Money and the Monetary System
Definition of Money

Money

Any commodity or token that is generally accepted as a means of payment.

Any Commodity or Token

- Something that can be recognized
- Divided up into small parts.
Early colonists used Wampum

“Wampum came to be used extensively for trade by the colonists as well as the natives, e.g. in 1664 Stuyvesant arranged a loan in wampum worth over 5,000 guilders for paying the wages of workers constructing the New York citadel (page 458). Like more modern forms of money, wampum could be affected by inflation. Some tribes such as the Narragansetts specialized in manufacturing wampum (by drilling holes in the shells so that the beads could be strung together) but their original craft skills were made redundant when the spread of steel drills enabled unskilled workers, including the colonists themselves, to increase the supply of wampum a hundredfold thus causing a massive decrease in its value. A factory for drilling and assembling wampum was started by J.W. Campbell in New Jersey in 1760 and remained in production for a hundred years.”


Roy Davies, http://www.ex.ac.uk/~RDavies/arian/northamerica.html
Definition of Money

The Nation's Early Forms of Money

Early colonists used trinkets, gunpowder, and household items to barter with Native Americans.

The colonial treasury of Massachusetts issued the first paper currency in 1690.

After the issuance of the first paper currency, colonial leaders began pushing for a national banking system to keep pace with the expanding economy. That discussion was put on hold, however, by the Revolutionary War.

Continental currency entered the mainstream; however, old issues of Continental currency were not recalled, which caused the currency's value to drop drastically. As a result, the phrase "not worth a Continental" came into being.

Source: Federal Reserve Bank Kansas City
WHAT IS MONEY?

Generally Accepted
- It can be used to buy anything and everything.

Means of Payment

A means of payment is a method of settling a debt.

Money performs three vital functions:
- **Medium of exchange**
- **Unit of account**
- **Store of value**
Medium of Exchange

Medium of exchange

An object that is generally accepted in return for goods and services.

Without money, you would have to exchange goods and services directly for other goods and services—an exchange called barter.
Unit of Account

A **unit of account** is an agreed-upon measure for stating the prices of goods and services.

Table shows how a unit of account simplifies price comparisons.

<table>
<thead>
<tr>
<th>Good</th>
<th>Price in money units</th>
<th>Price in units of another good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock concert</td>
<td>$32.00</td>
<td>4 movies</td>
</tr>
<tr>
<td>Movie</td>
<td>$8.00</td>
<td>4 cappuccinos</td>
</tr>
<tr>
<td>Cappuccino</td>
<td>$2.00</td>
<td>2 ice-cream cones</td>
</tr>
<tr>
<td>Ice-cream cone</td>
<td>$1.00</td>
<td>4 local phone calls</td>
</tr>
<tr>
<td>Local phone call</td>
<td>$0.25</td>
<td></td>
</tr>
</tbody>
</table>
WHAT IS MONEY?

■ Store of Value

A store of value is any commodity or token that can be held and exchanged later for goods and services.
## Money Today

Money in the world today is called fiat money.

**Fiat money**

Objects that are accepted as money are because the law orders them to be money.

The objects that we use as money today are:

- **Currency**
- **Deposits at banks and other financial institutions**
Currency

The notes (dollar bills) and coins that we use in the United States today are known as currency.

Notes are money because the government declares them to be with the words printed on every dollar bill:

“This note is legal tender for all debts, public and private.”
WHAT IS MONEY?

Deposits

Deposits at banks, credit unions, savings banks, and savings and loan associations are also money.

Deposits are money because they can be converted into currency on demand and are used directly to make payments.

Bank deposits are money, but checks are not money.
Figure shows what happens when a person pays by writing a check.

Initially, Colleen has $500 in her bank account and Rocky’s Rollers has $3,000 in its bank account.
Colleen buys some inline skates for $200 and writes a check to pay for them.

The balance on Colleen’s bank account decreases by $200 and the balance on Rocky’s bank account increases by $200.
The bank deposits are money, but the check is not money.
WHAT IS MONEY?

Credit Cards, Debit Cards, E-Checks, and E-Cash

Credit Cards

A credit card is not money because it does not make a payment.

When you use your credit card, you create a debt (the outstanding balance on your card account), which you eventually pay off with money.
Debit Cards
A debit card is not money. It is like an electronic check.

E-Checks
An e-check is not money.
It is an electronic equivalent of a paper check.

E-Cash
Works like money and when it becomes widely acceptable, it will be money.
WHAT IS MONEY?

- **Official Measures of Money: M1 and M2**

  **M1**
  Currency and traveler’s checks plus checkable deposits owned by individuals and businesses.

  **M2**
  M1 plus savings deposits and small time deposits, money market funds, and other deposits.
WHAT IS MONEY?

Figure shows two measures of money.

M1

- Currency and traveler’s checks
- Checkable deposits

<table>
<thead>
<tr>
<th>M1</th>
<th>Amount (billions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Checkable deposits</td>
<td>567</td>
</tr>
<tr>
<td>Currency and traveler’s checks</td>
<td>626</td>
</tr>
<tr>
<td>Total</td>
<td>1,193</td>
</tr>
</tbody>
</table>
What is money?

M2

- M1

Amount (billions of dollars)

<table>
<thead>
<tr>
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<th>Amount</th>
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<tr>
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<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>
WHAT IS MONEY?

M2

• M1

• Savings deposits

• Small time deposits

• Money market funds and other deposits
Are M1 and M2 Really Money?

The test of whether something is money is whether it serves as a means of payment.

M1 passes this test and is money.

Some savings deposits, time deposits, and money market funds do not serve as a means of payment and technically are not money.
WHAT IS MONEY?

Figure shows the changing composition of money in the United States.

During the 1990s, the proportion of money held as currency increased.
The proportion of money held as checkable deposits has decreased.
The monetary system consists of:

- The Federal Reserve
- The banks and other institutions that accept deposits and that provide the services that enable people and businesses to make and receive payments.
Figure 26.4 shows the institutions of the monetary system.

The Federal Reserve regulates and influences the activities of the commercial banks, thrift institutions, and money market funds, whose deposits make up the nation’s money.
Commercial Banks

A **commercial bank** is a firm that is licensed by the Comptroller of the Currency in the U.S. Treasury (or by a state agency) to accept deposits and make loans.

About 8,600 commercial banks operate in the United States today.

Because of mergers, this number is down from 13,000 a few years ago.
Types of Deposits

• Checkable deposits
• Savings deposits
• Time deposits
Profit and Prudence: A Balancing Act

Banks are profit maximizers like other businesses. The goal of a commercial bank is to maximize the long-term wealth of its stockholders. To achieve this goal, a bank must be prudent in the way it uses its depositors’ funds and balance security for the depositors against profit for its stockholders.
Cash Assets

A bank’s *cash assets* consist of its reserves and funds that are due from other banks as payments for checks that are being cleared.

A bank’s *reserves* consist of:

- *currency in the bank’s vaults*
- plus the *balance on its reserve account* at a Federal Reserve Bank.
The Fed requires the banks to hold a minimum percentage of deposits as reserves, called the **required reserve ratio**.

Reserves that exceed those need to meet the required reserve ratio are called **excess reserves**.
Interbank Loans

When banks have **excess reserves**, they can lend them to other banks that are short of reserves in an interbank loans market.

The interbank loans market is called federal funds market and the interest rate in that market is the **federal funds rate**.

The Fed’s policy actions target the federal funds rate.
Securities and Loans

**Securities held by banks** are bonds issued by the U.S. government and by other large, safe, organizations.

A bank earns a moderate interest rate on securities, but it can sell them quickly if it needs cash.

**Loans** are the funds that banks provide to businesses and individuals and include outstanding credit card balances.

Loans earn the highest interest rate but cannot be called in before the agreed date.
Bank Deposits and Assets: The Relative Magnitudes

Checking deposits at commercial banks in the United States, included in M1, are about 15 percent of total deposits.

The other 85 percent of deposits are savings deposits and time deposits, which are part of M2.
Figure 26.5 shows the commercial banks’ deposits and assets at the end of 2002.

The commercial banks had $600 billion in checkable deposits, and $3,900 in other deposits.
The banks’ cash assets were $300 billion, interbank loans were also $300 billion, bonds were $1,600 billion, and loans were $2,300 billion.
Thrift Institutions

A **savings and loan association** (S&L) is a financial institution that accepts checkable deposits and savings deposits and that makes personal, commercial, and home-purchase loans.

A **savings bank** is a financial institution that accepts savings deposits and makes mostly consumer and home-purchase loans.

A **credit union** is a financial institution owned by a social or economic group, such as a firm’s employees, that accepts savings deposits and makes mostly consumer loans.
Thrift Institutions

The total deposits of thrift institutions in January 2001 were $900 billion.

Of these deposits, $100 billion were checkable deposits in M1 and the rest were savings deposits and time deposits in M2.
Money Market Funds

A money market fund is a financial institution that obtains funds by selling shares and uses these funds to buy assets such as U.S. Treasury bills.

Money market fund shares act like bank deposits. Shareholders can write checks on their money market fund accounts.

There are restrictions on most of these accounts.
Relative Size of Monetary Institutions

Commercial banks provide most of the nation’s bank deposits.

Figure 26.6 shows the deposits behind M1 and M2.
Almost one half (49 percent) of M1 consists of currency.

Checking deposits at commercial banks are 41 percent of M1.

Deposits at the thrift institutions are 10 percent of M1.
M1 is 21 percent of M2.

Savings deposits and time deposits at commercial banks are another 44 percent of M2.
deposits at thrift institutions provide 16 percent, and money market funds provide 19 percent of M2.
The Economic Functions of Monetary Institutions

The institutions of the monetary system earn their incomes by performing four functions that people value and are willing to pay for:

- Create Liquidity
- Lower the cost of lending and borrowing
- Pool risks
- Make payments
Create Liquidity

A **liquid asset** is an asset that can be easily, and with certainty, converted into money.

A bank creates liquid assets by borrowing short and lending long.

- Borrowing short means accepting deposits and standing ready to repay them whenever the depositor requests the funds.

- Lending long means making loan commitments for a long term.
THE MONETARY SYSTEM

Lower Costs

Banks lower the cost of lending and borrowing.

- People with funds to lend can easily find the type of bank deposit that matches their plans.
- People who want to borrow can do so by using the facilities offered by banks.

Banks profit because people are willing to make deposits at lower interest rates than the interest rates that the banks can earn on their loans.
Pool Risk

- By lending to a large number of businesses and individuals, a bank lowers the average risk it faces.

- The interest rate on a bank loan is set to ensure that the amount earned on the loans that do get repaid is sufficiently high to pay for ones that don’t get repaid.
THE MONETARY SYSTEM

Make Payments

• The check-clearing system
  – The main mechanism provided by the banks.
  – The banks collect a fee for each check that they clear.

• The credit card payments system
  – The banks collect a fee for every credit card transaction.
The Federal Reserve System is the central bank of the United States. The Federal Reserve Bank is independent of other government branches (executive, judicial and legislative).

A central bank is a public authority that provides banking services to banks and regulates financial institutions and markets.

The Fed conducts the nation’s monetary policy, which means that it adjusts the quantity of money in the economy.
THE FEDERAL RESERVE SYSTEM

The Structure of the Federal Reserve System

The key elements in the structure of the Federal Reserve are:

• The Board of Governors
• The Regional Federal Reserve Banks
• The Federal Open Market Committee
The Board of Governors

- Seven members.
- Appointed by the President of the United States and confirmed by the Senate.
- Each for a 14-year term.
- The President appoints one of the board members as Chairman for a term of four years, which is renewable.
Alan Greenspan, chairman since July, 1987
Twin evils he seeks to combat are 1.) high inflation and 2.) high deficits
The Regional Federal Reserve Banks

- There are 12 Federal Reserve banks.
- One for each of 12 Federal Reserve districts.
- Each Federal Reserve Bank has nine directors, three of whom are appointed by the Board of Governors and six of whom are elected by the commercial banks in the Federal Reserve district.
- The Federal Reserve Bank of New York implements some of the Fed’s most important policy decisions.
Figure 26.7 shows the Federal Reserve districts. The nation is divided into 12 Federal Reserve districts, each with a Federal Reserve Bank.

The Board of Governors of the Federal Reserve System is located in Washington, D.C.
The Federal Open Market Committee

The **Federal Open Market Committee** (FOMC) is the Fed’s main policy-making committee.

The FOMC consists of

- The chairman and other six members of the Board of Governors.
- The president of the Federal Reserve Bank of New York.
- Four presidents of the other regional Federal Reserve banks (on a yearly rotating basis).

The FOMC meets approximately every six weeks.
Figure 26.8 shows the structure of the FOMC. The members are the Chairman of the Board of Governors (currently Alan Greenspan), and the other six members of the board,
The president of the New York Fed, and four of the other regional Fed presidents. Staff economists advise the FOMC.
The FOMC makes decisions about open market operations and the interest rate target.

The Board of Governors—not the FOMC—sets required reserve ratios and the discount rate.
The chairman of the Board of Governors has the largest influence on the Fed’s monetary policy.

The current chairman is Alan Greenspan:

• Appointed by President Reagan in 1987.
• Reappointed for a second term by President Bush in 1992.
• Reappointed for a third term by President Clinton in 1996.
• Reappointed for a fourth term by President Clinton in 2000.
The chairman’s power and influence stem from three sources:

• Controls the agenda and dominates the FOMC meeting

• Has day-to-day contact with staff of economists

• Is the spokesperson for the Fed
The Fed’s Policy Tools

The Fed uses three main policy tools:

- Required reserve ratios
- Discount rate
- Open market operations
Required Reserve Ratios

Banks hold reserves.

These reserves are:

• Currency in the institutions vaults and ATMs
• Deposits held with other banks or with the Fed itself.

Banks and thrifts are required to hold a minimum percentage of deposits as reserves, a required reserve ratio.
Table shows the required reserve ratios in 2002.

<table>
<thead>
<tr>
<th>Type of Deposit</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very large checkable deposits (over $54 million)</td>
<td>3</td>
</tr>
<tr>
<td>Other checkable deposits</td>
<td>10</td>
</tr>
<tr>
<td>All other deposits</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Federal Reserve Board.
Discount Rate

The interest rate at which the Fed stands ready to lend reserves to commercial banks.

A change in the discount rate begins with a proposal to the FOMC by at least one of the 12 Federal Reserve banks.

If the FOMC agrees that a change is required, it proposes the change to Board of Governors for its approval.
Open Market Operations

- The purchase or sale of government securities by the Federal Reserve in the open market.
- The Fed does not transact with the federal government.
The Monetary Base

The *monetary base* is the sum of coins, Federal Reserve bills, and banks’ reserves at the Fed.

The monetary base is so called because it acts like a base that supports the nation’s money.

The larger the monetary base, the greater is the quantity of money that it can support.
Federal reserve bills and banks’ deposits at the Fed are liabilities of the Fed, and the Fed’s assets back these liabilities. Liabilities should not exceed assets.

The Fed’s assets are what it owns, and the Fed’s liabilities are what it owes.

The Fed’s three main assets are:

- Gold and foreign exchange
- U.S. government securities
- Loans to banks
Figure 26.9 shows the monetary base and its composition.

The monetary base is the sum of banks’ deposits at the Fed, coins, and Federal Reserve notes (bills).

Most of the monetary base consists of Federal Reserve notes.
Why Are Dollar Bills a Liability of the Fed?

When bank notes were invented, they gave their owner a claim on the gold reserves of the issuing bank.

When a bank issued a note, it was holding itself liable to convert the note into gold or silver.

Modern bank notes are nonconvertible.
A nonconvertible note is not convertible into any commodity and obtains its value by government fiat—hence the term fiat money.

Federal Reserve bills are backed by the Fed’s holdings of U.S. government securities.
How The Fed’s Policy Tools Work: A Quick First Look

–By increasing the required reserve ratio, the Fed can force the banks to hold a larger quantity of monetary base.

–By decreasing the required reserve ratio, the Fed can permit the banks to hold a smaller quantity of monetary base.
How The Fed’s Policy Tools Work: A Quick First Look

–By raising the discount rate, the Fed can make it more costly for the banks to borrow reserves—borrow monetary base.

–By lowering the discount rate, the Fed can make it less costly for the banks to borrow monetary base.
–By selling securities in the open market, the Fed can decrease the monetary base.

–By buying securities in the open market, the Fed can increase the monetary base.