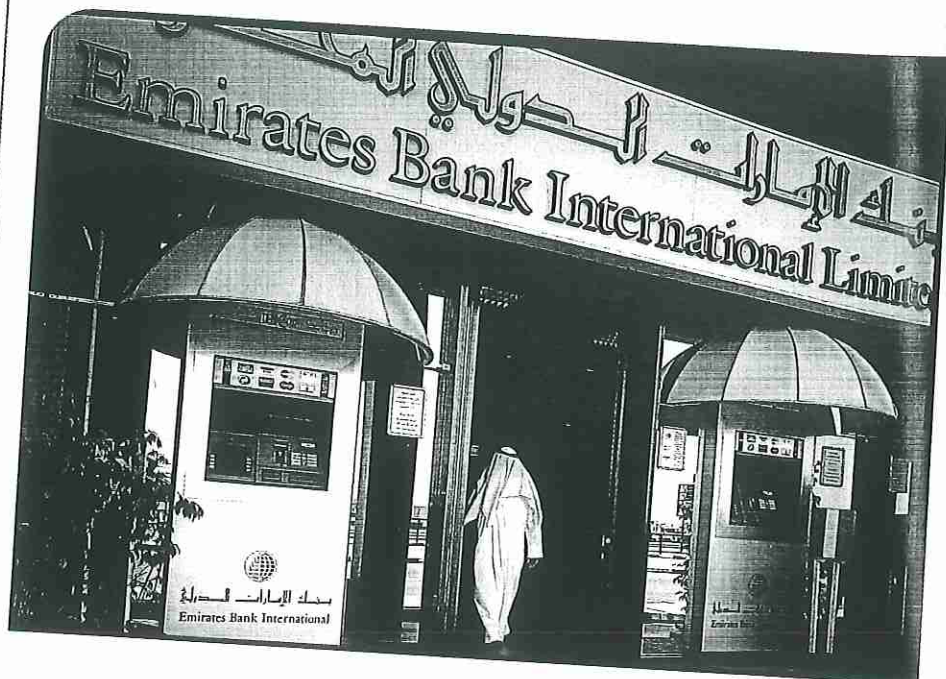
As you will see in the next two chapters, the quantity of money has a major impact on interest rates, inflation, and the amount of spending in the economy. Thus, money is important for macroeconomic policymaking, and government officials use both monetary and fiscal policy to influence the equilibrium level of real GDP and prices.



1. What is money?

money : general sellers of goods and services

liquid : that can be exchanged for goods and services



The use of money is lower.

Banks and the banking system also play key roles, both at home and abroad, in the determination of the amount of money in circulation and the movement of money between nations. After we define money and its functions, we look at the banking system. We begin with banking in the United States, and then discuss international banking. Someone once joked that banks follow the rule of 3-6-3: They borrow at 3 percent interest, lend at 6 percent interest, and close at 3 P.M. If those days ever existed, clearly they no longer do today. The banking industry in the United States and the rest of the world has undergone tremendous change in recent years. New technology and government deregulation are allowing banks to respond to changing economic conditions in ways that were unthinkable only a few years ago, and these changes have had dramatic effects on the economy.



1. What is money?

money: anything that is generally acceptable to sellers in exchange for goods and services

liquid asset: an asset that can easily be exchanged for goods and services

1. What Is Money?

Money is anything that is generally acceptable to sellers in exchange for goods and services. The cash in your wallet can be used to buy groceries or a movie ticket. You simply present your cash to the cashier, who readily accepts it. If you wanted to use your car to buy groceries or a movie ticket, the exchange would be more complicated. You would probably have to sell the car before you could use it to buy other goods and services. Cars are seldom exchanged directly for goods and services (except for other cars). Because cars are not a generally acceptable means of paying for other goods and services, we don't consider them to be money. Money is the most liquid asset. A **liquid asset** is an asset that can easily be exchanged for goods and services. Cash is a liquid asset; a car is not. How liquid must an asset be before we consider it money? To answer this question, we must first consider the functions of money.

1.a. Functions of Money

Money serves four basic functions: It is a *medium of exchange*, a *unit of account*, a *store of value*, and a *standard of deferred payment*. Not all monies serve all of these functions equally well, as will be apparent in the following discussion. But to be money, an item must perform enough of these functions to induce people to use it.

1.a.1. Medium of Exchange Money is a medium of exchange; it is given in exchange for goods and services. Sellers willingly accept money as payment for the products and services that they produce. Without money, we would have to resort to *barter*, the direct exchange of goods and services for other goods and services.

For a barter system to work, there must be a *double coincidence of wants*. Suppose Bill is a carpenter and Jane is a plumber. In a monetary economy, when Bill needs plumbing repairs in his home, he simply pays Jane for the repairs, using money. Because everyone wants money, money is an acceptable means of payment. In a barter economy, Bill must offer his services as a carpenter in exchange for Jane's work. If Jane does not want any carpentry work done, Bill and Jane cannot enter into a mutually beneficial transaction. Bill has to find a person who can do what he wants and who also wants what he can do—there must be a double coincidence of wants.

The example of Bill and Jane illustrates the fact that barter is a lot less efficient than using money. This means that the cost of a transaction in a barter economy is higher than the cost of a transaction in a monetary economy. The use of money as a medium of exchange lowers transaction costs.

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The people of Yap Island highly value, and thus accept as their medium of exchange, giant stones. In most cultures, however, money must be *portable* in order to be an effective medium of exchange—a property that the stone money of Yap Island clearly lacks. Another important property of money is *divisibility*. Money must be measurable in both small units (for low-value goods and services) and large units (for high-value goods and services). Yap stone money is not divisible, so it is not a good medium of exchange for the majority of goods that are bought and sold.

1.a.2. Unit of Account Money is a unit of account: We price goods and services in terms of money. This common unit of measurement allows us to compare relative values easily. If whole-wheat bread sells for a dollar a loaf and white bread sells for 50 cents, we know that whole-wheat bread is twice as expensive as white bread.

Using money as a unit of account is efficient. It reduces the costs of gathering information on what things are worth. The use of money as a unit of account lowers information costs relative to barter. In a barter economy, people constantly have to evaluate the worth of the goods and services being offered. When money prices are placed on goods and services, their relative value is obvious.

1.a.3. Store of Value Money functions as a store of value or purchasing power. If you are paid today, you do not have to hurry out to spend your money. It will still have value next week or next month. Some monies retain their value better than others. In colonial New England, both fish and furs served as money. But because fish does not store as well as furs, its usefulness as a store of value was limited. An important property of a money is its *durability*, its ability to retain its value over time.

Inflation plays a major role in determining the effectiveness of a money as a store of value. The higher the rate of inflation, the faster the purchasing power of money falls. In high-inflation countries, workers spend their pay as fast as possible because the purchasing power of their money is falling rapidly. It makes no sense to hold on to a money that is quickly losing value. In countries where the domestic money does not serve as a good store of value, it ceases to fulfill this function of money, and people begin to use something else as money, like the currency of another nation. For instance, U.S. dollars have long been a favorite store of value in Latin American countries that have experienced high inflation. This phenomenon—**currency substitution**—has been documented in Argentina, Bolivia, Mexico, and other countries during times of high inflation.

1.a.4. Standard of Deferred Payment Finally, money is a standard of deferred payment. Debt obligations are written in terms of money values. If you have a credit card bill that is due in 30 days, the value you owe is stated in monetary units—for example, dollars in the United States and yen in Japan. We use money values to state amounts of debt, and we use money to pay our debts.

We should make a distinction here between money and credit. Money is what we use to pay for goods and services. **Credit** is available savings that are lent to borrowers to spend. If you use your Visa or MasterCard to buy a shirt, you are not buying the shirt with your money. You are taking out a loan from the bank that issued the credit card in order to buy the shirt. Credit and money are different. Money is an asset, something you own. Credit is *debt*, something you owe.

1.b. The U.S. Money Supply

The quantity of money that is available for spending is an important determinant of many key macroeconomic variables, since changes in the money supply affect interest rates, inflation, and other indicators of economic health. When economists measure the money supply, they measure spendable assets. Identifying those assets,

The use of money as a unit of account lowers information costs.

currency substitution: the use of foreign money as a substitute for domestic money when the domestic economy has a high rate of inflation

credit: available savings that are lent to borrowers to spend

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2. How is the U.S. money supply defined?

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M1 money supply: the financial assets that are the most liquid

transactions account: a checking account at a bank or other financial institution that can be drawn on to make payments

however, can be difficult. Although it would seem that *all* bank deposits are money, some bank deposits are held for spending, while others are held for saving. In defining the money supply, then, economists must differentiate among assets on the basis of their liquidity and the likelihood of their being used for spending.

The problem of distinguishing among assets has produced more than one definition of the money supply. Today in the United States, the Federal Reserve uses M1 and M2.¹ Economists and policymakers use both definitions to evaluate the availability of funds for spending. Although economists have tried to identify a single measure that best influences the business cycle and changes in interest rates and inflation, research indicates that different definitions work better to explain changes in macroeconomic variables at different times.

1.b.1. M1 Money Supply The narrowest and most liquid measure of the money supply is the **M1 money supply**, or financial assets that are immediately available for spending. This definition emphasizes the use of money as a medium of exchange. The M1 money supply consists of currency held by nonbank public, traveler's checks, demand deposits, and other checkable deposits. Demand deposits and other checkable deposits are **transactions accounts**; they can be used to make direct payments to a third party.

Surveys find that families use their checking account for about 30 percent of purchases. Cash transactions account for about 44 percent of purchases.

The components of the M1 money supply are used for about 74 percent of family purchases. This is one reason why the M1 money supply may be a useful variable in formulating macroeconomic policy.

Currency includes coins and paper money in circulation (in the hands of the public). In 2006, currency represented 53 percent of the M1 money supply. A common misconception about currency today is that it is backed by gold or silver. This is not true. There is nothing backing the U.S. dollar except the confidence of the public. This kind of monetary system is called a *fiduciary monetary system*. *Fiduciary* comes from the Latin *fiducia*, which means "trust." Our monetary system is based on trust. As long as we believe that our money is an acceptable form of payment for goods and services, the system works. It is not necessary for money to be backed by any precious object. As long as people believe that a money has value, it will serve as money.

The United States has not always operated under a fiduciary monetary system. At one time, the U.S. government issued gold and silver coins and paper money that could be exchanged for silver. In 1967, Congress authorized the U.S. Treasury to stop redeeming "silver certificate" paper money for silver. Coins with an intrinsic value are known as *commodity money*; they have value as a commodity in addition to their face value. The problem with commodity money is that as the value of the commodity increases, the money stops being circulated. People hoard coins when their commodity value exceeds their face value. For example, no one would take an old \$20 gold piece to the grocery store to buy \$20 worth of groceries because the gold is worth much more than \$20 today.

The tendency to hoard money when its commodity value increases is called *Gresham's Law*. Thomas Gresham was a successful businessman and financial

¹ Until March 2006, the Federal Reserve also published a broader measure of the money supply known as M3.

2. Banking

Commercial banks are financial institutions that offer deposits on which checks can be written. In the United States and most other countries, commercial banks are privately owned. *Thrift institutions* are financial institutions that historically offered just savings accounts, not checking accounts. Savings and loan associations, credit unions, and mutual savings banks are all thrift institutions. Prior to 1980, the differences between commercial banks and thrift institutions were much greater than they are today. For example, only commercial banks could offer checking accounts, and those accounts earned no interest. The law also regulated maximum interest rates. In 1980, Congress passed the Depository Institutions Deregulation and Monetary Control Act, in part to stimulate competition among financial institutions. Now thrift institutions and even brokerage houses offer many of the same services as commercial banks. In 1999, Congress passed the Gramm-Leach-Bliley Act, which allowed commercial banks to expand their business into other areas of finance, including insurance and selling securities. This will permit greater integration of financial products under one umbrella known as a financial holding company.

2.a. Financial Intermediaries

Both commercial banks and thrift institutions are *financial intermediaries*, middlemen between savers and borrowers. Banks accept deposits from individuals and firms, then use those deposits to make loans to individuals and firms. The borrowers are likely to be different individuals or firms from the depositors, although it is not uncommon for a household or business to be both a depositor and a borrower at the same institution. Of course, depositors and borrowers have very different interests. For instance, depositors typically prefer short-term deposits; they don't want to tie up their money for a long time. Borrowers, on the other hand, usually want more time for repayment. Banks typically package short-term deposits into longer-term loans. To function as intermediaries, banks must serve the interests of both depositors and borrowers.

A bank is willing to serve as an intermediary because it hopes to earn a profit from this activity. It pays a lower interest rate on deposits than it charges on loans; the difference is a source of profit for the bank. Islamic banks are prohibited by holy law from charging interest on loans; thus, they use a different system for making a profit (see the Global Business Insight "Islamic Banking").

2.b. U.S. Banking

2.b.1. Current Structure If you add together all the pieces of the bar graph in Figure 2, you see that there were 100,877 depository institution offices operating in the United States in 2005. Roughly 85 percent of these offices were operated by banks and 15 percent by savings institutions.

Historically, U.S. banks were allowed to operate in just one state. In some states, banks could operate in only one location. This is known as *unit banking*. Today there are still many unit banks, but these are typically small community banks.

Over time, legal barriers have been reduced so that today almost all states permit entry to banks located out of state. In the future, banking is likely to be done on a national rather than a local scale. The growth of automated teller machines (ATMs) is a big step in this direction. The ATM networks give bank customers access to services over a much wider geographic area than any single bank's branches cover. These international networks allow a bank customer from Dallas to withdraw cash in Seattle, Zurich, or almost anywhere in the world. Today more than one-fourth of ATM transactions occur at banks that are not the customer's own bank.

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4. Why are banks considered intermediaries?

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