A financial market is a market in which financial assets are traded. In addition to enabling exchange of previously issued financial assets, financial markets facilitate borrowing and lending by facilitating the sale by newly issued financial assets. Examples of financial markets include the New York Stock Exchange (resale of previously issued stock shares), the U.S. government bond market (resale of previously issued bonds), and the U.S. Treasury bills auction (sales of newly issued T-bills). A financial institution is an institution whose primary source of profits is through financial asset transactions. Examples of such financial institutions include discount brokers (e.g., Charles Schwab and Associates), banks, insurance companies, and complex multi-function financial institutions such as CitiBank.

Direct Finance: To sell securities directly to lenders and financial markets
Indirect Finance: The process whereby financial intermediaries link lender-savers and borrower-spenders.

I. Introduction to Financial Markets
First partition of financial markets

1a. Debt Markets
1b. Equity Markets (Common Stocks)

Second partition
2a. Money Market - Short-Term (maturity < 1 year)
2b. Capital Market - Long-Term (maturity > 1 year)

Note: Debt market instruments belong to Money or Capital market, depending on their maturity. Equity markets is a part of capital market (maturity of shares is infinite).

Third partition
3a. Primary Market: New security issues sold to initial buyers (investment banks underwrite securities)
3b. Secondary Market: Securities previously issued are bought and sold (brokers and dealers)

Note: After exchange takes place on secondary market, the corporation gets no additional funds. So why are secondary markets important?

1. Make instruments more liquid (easier to get cash for them)
   => more desirable
   => easier to sell them in primary market
   => easier to obtain funds

2. They determine the price that will be paid in the primary market
   => impact on initial capital raised

Money Market Instruments (2005 & 2013, Trillion USD)

0.92 T-bills are issued by in 3-, 6- and 12-month maturities to finance government debt. Initially sold at discount.
1.59

1.74 CDs are debt instruments sold by banks to depositors that pays an annual interest. In 1961 Citibank introduced the first “negotiable” (tradable on secondary market) CD to make it more liquid.
1.76

1.54 Commercial Papers are short-term debt instruments issued by large banks and corporations. It was introduced in late 60’s and become popular together with a rise of mutual fund investors.
0.98

0.004 Banker’s acceptances are an instrument of trade (came from international trade). It is a promise of a payment issued by a company and “accepted” (guaranteed) by a bank.
0.049

0.52 RePos (Repurchase Agreements):
0.49 A corporation agrees to buy Treasury bills now and to sell them later back to a commercial bank.
=> Bank gets a short term loan.

0.08 Federal (Fed) Funds = Overnight loans between banks of their deposits at the Fed. Reason? Banks are required to keep certain amounts of deposits in Fed
1.42 Interest rate is called “FEDERAL FUNDS RATE”

0.44 EURO DOLLARS = U.S. Dollars deposited in foreign banks. These are often borrowed by U.S. banks and used for loans in the U.S.
II. Six Functions of Financial Markets

- **Borrowing and Lending**: Financial markets permit the transfer of funds (purchasing power) from one agent to another for either investment or consumption purposes.
- **Price Determination**: Financial markets provide vehicles by which prices are set both for newly issued financial assets and for the existing stock of financial assets.
- **Information Aggregation and Coordination**: Financial markets act as collectors and aggregators of information about financial asset values and the flow of funds from lenders to borrowers.
- **Risk Sharing**: Financial markets allow a transfer of risk from those who undertake investments to those who provide funds for those investments.
- **Liquidity**: Financial markets provide the holders of financial assets with a chance to resell or liquidate these assets.
- **Efficiency**: Financial markets reduce transaction costs and information costs.

In attempting to characterize the way financial markets operate, one must consider both the various types of financial institutions that participate in such markets and the various ways in which these markets are structured.

---

### III. Financial Market Institutions

By definition, financial institutions are institutions that participate in financial markets, i.e., in the creation and/or exchange of financial assets. At present in the United States, financial institutions can be roughly classified into the following four categories: "brokers," "dealers," "investment bankers," and "financial intermediaries." These four types of financial institutions are simplified idealized classifications, and many actual financial institutions in the fast-changing financial landscape today engage in activities that overlap two or more of these classifications or even to some extent fall outside these classifications.

1. **Brokers**

A broker is a commissioned agent of a buyer (or seller) who facilitates trade by locating a seller (or buyer) to complete the desired transaction. A broker does not take a position in the assets he or she trades -- that is, the broker does not maintain inventories in these assets. The profits of brokers are determined by the commissions they charge to the users of their services (either the buyers, the sellers, or both). Examples of brokers include real estate brokers and stock brokers.

Diagrammatic Illustration of a Stock Broker:

```
Payment ------------- Stock
Stock Buyer | Stock Broker | Stock Seller
Stock Shares --------------- (Passed Thru) Stock Shares

Diagrammatic Illustration of a Bond Dealer:

```

2. **Dealers**

Like brokers, dealers facilitate trade by matching buyers with sellers of assets; they do not engage in asset transformation. Unlike brokers, however, a dealer can and does "take positions" (i.e., maintain inventories) in the assets he or she trades that permit the dealer to sell out of inventory rather than always having to locate sellers to match every offer to buy. Also, unlike brokers, dealers do not receive sales commissions. Rather, dealers make profits by buying assets at relatively low prices and reselling them at relatively high prices (buy low - sell high). The price at which a dealer offers to sell an asset (the asked price) minus the price at which a dealer offers to buy an asset (the bid price) is called the bid-ask spread and represents the dealer's profit margin on the asset exchange. Real-world examples of dealers include car dealers, dealers in U.S. government bonds, and Nasdaq stock dealers.

Diagrammatic Illustration of a Bond Dealer:
3. Investment Banks

An investment bank assists in the initial sale of newly issued securities (i.e., in IPOs = Initial Public Offerings) by engaging in a number of different activities:

- Advice: Advising corporations on whether they should issue bonds or stock, and, for bond issues, on the particular types of payment schedules these securities should offer;
- Underwriting: Guaranteeing corporations a price on the securities they offer, either individually or by having several different investment banks form a syndicate to underwrite the issue jointly;
- Sales Assistance: Assisting in the sale of these securities to the public.


The costs of collecting and aggregating information determine, to a large extent, the types of financial market structures that emerge:

**Partition of secondary financial markets**

4a Organized Exchanges

Organizations such as the New York Stock Exchange permit buyers and sellers (both represented by brokers) to trade with each other in a centralized location, like an auction. (However, securities on the floor of the exchange are often traded with the help of specialist traders who combine broker and dealer functions. The specialists broker trades but also stand ready to buy and sell stocks from personal inventories if buy and sell orders do not match up.)

4b Over-the-counter (OTC) markets

Exchange is conducted through dealers. An over-the-counter market has no centralized mechanism or facility for trading. Instead, the market is a public market consisting of a number of dealers spread across a region, a country, or indeed the world, who make the market in some type of asset. That is, the dealers themselves post bid and asked prices for this asset and then stand ready to buy or sell units of this asset with anyone who chooses to trade at these posted prices. The dealers provide customers more flexibility in trading than brokers, because dealers can offset imbalances in the demand and supply of assets by trading out of their own accounts.

Many well-known common stocks are traded over-the-counter in the United States through Nasdaq (National Association of Securities Dealers' automated quotation system).

4. Commercial Banks and Other Financial Intermediaries

Unlike brokers, dealers, and investment banks, financial intermediaries are financial institutions that engage in financial asset transformation. That is, financial intermediaries purchase one kind of financial asset from borrowers -- generally some kind of long-term loan contract whose terms are adapted to the specific circumstances of the borrower (e.g., a mortgage) -- and sell a different kind of financial asset to savers, generally some kind of relatively liquid claim against the financial intermediary (e.g., a deposit account).

In addition, unlike brokers and dealers, financial intermediaries typically hold financial assets as part of an investment portfolio rather than as an inventory for resale.

On top of making profits on their investment portfolios, financial intermediaries make profits by charging relatively high interest rates to borrowers and paying relatively low interest rates to savers.

**Diagrammatic Example of a Financial Intermediary (Commercial Bank):**

```
          Lending by B          Borrowing by B
funds
| F | <----------> | B | <----------> | H |
loan contracts
| F | <----------> | B | <----------> | H |
deposited funds

Loan contracts issued by F to B are liabilities of F and assets of B
Deposit accounts issued by B to H are liabilities of B and assets of H

NOTE: F=Firms, B=Commercial Bank, and H=Households
```

**Types of financial intermediaries include:**

<table>
<thead>
<tr>
<th>Type of Intermediary</th>
<th>Value of Assets ($ billions, end of year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depository institutions (banks)</td>
<td></td>
</tr>
<tr>
<td>Commercial banks</td>
<td>1,461</td>
</tr>
<tr>
<td>Savings and loan associations</td>
<td>792</td>
</tr>
<tr>
<td>and mutual savings banks</td>
<td></td>
</tr>
<tr>
<td>Credit unions</td>
<td>67</td>
</tr>
<tr>
<td>Contractual savings institutions</td>
<td></td>
</tr>
<tr>
<td>Life insurance companies</td>
<td>464</td>
</tr>
<tr>
<td>Fire and casualty insurance companies</td>
<td>182</td>
</tr>
<tr>
<td>Pension funds (private)</td>
<td>504</td>
</tr>
<tr>
<td>State and local government retirement funds</td>
<td>107</td>
</tr>
<tr>
<td>Investment intermediaries</td>
<td></td>
</tr>
<tr>
<td>Finance companies</td>
<td>205</td>
</tr>
<tr>
<td>Mutual funds</td>
<td>70</td>
</tr>
<tr>
<td>Money market mutual funds</td>
<td>76</td>
</tr>
</tbody>
</table>

IV. Benefits of Financial Intermediaries Relative to Brokers and Dealers

What benefits are provided by financial intermediaries that cannot be provided as efficiently, or even more efficiently, by brokers or dealers? The conventional answer is that financial intermediaries provide six distinct types of services to their customers. These services, briefly summarized below, are more carefully examined in subsequent Mishkin chapters.

1. **Reduction of transactions and information costs**
   Intermediaries are able to reduce the *transactions costs* entailed during the process of matching borrowers with lenders. Intermediaries are also able to reduce the transactions costs associated with the writing and communicating of contract terms for borrowers and lenders, particularly in cases where the contract terms are highly specialized to the situation at hand.

   In addition, *information costs* incurred as a result of monitoring and enforcement of contract terms are reduced by centralizing these functions in one agent with extensive experience. This is particularly important in cases in which would-be lenders are relatively unsophisticated compared to would-be borrowers. As long as the intermediary’s own return is tied to the success of these monitoring and enforcement functions, it has an incentive to perform these functions in a reliable manner.

   The transactions and information costs incurred by a financial intermediary are passed on to the pool of agents who lend to the intermediary in the form of lower interest rates and to borrowers in the form of higher interest rates. If the pools of agents lending funds to the intermediary and borrowing funds from the intermediary are large, these costs will be spread across large numbers of agents and hence will have only a small impact on each individual agent.

   Economist’s Jargon: *Informational asymmetries* produce information costs: screening borrowers, rating them, monitoring contracts, enforcing them, etc.

   **Adverse Selection:** Before transaction occurs
   Note that companies (potential borrowers) most likely to produce adverse outcomes are also the ones most likely to seek loans.

   **Moral Hazard:** After transaction occurs
   Hazard that borrower has incentives to engage in undesirable (immoral) activities making it more likely that won’t pay loan back.

2. **Risk reduction through portfolio diversification**
   Intermediaries find it less costly than individuals to construct large well diversified asset portfolios—e.g., stock funds, bond funds, money market funds, etc. They can then sell small portions of these portfolios to individuals. Note that, unlike dealers, intermediaries hold these large portfolios to increase the efficiency and profit potential of their asset holdings. The asset holdings are not simply temporary inventories held as buffer stocks against unforeseen fluctuations in demand.

3. **Maturity intermediation**
   Financial intermediaries can purchase financial assets with long maturities ("lend long") while at the same time selling financial assets (acquiring liabilities) with short maturities ("borrow short"). Thus, illiquid long-maturity assets (e.g., mortgages) are transformed into a more liquid form (e.g., deposit accounts); and the buyers of the more liquid assets are charged a premium for this liquidity in the form of a lower rate of return. The gap between the average maturity of an intermediary’s assets and the average maturity of its liabilities is referred to as the maturity gap of the intermediary.

   Everything else equal, the larger the *maturity gap*, the more the intermediary bears the (nondiversifiable) risk of fluctuations in short-term interest rates. For example, suppose the intermediary is a savings and loan association which lends long in the form of mortgages and borrows short in the form of savings deposits paying a competitive rate of return, i.e., the short-term interest rate currently available in financial markets. If there is an increase in this market short-term interest rate, the intermediary must either match the rise in order to retain its customers, resulting in a decreased and possibly negative profit margin, or risk having a substantial portion of its customers close out their accounts and take their money elsewhere.

---

**TABLE 3** Primary Assets and Liabilities of Financial Intermediaries

<table>
<thead>
<tr>
<th>Type of Intermediary</th>
<th>Primary Liabilities (Sources of Funds)</th>
<th>Primary Assets (Uses of Funds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depository Institutions (banks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial banks</td>
<td>Deposits</td>
<td>Business and consumer loans, mortgages, U.S. government securities and municipal bonds</td>
</tr>
<tr>
<td>Savings and loan associations</td>
<td>Deposits</td>
<td>Mortgages</td>
</tr>
<tr>
<td>Mutual savings banks</td>
<td>Deposits</td>
<td>Mortgages</td>
</tr>
<tr>
<td>Credit unions</td>
<td>Deposits</td>
<td>Consumer loans</td>
</tr>
<tr>
<td>Contractual savings institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life insurance companies</td>
<td>Premiums from policies</td>
<td>Corporate bonds and mortgages</td>
</tr>
<tr>
<td>Fire and casualty insurance companies</td>
<td>Premiums from policies</td>
<td>Municipal bonds, corporate bonds and stock, U.S. government securities</td>
</tr>
<tr>
<td>Pension funds, government</td>
<td>Employer and employee contributions</td>
<td>Corporate bonds and stock</td>
</tr>
<tr>
<td>retirement funds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment Intermediaries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance companies</td>
<td>Commercial paper, stocks, bonds</td>
<td>Consumer and business loans</td>
</tr>
<tr>
<td>Mutual funds</td>
<td>Shares</td>
<td>Stocks, bonds</td>
</tr>
<tr>
<td>Money market mutual funds</td>
<td>Shares</td>
<td>Money market instruments</td>
</tr>
</tbody>
</table>

---

?? True/False ?? (B3) Since people usually keep good cars and get rid of wracks, ‘average car’ on the road is better than the average car traded. This is an example of adverse selection on the market for used cars.
4. Information production

Intermediaries expend considerable resources investigating the anticipated profitability of the projects they finance. Individual lenders in general have neither the resources nor the incentive to carry out such extensive investigations. Moreover, the information gathered by the intermediary about an investment project is generally not made public; it is used to construct investment opportunities (mutual funds, etc.) for those who supply the intermediary with loanable funds. This is to the advantage of both the lenders (who wish to take advantage of “inside information” about investment opportunities) and the borrowers (who wish to keep trade secrets secret).

In this way, the production of information is tied in with the management of customer accounts. The principal insurance which a supplier of funds has that an intermediary will perform reliably is the stake which the owners and/or managers of the intermediary themselves have in the investments they choose for their customers.

Supplying information about investments (investment advising) is nevertheless conceptually distinct from the supplying of investment opportunities. This is illustrated by the recent surge in the number of discount brokers, who offer investment funds but no investment advice, in contrast to the more traditional full-service brokers who offer both investment funds and investment advice, but at substantially higher fees.

4. Management of payments

Another specialized service offered by some (but by no means all) financial intermediaries is bookkeeping. The intermediary keeps track of receipts and disbursements for their customers, paying particular attention to tax considerations: which disbursements are reportable to the IRS; which are to be treated as capital gains, as dividends, or as interest payments; and so forth. Some intermediaries (e.g., commercial banks, large brokerage firms such as Merrill Lynch, etc.) also provide checkable deposit accounts and/or credit cards with bookkeeping services to keep track of account and/or card transactions.

5. Insurance

Many types of financial intermediaries supply insurance to their customers against losses of principal. Moreover, some intermediaries specialize in insurance: that is, they construct and sell insurance policies (contingent claims against the intermediary) funded by premiums collected from the holders of the policies. Premiums in excess of insurance claim payouts are typically invested. Consequently, insurance companies act as a lender just as other types of financial intermediaries do.

V. Four Main Reasons for Regulation

1. Increase information to investors
   Decreases adverse selection and moral hazard problems
   (i.e. SEC forces corporations to disclose information)
2. Ensuring the soundness of financial intermediaries
   In order to prevent financial panics, Chartering, reporting requirements, restrictions on assets and activities, deposit insurance, and anti-competitive measures are used.
3. Improving monetary control
4. Extortion

### Example: Regulation of the commercial banks

**Restriction on entry**
- State banks: State agencies
- National banks: Office of the Comptroller of the Currency

**Disclosure**

**Restriction on assets and activities**
- Glass-Steagall Act (1933): separated commercial and investment banking

**Restriction on Interest Rate**
- zero interest checking (*1933), (Regulation Q of the Federal Reserve System)

**Control of monetary policy**
- Reserve requirements

**Limits on competition**
- State banks – only in their state, often only in one location
- McFadden Act (1927): restricted branching of national banks

**Deposit Insurance**
- Federal Deposit Insurance Corporation (FDIC, 1934)
- Savings Association Insurance Fund (SAIF, now part of FDIC)
- Credit unions – National Credit Union Share Insurance Fund (NCUSIF)

---

?? True/False ??  
(C1) Fed (=Federal Reserve System) regulates credit unions.  
(C2) Limits on competition increase competition inside financial system.
SAMPLE QUIZ 1

1) Financial markets have the basic function of
A) getting people with funds to lend together with people who want to borrow funds.
B) assuring that the swings in the business cycle are less pronounced.
C) assuring that governments need never resort to printing money.

2) Which of the following can be described as involving direct finance?
A) A corporation takes out a loan from a bank.
B) People buy shares in a mutual fund.
C) A corporation buys commercial paper issued by another corporation.
D) An insurance company buys shares of common stock in the over-the-counter markets.

3) Which of the following are short-term financial instruments?
A) A negotiable certificate of deposit
B) A banker's acceptance
C) A six-month loan
D) A U.S. Treasury bill
E) All of the above

4) An important financial institution that assists in the initial sale of securities in the primary market is the
A) investment bank.
B) commercial bank.
C) stock exchange.
D) brokerage house.

5) The assets of commercial banks include
A) mortgages.
B) consumer and business loans.
C) U.S. government securities.
D) all of the left or above.

6) The problem created by asymmetric information before the transaction occurs is called _____, while the problem created after the transaction occurs is called _____.
A) adverse selection; moral hazard
B) moral hazard; adverse selection
C) costly state verification; free-riding
D) free-riding; costly state verification

7) The Federal Deposit Insurance Corporation (FDIC) regulates
A) savings and loan associations.
B) insurance companies.
C) credit unions.
D) all of the above.

8) Which of the following statements about financial markets and securities are true?
A) Most common stocks are traded over-the-counter, although the largest corporations usually have their shares traded at organized stock exchanges such as the New York Stock Exchange.
B) As a corporation gets a share of the broker's commission, a corporation acquires new funds whenever its securities are sold.
C) Because of their short terms to maturity, the prices of money market instruments tend not to fluctuate wildly.
D) Only (a) and (c) of the above are true.

9) The primary assets of mutual savings banks and savings and loan association are
A) Stocks
B) Bonds
C) Mortgages
D) Corporate loans
E) Corporate savings

10) Choose a policy that is NOT a part of government regulation of the financial system
A) restriction on entry
B) Restriction on assets and activities
C) limits on profits
D) Limits on competition

Answers: 1A; 2C; 3E; 4A; 5D; 6A; 7A; 8D; 9C; 10C
I. Evolution of Payment Systems

Tracing the historical evolution of payment systems in various economies is a fascinating and complex task. Although highly simplified, the following three-stage process captures the general way in which this evolution has occurred in many parts of the world.

1. Autarky:
Each family or tribal group produces all of what they consume, with the outputs of production being shared in accordance with some kind of group distribution rule determining who gets what and in what amount. No trade takes place and there is no use of money.

2. Barter Payment System:
Within family or tribal groups, and possibly between such groups, people trade goods and services for other goods and services. There is no use of money.

Under a barter payment system, a "double coincidence of wants" is needed before any trade can take place. That is, two individuals seeking to trade must have exactly the goods or services that each other wants. The requirement of having a double coincidence of wants before exchange can take place discourages specialization and division of labor; for the smaller the number of goods and services one produces for sale, the fewer types of goods and services one can expect to be able to trade for.

Multiple Prices for Each Good or Service: Under a barter payment system, many different prices must be maintained for each good and service, making informed decisions about what to buy (and from whom to buy it) extremely difficult. Specifically, an exchange ratio ("goods price") is needed for every distinct pair of items to be traded.

For example, given two items (say apples and beer), one needs one goods price (apples per beer or beer per apples, either one will do). For three items (say apples, beer, and cars), one needs three goods prices (e.g., apples per beer, apples per car, and beer per cars). But for four items one needs six prices, for five items one needs ten prices, and so it goes. As the number of items keeps increasing, the number of needed goods prices increases dramatically.

More precisely, given a barter economy with n goods, the number of needed goods prices is n(n-1)/2, which is the number of ways that n items can be selected 2 at a time without consideration of order. An equivalent formula for calculating the needed number of goods prices in a barter economy with n goods is the sum of numbers between 1 and n-1, inclusive: i.e., (n-1) + (n-2) + ... + 1. Can you explain why?

The above two problems result in high "transaction costs," that is, large amounts of resources (time, effort, shoe leather,...) being spent on trying to exchange goods and services. A barter payment system has several problems that make it extremely inefficient relative to a monetary payment system if a large number of goods and services are produced in an economy:

3. Monetary Payment System:
People trade goods and services in return for money.

As previously discussed, the use of money dramatically cuts down on the transactions costs arising from barter, so it is not surprising that barter payment systems have tended to evolve into monetary payment systems.

II. Evolution of Money

1a. Commodities
(cattle, shells, butter, rats...),

1b. Precious metals
(gold and silver)

Croesus (595 BC – c. 546 BC)

2. Paper currency (=>Fiat Money)

3. Deposits (Checks)

4. Electronic means of payment:
Fedwire, SWIFT, ACH

5. Electronic money: Debit cards, Stored-value cards, Electronic cash

III. How Do We Define and Measure Money?

Anything that is generally accepted in payment for goods and services.

1. Theoretical Approach

Use economic theory to decide assets to include (See Table 1)

Different Monetary Aggregates: M1,M2, M3 …

M1 = Currency (in circulation) + (Current) Deposits
M2 = M1 + ….
M3 = M2 + ….

Size of these aggregates depends on Monetary Base:

MB = Currency (in circulation) + (Bank’s) Reserves

2. Empirical Approach

Decide which measure of money works best in prediction:

Money equals a weighted aggregates depending on degree of “moneyness,” some fraction of asset included in money

E.g.: money = M1 + .60*(money market funds) + .40*(savings deposits)
IV. Functions of Money

Unit of Account:
A unit in terms of which a single price for every good and service can be quoted. In the US, the price of an apple is given as dollars per apple, the price of a gallon of milk is given as dollars per gallon of milk, etc. That is, each good or service on sale at an outlet is generally offered at a single quoted "dollar price" -- that is, a price quoted in terms of dollars.

In reality, however, any particular good or service (e.g., apples) has a huge array of different prices that could be quoted for it, one for each other good or service in the economy (e.g., pounds of bread per apple, cans of beer per apple, hours of doctor visits per apple, etc.) Without a money unit to provide a single accepted unit of account, sellers would have to quote prices of items in terms of whichever goods or services they were willing to accept in return at the time the items were purchased. That is, as clarified further above, the payment system would be a "barter" payment system.

Medium of Exchange:
An accepted means of payment for trade of goods and services.

As noted above, the existence of a money unit permits each item for sale to have a single price quoted for it in terms of the money unit. But this is not enough to ensure the item will actually be sold to buyers for money units. Sellers have to be willing to accept the money units from buyers in return for giving up the item, which requires a trust on the part of sellers that others will in turn be willing to accept these money units from them at a later time in return for goods and services. That is, the money units have to act as a medium of exchange in the economy before one can conclude that they indeed constitute money in the economy.

Store of Value:
A repository of purchasing power for future use.

Money can be held for future use, allowing for the ability to save (store value) over time. All assets act as stores of value to some extent, but money by definition is the most liquid, i.e., the most easily converted into a medium of exchange, since by definition it already is a medium of exchange!

On the other hand, money is by no means a risk-free store of value. The real purchasing power of money depends on the inflation rate, that is, on the rate at which the general price level is changing. If the inflation rate is positive (prices are increasing), any money held loses purchasing value over time. If the inflation rate is negative (prices are decreasing), any money held gains purchasing power over time.

To the extent that the inflation rate is unpredictable, inflation reduces the ability of money to act as a reliable store of value and as a method of deferred payment in borrowing-lending transactions. A positive inflation rate is bad for lenders and good for borrowers since the dollars lent out are worth more than the dollars later paid back. Conversely, a negative inflation rate is good for lenders and bad for borrowers.

In extreme cases in which the inflation rate exceeds 50 percent per month -- a situation referred to as hyperinflation -- the entire monetary system generally breaks down and is replaced by barter. This has devastating effects on an economy.

Mishkin notes that Post-WWI Germany suffered a hyperinflation in which the inflation rate at times exceeded 1000 percent per month. More recently, various Latin American economies experienced hyperinflations during the 1980s. For example, in the first half of 1985 Bolivia’s inflation rate was running at 20,000 percent and rising, January 2009 official Zimbabwe’s inflation was 230 million.

<table>
<thead>
<tr>
<th>TABLE 1 Measures of the Monetary Aggregates &amp; MONETARY BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary BASE = Currency (both in and out of circulation) and Reserves held in Reserve Banks</td>
</tr>
<tr>
<td>$M_1$ = Currency in circulation</td>
</tr>
<tr>
<td>$+$ Traveler’s checks</td>
</tr>
<tr>
<td>$+$ Demand deposits</td>
</tr>
<tr>
<td>$+$ Other checkable deposits</td>
</tr>
<tr>
<td>Total $M_1$</td>
</tr>
<tr>
<td>$M_2$ = $M_1$</td>
</tr>
<tr>
<td>$+$ Small-denomination time deposits</td>
</tr>
<tr>
<td>$+$ Savings deposits and money market deposit accounts</td>
</tr>
<tr>
<td>$+$ Money market mutual fund shares (noninstitutional)</td>
</tr>
<tr>
<td>Total $M_2$</td>
</tr>
<tr>
<td>$M_3$ = $M_2$</td>
</tr>
<tr>
<td>$+$ Large-denomination time deposits</td>
</tr>
<tr>
<td>$+$ Money market mutual fund shares (institutional)</td>
</tr>
<tr>
<td>$+$ Term repurchase agreements</td>
</tr>
<tr>
<td>$+$ Term Eurodollars</td>
</tr>
<tr>
<td>Total $M_3$</td>
</tr>
<tr>
<td>$L = L_1$</td>
</tr>
<tr>
<td>$+$ Short-term Treasury securities</td>
</tr>
<tr>
<td>$+$ Commercial paper</td>
</tr>
<tr>
<td>$+$ Savings bonds</td>
</tr>
<tr>
<td>$+$ Banker’s acceptances</td>
</tr>
<tr>
<td>Total $L$</td>
</tr>
</tbody>
</table>


V. Terminology

Money must be distinguished from “wealth” and “income”. Wealth is the market value of total collection of assets owned by specific agent at a given point of time. Money (holdings) is only one part of wealth. Income is a flow of value accrued over some specific time period.

Note: Money and wealth are stock variables, income is a flow variable.