

Master of Financial Technology

Finance Concepts





Financial Markets

Chapter 2



Chapter 02

Intended Learning Outcomes

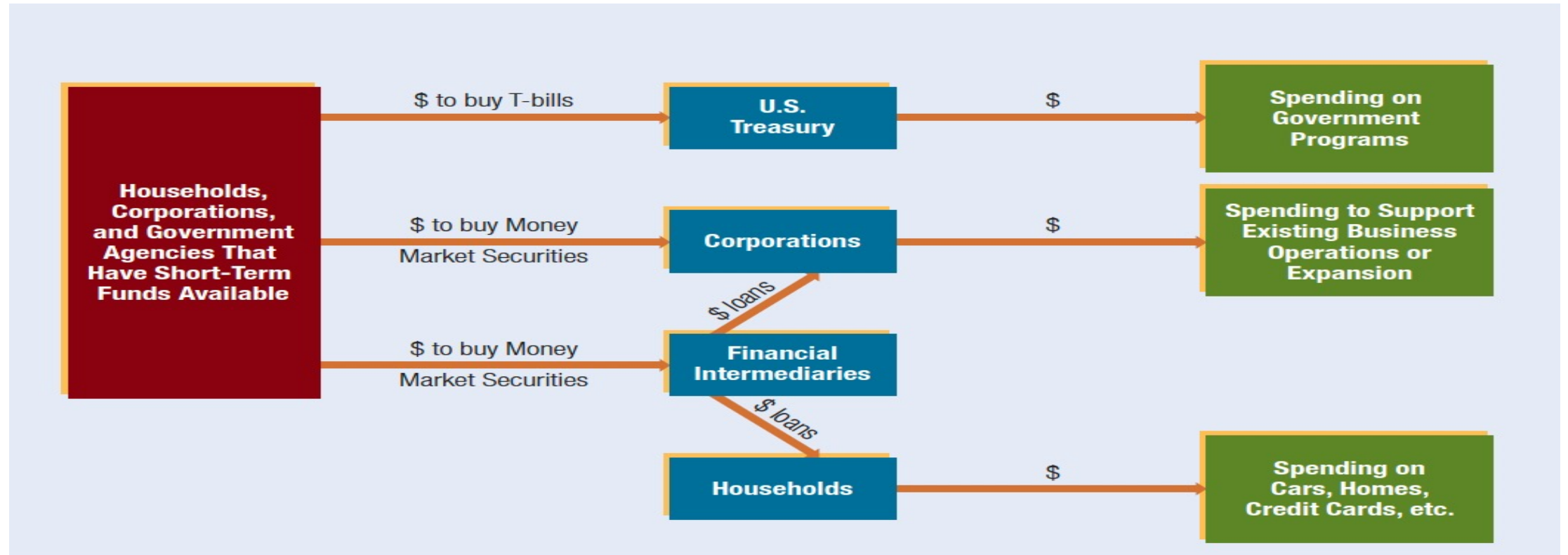
1. Describe the features of the most popular money market securities,
2. Explain how money markets are used by institutional investors,
3. Describe the different types of bonds and their characteristics,
4. Describe the private equity market,
5. Describe the process of initial public offerings,

1- Money Market Securities

Money Market Securities

- Money market securities are debt securities with a **maturity of one year or less**.
- They are issued in the primary market by the Treasury, corporations, and financial intermediaries that wish to obtain **short-term financing**.
 - **Treasury** issues money market securities (Treasury bills) and uses the proceeds to finance the budget deficit.
 - **Corporations** issue money market securities and use the proceeds to support their existing operations or to expand their operations.
 - **Financial institutions** issue money market securities and bundle the proceeds to make loans to households or corporations.
- Money market securities are commonly purchased by households, corporations (including financial institutions), and government agencies that have funds available for a short-term period.
- Money market securities have a short-term maturity and can typically be sold in the secondary market, they provide liquidity to investors.
- Most firms and financial institutions maintain some holdings of money market securities for this reason.

How Money Markets Facilitate the Flow of Funds



Money Market Securities

- **The more popular money market securities are:**

- Treasury bills (T-bills)
- Commercial paper
- Negotiable certificates of deposit
- Repurchase agreements
- Federal funds
- Banker's acceptances



Review Questions

1. Securities with maturities of one year or less are classified as

a.	capital market instruments.
b.	money market instruments.
c.	preferred stock.
d.	none of the above

2. Which of the following is not a money market security?

a.	Treasury bill
b.	negotiable certificate of deposit
c.	common stock
d.	federal funds

Answers

1. B
2. C

1- Treasury Bills

Treasury Bills

- When the government needs to borrow funds, the Treasury frequently issues short-term securities known as Treasury bills.
- The Treasury issues T-bills with 4-week, 13-week, and 26-week maturities on a weekly basis.
- It periodically issues T-bills with terms shorter than four weeks, which are called **cash management bills**.
- It also issues T-bills with a one-year maturity on a monthly basis.
- Treasury bills were formerly issued in paper form but are now maintained electronically.



T-bills Features

Credit Risk

- Treasury bills are attractive to investors because they are **backed by the government** and are therefore virtually free of credit (default) risk. This is a very desirable feature, because investors do not have to use their time to assess the risk of the issuer, as they do with other issuers of debt securities.

Liquidity

- Another attractive feature of T-bills is their liquidity, which is due to their **short maturity** and **strong secondary market**.
- At any given time, many institutional investors are participating in the secondary market by purchasing or selling existing T-bills. Thus, investors can easily obtain cash by selling their T-bills in the secondary market.
- **Government securities dealers serve as intermediaries** in the secondary market by buying existing T-bills from investors who want to sell them or selling them to investors who want to buy them. These dealers' profit by purchasing the bills at a slightly lower price than the price at which they sell them.

2- Commercial Paper

Commercial Paper

- **Commercial paper** is a short-term debt instrument issued only by well-known, creditworthy firms that is typically unsecured.
- It is normally issued to provide liquidity or to finance a firm's investment in inventory and accounts receivable.
- **The issuance of commercial paper is an alternative to short-term bank loans.**



commercial paper

Commercial Paper

- Some large firms prefer to issue commercial paper rather than borrow from a bank because it is usually a **cheaper source of funds**.
- Nevertheless, even the large creditworthy firms that are able to issue commercial paper normally obtain some short-term loans from commercial banks in order to maintain a business relationship with them.
- Financial institutions such as finance companies and bank holding companies are major issuers of commercial paper.

Credit Risk

- Credit Risk Because commercial paper is issued by corporations that are susceptible to business failure, commercial paper is subject to credit risk.
- The risk of default is affected by the issuer's financial condition and cash flow.
- Investors can attempt to assess the probability that commercial paper will default by monitoring the issuer's financial condition.
- The focus is on the issuer's ability to repay its debt over the short term because the payments must be completed within a short-term period.
- Although issuers of commercial paper are subject to possible default, historically the percentage of issues that have defaulted is very low, as most issuers of commercial paper are very strong financially.
- In addition, the short time period of the credit reduces the chance that an issuer will suffer financial problems before repaying the funds borrowed.
- However, during the credit crisis in 2008, Lehman Brothers (a large securities firm) failed.



Credit Risk

Exhibit 6.2 Possible Ratings Assigned to Commercial Paper

	MOODY'S	STANDARD & POOR'S	FITCH
Highest	P1	A1	F1
High	P2	A2	F2
Medium	P3	A3	F3
Low	NP	B or C	F4
Default	NP	D	F5

2. Bonds Markets



Background on Bonds

- Bonds are **long-term debt securities** that are issued by government agencies or corporations.
- The issuer of a bond is obligated to pay interest (or coupon) payments periodically (such as annually or semiannually) and the par value (principal) at maturity.
- An issuer must be able to show that its future cash flows will be sufficient to enable it to make its coupon and principal payments to bondholders.
- Investors will consider buying bonds for which the repayment is questionable only if the expected return from investing in the bonds is sufficient to compensate for the risk.

Background on Bonds

- Bonds are often classified according to the **type of issuer**.
 1. Treasury bonds are issued by the U.S. Treasury,
 2. Federal agency bonds are issued by federal agencies,
 3. Municipal bonds are issued by state and local governments, and
 4. Corporate bonds are issued by corporations.
- Most bonds have **maturities** of between 10 and 30 years.
- Bonds are **classified by the ownership structure** as either bearer bonds or registered bonds.
 1. **Bearer bonds** require the owner to clip coupons attached to the bonds and send them to the issuer to receive coupon payments.
 2. **Registered bonds** require the issuer to maintain records of who owns the bond and automatically send coupon payments to the owners.
- Bonds are issued in the **primary market** through a telecommunications network.

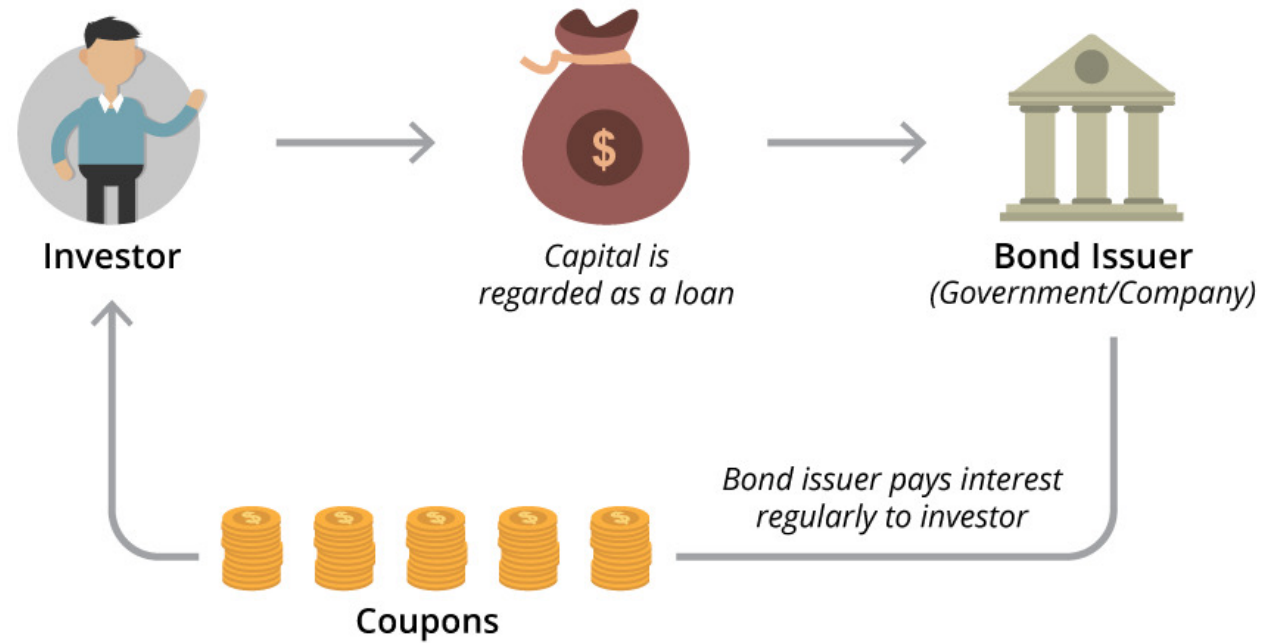
Institutional Participation in Bond Markets

- All types of financial institutions participate in the bond markets.
- Commercial banks, savings institutions, and finance companies commonly issue bonds in order to raise capital to support their operations.
- Commercial banks, savings institutions, bond mutual funds, insurance companies, and pension funds are investors in the bond market.
- Financial institutions dominate the bond market in that they purchase a large proportion of bonds issued.

FINANCIAL INSTITUTION	PARTICIPATION IN BOND MARKETS
Commercial banks and savings and loan associations (S&Ls)	• Purchase bonds for their asset portfolio. • Sometimes place municipal bonds for municipalities. • Sometimes issue bonds as a source of secondary capital.
Finance companies	• Commonly issue bonds as a source of long-term funds.
Mutual funds	• Use funds received from the sale of shares to purchase bonds. Some bond mutual funds specialize in particular types of bonds, while others invest in all types.
Brokerage firms	• Facilitate bond trading by matching up buyers and sellers of bonds in the secondary market.
Investment banking firms	• Place newly issued bonds for governments and corporations. They may place the bonds and assume the risk of market price uncertainty or place the bonds on a best-efforts basis in which they do not guarantee a price for the issuer.
Insurance companies	• Purchase bonds for their asset portfolio.
Pension funds	• Purchase bonds for their asset portfolio.

Bond Yields

- The yield on a bond depends on whether it is viewed from the perspective of the issuer of the bond, who is obligated to make payments on the bond until maturity, or from the perspective of the investors who purchase the bond.



Yield from the Issuer's Perspective

- The **issuer's cost of financing** with bonds is commonly measured by the **yield to maturity**, which reflects the annualized yield that is paid by the issuer over the life of the bond.
- The yield to maturity is the annualized discount rate that equates the future coupon and principal payments to the initial proceeds received from the bond offering.

Yield from the Investor's Perspective

- An investor who invests in a bond when it is issued and holds it until maturity will earn the yield to maturity. Yet many investors do not hold a bond to maturity and therefore focus on their holding period return, or the return from their investment over a particular holding period.
- **If they hold the bond for a very short time period** (such as less than one year), they may estimate their holding period return as the sum of the coupon payments plus the difference between the selling price and the purchase price of the bond, as a percentage of the purchase price.
- **For relatively long holding periods**, a better approximation of the holding period yield is the annualized discount rate that equates the payments received to the initial investment.
- Since the selling price to be received by investors is uncertain if they do not hold the bond to maturity, their holding period yield is uncertain at the time they purchase the bond.
- **Consequently, an investment in bonds is subject to the risk that the holding period return will be less than expected.**

Questions

1. _____ require the owner to clip coupons attached to the bonds and send them to the issuer to receive coupon payments.

a.	Bearer
b.	Registered
c.	Treasury
d.	Corporate

2. The yield to maturity is the annualized discount rate that equates the future coupon and principal payments to the initial proceeds received from the bond offering.

3. Bonds are issued in the primary market through a telecommunications network.

Answers

- 1.A
- 2. True
- 3. True

3. Equity Markets

Equity Financing

- Stock markets facilitate equity investment into firms and the transfer of equity investments between investors.
 - a. Private Equity
 - b. Public Equity

1. Private Equity

Private Equity

- When a firm is created, its founders typically invest their own money in the business. The founders may also invite some family or friends to invest equity in the business. This is **referred to as private equity** because the business is privately held and the owners cannot sell their shares to the public.
- Young businesses use debt financing from financial institutions and are better able to obtain loans if they have substantial equity invested.
- Over time, businesses commonly retain a large portion of their earnings and reinvest it to support expansion. This serves as another means of building equity in the firm.
- The founders of many firms dream of going public someday so that they can **obtain a large amount of financing** to support the firm's growth.
- They may also hope **to “cash out”** by selling their original equity investment to others.
- Normally, however, a firm's owners do not consider going public until **they want to sell at least \$50 million in stock**.
- In addition, there are many fixed costs associated with going public, and these costs would be prohibitive for a firm that seeks to raise only a small amount of funds.

Financing by Venture Capital Funds

- Even if a firm wants to sell at least \$50 million of stock to the public, it may **not have a long enough history of stable business performance** that it can raise money from a large number of investors.
- Private firms that need a large equity investment but are not yet in a position to go public may attempt to obtain **funding from a venture capital (VC) fund**.
- Such funds receive money from wealthy investors and from pension funds that are willing to maintain the investment for a long-term period, such as 5 or 10 years.
- These investors are not allowed to withdraw their money before a specified deadline.
- Venture capital funds have participated in a number of businesses that ultimately went public and became very successful, including Apple, Microsoft, and Oracle Corporation.

Financing by Private Equity Funds

- Private equity funds pool equity funding provided by institutional investors (such as pension funds and insurance companies) and invest in businesses.
- They also rely heavily on borrowing to finance their investments.
- Unlike VC funds, private equity funds commonly take over businesses and manage them.
- Their managers typically take a percentage of the profits they earn from their investments in return for managing the fund.
- They pursue companies that are overvalued and mismanaged (in their opinion), because they can more easily achieve a high return on their investment when buying weak firms that they can improve.
- They also charge an annual fee for managing the fund.
- Because they commonly purchase a majority stake or all of a business, they have control to restructure the business as they wish.
- They sell their stake in the business after several years.

2. Public Equity

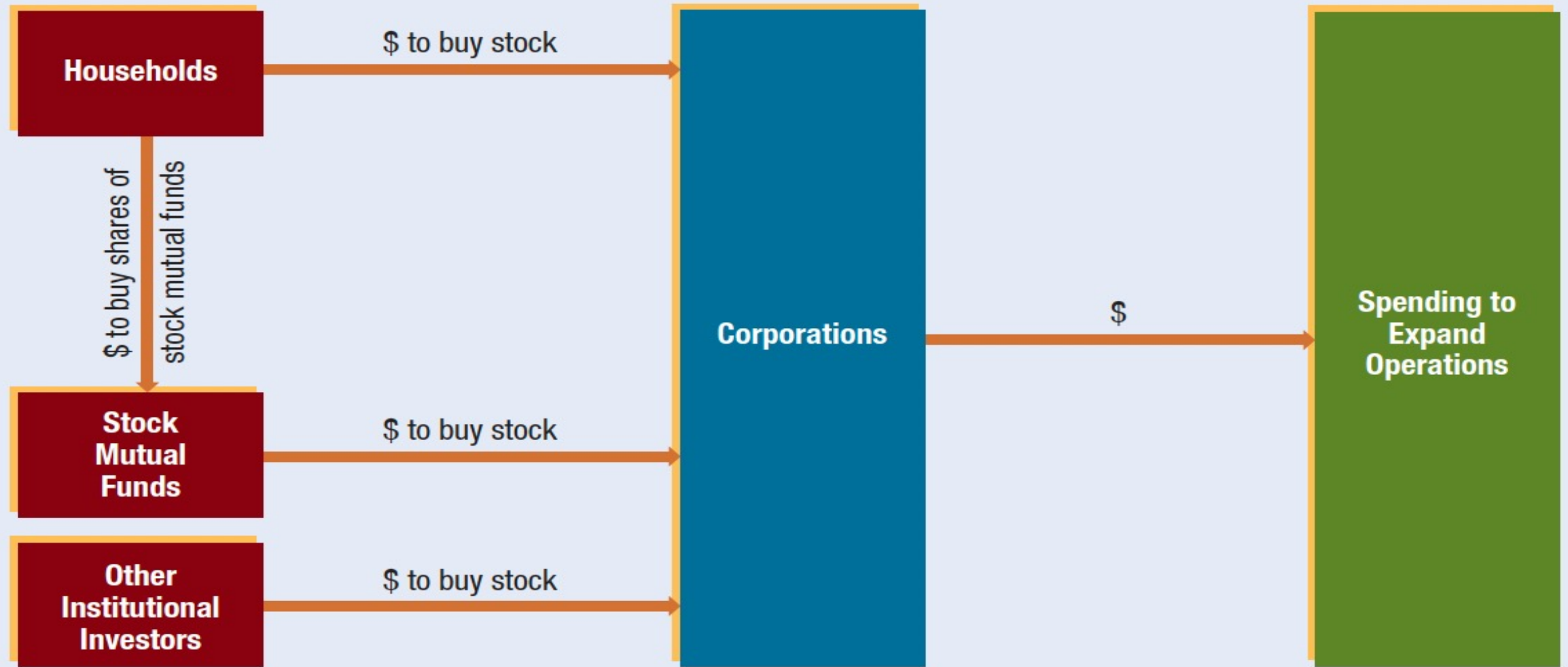
Public Equity

- When a **firm goes public**, it issues stock in the primary market in exchange for cash.
- This changes the firm's **ownership structure** by increasing the number of owners.
- It changes the firm's **capital structure** by increasing the equity investment in the firm, which allows the firm to pay off some of its debt. It also enables corporations to finance their growth.
- **A stock** is a certificate representing partial ownership in the firm. Like debt securities, common stock is issued by firms in the primary market to obtain long-term funds.
- Yet the purchaser of stock becomes **a part owner of the firm, rather than a creditor**.
- This ownership feature attracts many investors who want to have an equity interest in a firm but do not necessarily want to manage their own firm.
- Owners of stock can benefit from the growth in the value of the firm and therefore have more to gain than creditors.
- However, they are also susceptible to large losses, as the values of even the most respected corporations have declined substantially in some periods.

Public Equity

- The means by which stock markets facilitate the flow of funds are illustrated in Exhibit 10.1.
- The stock markets are like other financial markets in that they link the surplus units (that have excess funds) with deficit units (that need funds).
- Stock issued by corporations may be purchased directly by households.
- Alternatively, households may invest in shares of stock mutual funds; the managers of these funds use the proceeds to invest in stocks.
- Other institutional investors such as pension funds and insurance companies also purchase stocks.
- The massive growth in the stock market has enabled many corporations to expand to a much greater degree and has allowed investors to share in the profitability of corporations.

Exhibit 10.1 How Stock Markets Facilitate the Flow of Funds



Public Equity

- In addition to the primary market, which facilitates new financing for corporations, there is also a **secondary market** that allows investors to sell the stock they previously purchased to other investors who want to buy it.
- Thus the secondary market **creates liquidity** for investors who invest in stocks.
- In addition to realizing potential gains when they sell their stock, investors may also **receive dividends** on a quarterly basis from the corporations in which they invest.
- Some corporations **distribute a portion of their earnings** to shareholders in the form of dividends, **but others reinvest all of their earnings** so that they can achieve greater growth.

Ownership and Voting Rights

- In publicly traded firms, however, most of the shareholders are not managers. Thus they must rely on the firm's managers to serve as agents and to make decisions in the shareholders' best interests.
- The ownership of common stock entitles shareholders to a number of rights not available to other individuals.
- Normally only the owners of common stock are permitted to vote on certain key matters concerning the firm, such as the election of the board of directors, authorization to issue new shares of common stock, approval of amendments to the corporate charter, and adoption of bylaws.
- Many investors assign their vote to management through the use of a proxy, and many other shareholders do not bother to vote.
- As a result, management normally receives the majority of the votes and can elect its own candidates as directors

Preferred Stock

- Preferred stock represents an equity interest in a firm that usually does **not allow for significant voting rights**.
- Preferred shareholders technically share the ownership of the firm with common shareholders and are therefore compensated only when earnings have been generated.
- Thus, if the firm does not have sufficient earnings from which to pay the preferred stock dividends, it may omit the dividend **without fear of being forced into bankruptcy**.
- A **cumulative provision** on most preferred stock prevents dividends from being paid on common stock until all preferred stock dividends (both current and those previously omitted) have been paid.
- The owners of preferred stock normally do not participate in the profits of the firm beyond the **stated fixed annual dividend**.
- All profits above those needed to pay dividends on preferred stock belong to the owners of common stock.
- Because the dividends on preferred stock can be omitted, a firm assumes less risk when issuing it than when issuing bonds.

Participation in Stock Markets

- Investors can be classified as individual or institutional.
- The investment by individuals in a large corporation commonly exceeds 50 percent of the total equity.
- Each individual's investment is typically small, however, which means that ownership is scattered among numerous individual shareholders.
- The various types of institutional investors that participate in the stock markets are summarized in Exhibit 10.2.
- Because some financial institutions hold large amounts of stock, their collective sales or purchases of stocks can significantly affect stock market prices.
- In addition to participating in stock markets by investing funds, financial institutions sometimes issue their own stock as a means of raising funds.
- Many stock market transactions involve two financial institutions. For example, an insurance company may purchase the newly issued stock of a commercial bank. If the insurance company someday sells this stock in the secondary market, the purchaser may be a mutual fund or pension fund.

Exhibit 10.2 Institutional Use of Stock Markets

TYPE OF FINANCIAL INSTITUTION	PARTICIPATION IN STOCK MARKETS
Commercial banks	• Issue stock to boost their capital base. • Manage trust funds that usually contain stocks.
Stock-owned savings institutions	• Issue stock to boost their capital base.
Savings banks	• Invest in stocks for their investment portfolios.
Finance companies	• Issue stock to boost their capital base.
Stock mutual funds	• Use the proceeds from selling shares to individual investors to invest in stocks.
Securities firms	• Issue stock to boost their capital base. • Place new issues of stock. • Offer advice to corporations that consider acquiring the stock of other companies. • Execute buy and sell stock transactions of investors.
Insurance companies	• Issue stock to boost their capital base. • Invest a large proportion of their premiums in the stock market.
Pension funds	• Invest a large proportion of pension fund contributions in the stock market.

3. Initial Public Offering (IPO)

Initial Public Offering

- A corporation first decides to issue stock to the public in order to raise funds.
- It engages in an initial public offering (IPO), which is a first-time offering of shares by a specific firm to the public.
- An IPO is commonly used not only to obtain new funding but also to offer some founders and VC funds a way to cash out their investment.
- A typical IPO is for at least \$50 million, since this would be the minimum size needed to ensure adequate liquidity in the secondary market if investors wish to sell their shares.

