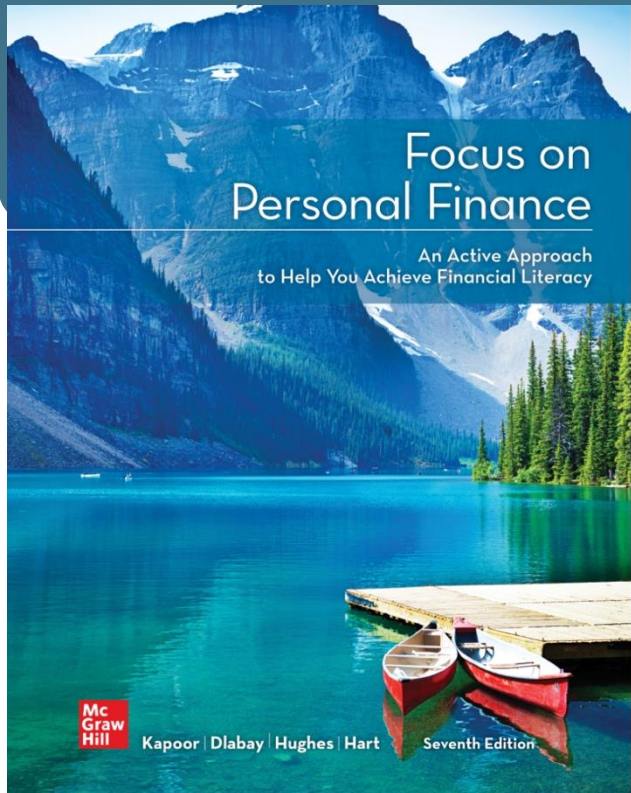




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Chapter 11

Investing Basics and Evaluating Bonds



Investing Basics and Evaluating Bonds

Chapter Learning Objectives

- LO11.1** Explain why you should establish an investment program.
- LO11.2** Describe how safety, risk, income, growth, and liquidity affect your investment program.
- LO11.3** Identify the factors that reduce investment risk.
- LO11.4** Understand why investors purchase government bonds.
- LO11.5** Recognize why investors purchase corporate bonds.
- LO11.6** Evaluate bonds when making an investment.



Preparing for an Investment Program

LO11.1

- Why begin an investment program ***now***?
 - The sooner you start investing, the more time your investments have to work for you
- *Specific* goals you want to accomplish must be the driving force behind your investment plan
 - Some financial planners suggest stating goals in terms of money, while other suggest stating goals by particular things desired
 - Goals must be specific and measurable



Establishing Investment Goals

1. How much money do you need to satisfy your investment goals?
2. How much risk are you willing to assume in your investment program?
3. What possible economic or personal conditions could alter your investment goals?
4. Considering your economic circumstances and how long your investments can work for you, are your investment goals reasonable?
5. Are you willing to make the sacrifices necessary to ensure that you meet your investment goals?



Performing a Financial Checkup

- **Pay your bills on time**
 - You have an obligation to pay for credit purchases
- **Work to balance your budget**
 - Many individuals regularly spend more than they make
 - Rule of thumb is to limit monthly payments for all types of consumer credit to 20% of your net (after-tax) income
- **Manage your credit card debt**
- **Start an **emergency fund**, an amount of money you can obtain quickly in case of immediate need**
 - A reasonable amount to have in your emergency fund is at least three months worth of living expenses
 - You may also want to establish a **line of credit**



Accumulate the Money Needed to Fund Your Investments

Suggestion	Comments
1. Pay your bills, then pay yourself.	Many financial experts recommend that you (1) pay your monthly bills, (2) save or invest a reasonable amount of money, and (3) use the money left over for personal expenses and entertainment.
2. Take advantage of employer-sponsored retirement programs.	Some employers will match part or all of the contributions you make to a company-sponsored retirement program.
3. Participate in an elective savings program.	You can elect to have money withheld from your paycheck each payday and automatically deposited in a savings or investment account.
4. Make a special savings effort one or two months each year.	By cutting back to the basics, you can obtain money for investment purposes.
5. Take advantage of gifts, inheritances, and windfalls.	Use money from unexpected sources to fund an investment program.



How the Time Value of Money Affects Your Investments

- *Time value of money* involves increases in an amount of money that you save or invest because your savings or investments earn interest or dividends or increase in value
- The longer your money can work for you and earn interest or dividends and/or appreciate, the more your investments will be worth



Factors Affecting the Choice of Investments

LO11.2

- **Safety and Risk**
 - *Safety* in an investment means minimal risk or less
 - *Risk* in an investment means a measure of uncertainty about the outcome
- Investors sometimes purchase certain investments because they want a predictable source of income
 - Most conservative and safe investments (e.g., passbook savings accounts, CDs, and Treasury securities) are also the most predictable sources of income



Safety and Risk

- Investments range from very safe to very risky
 - A **speculative investment** is a high-risk investment made in the hope of earning a relatively large profit in a short time
 - Investors often choose more speculative stocks because of greater *growth* potential
- One basic rule sums up the relationship between the factors of safety and risk:
 - ***Your potential return on any investment should be directly related to the risk you assume***



Components of the Risk Factor

1. **Inflation risk** is a rise in the general level of prices
2. **Interest rate risk** is the result of changes in the interest rates in the economy
3. **Business failure risk** is often a result of bad management, unsuccessful products, competition, or a host of other factors that cause the business to be less profitable than originally anticipated or to experience a loss
4. **Market risk** may be caused by political or social conditions, as well as many other factors
 - Example: COVID-19 led to huge losses in the market



Investment Liquidity

- **Liquidity** is the ability to buy or sell an investment quickly without substantially affecting the investment's value
- Investments range from near-cash investments to frozen investments in which it is virtually impossible to get your money
 - Interest-bearing checking and savings accounts are very liquid, while CDs impose penalties for withdrawing money before the maturity date



Factors That Reduce Investment Risk

LO11.3

- For almost 100 years, stocks have returned an average return of a little less than 10% per year
 - These returns are not guaranteed, and there have been (and will continue to be) some years of negative returns
- Long-term average return for the stock market is well ahead of inflation and the return on bonds, real estate, and savings accounts or CDs
 - Before purchasing stocks, consider how asset allocation can help you create a balanced portfolio and may help reduce risk in your investment program



Asset Allocation and Diversification

- **Asset allocation** is the process of spreading your assets among several different types of investments to lessen risk (i.e., don't put all your eggs in one basket!)
- Asset allocation is often expressed in percentages
 - What percentage of my assets do I want to put in stocks and mutual funds?
 - What percentage do I want to put in bonds or CDs?
- Diversification provided by investing in different investments provides a measure of safety and reduces risk because a loss in one type of investment may be offset by gains from others

Factors Used to Evaluate Traditional Investment Alternatives

Exhibit 11-4

Type of Investment	FACTORS TO BE EVALUATED				
	Safety	Risk	Income	Growth	Liquidity
Corporate stock	Average	Average	Average	High	Average
Corporate bonds	Average	Average	High	Low	Average
Government bonds	High	Low	Low	Low	High
Mutual funds	Average	Average	Average	Average	Average
Real estate	Average	Average	Average	Average	Low

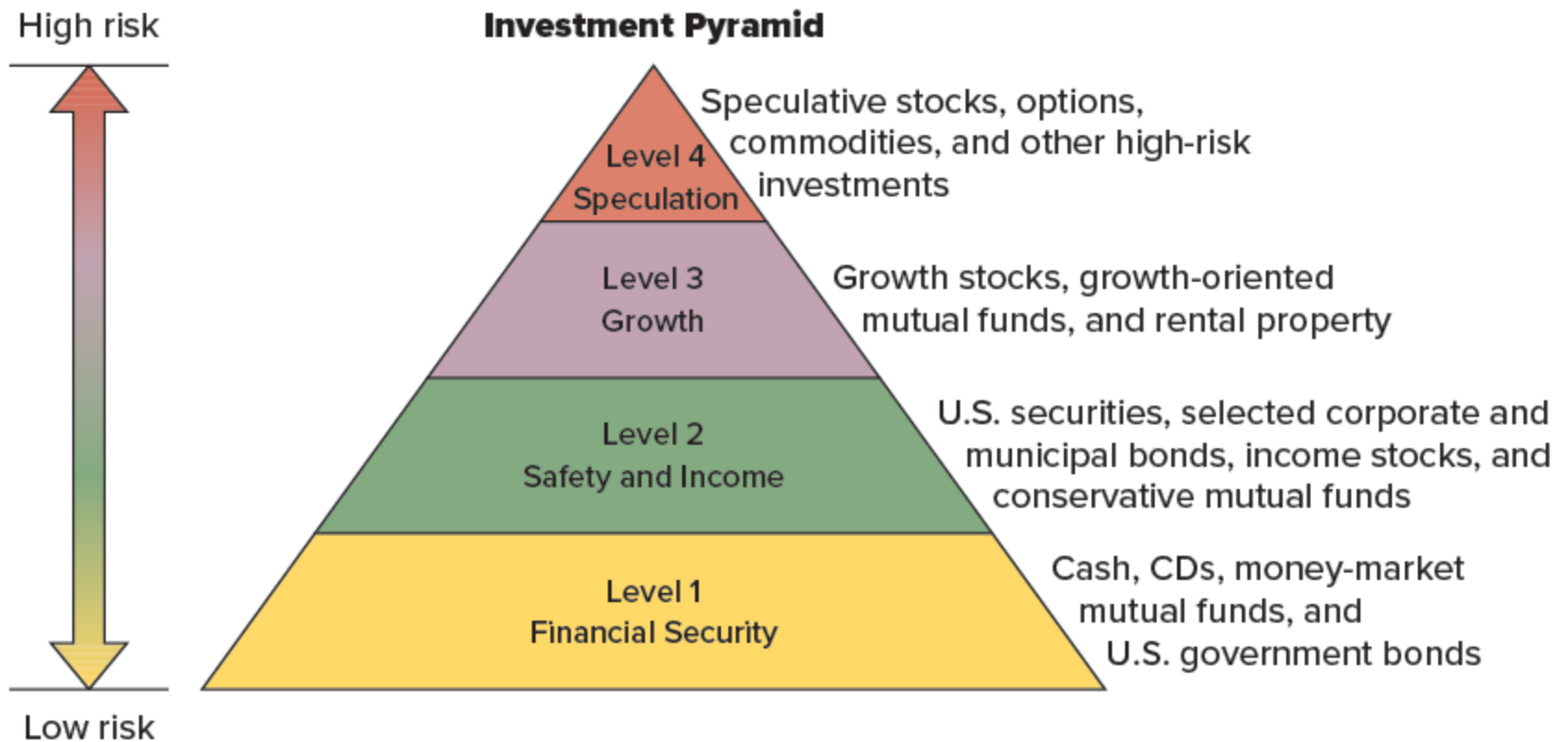


Asset Allocation and Diversification (Continued)

- Percentage of your investments that should be invested in each asset class is determined by:
 - Your age;
 - Your investment objectives;
 - How much you can save and invest each year;
 - The dollar value of your current investments;
 - The economic outlook for the economy; and
 - Other factors
- Many personal finance websites provide asset allocation calculators to help you determine the right types of investments for your investment program

Typical Investments for Financial Security, Safety and Income, Growth, and Speculation

Exhibit 11-5





Asset Allocation and Diversification (Concluded)

- **The Time Factor**

- Amount of time your investments have to work for you is another important factor when managing your investment portfolio

- **Your Age**

- Younger investors tend to invest a large percentage of their nest egg in growth-oriented investments
- Older investors tend to be more conservative and invest in government bonds, high-quality corporate bonds, and very safe corporate stocks or mutual funds
- Financial experts suggest you subtract your age from 100, and the difference is the percentage of your assets that should be invested in growth investments



Your Role in the Investment Process

1. Evaluate potential investments

- Invest the time required to research different investment alternatives so that you can make an informed decision

2. Monitor the value of your investments

- Many investors use a simple chart

3. Keep accurate records

4. Other factors

- Consider using a professional financial planner who has had training in securities, insurance, taxes, real estate, and estate planning



Safeguarding Against a Crisis

1. Establish a larger emergency fund.
2. Know what you owe.
3. Reduce spending.
4. Notify credit card companies and lenders if you are unable to make payments.
5. Monitor the value of your investment and retirement accounts.
6. Consider converting investments to cash to preserve value.



Government Bonds and Debt Securities

LO11.4

- **Government bond** is a written pledge of a government or a municipality to repay a specified sum of money, along with interest
- U.S. government securities are backed by the full faith and credit of the U.S. government and have always carried a decreased risk of default
 - Can be held until maturity or sold before maturity
- Four principal types of securities issued by the U.S. Treasury, with minimum purchase of \$100:
 - Treasury bills, Treasury notes, Treasury bonds, and Treasury Inflation-Protected Securities (TIPS)

Information about Treasury Bills, Notes, Bonds, and TIPS

Type of Security	Maturity	Interest	Notes
Treasury bills (T-bills)	4, 8, 13, 26, or 52 weeks	Discounted securities because the actual purchase price is less than the maturity value.	At maturity, the government repays the face value of T-bills. The difference between the purchase price and the face value is interest.
Treasury notes (T-notes)	2, 3, 5, 7, and 10 years	Interest is paid every six months until maturity.	Interest rate is slightly higher than that for T-bills because of the longer maturity.
Treasury bonds	30 years	Interest is paid every six months until maturity.	Interest rate is slightly higher than that for T-bills and T-notes because of the longer maturity.
Treasury Inflation-Protected Securities (TIPS)	5, 10, or 30 years. At maturity, you are paid the adjusted principal or original principal, whichever is greater.	Interest is paid every six months until maturity at a fixed rate applied to the adjusted principal.	TIPS principal increases with inflation and decreases with deflation.



State and Local Government Securities

- **Municipal bond** is a debt security issued by a state or local government
 - Used to finance ongoing activities of state and local governments and major projects (e.g., airports, schools, toll roads, and toll bridges)
 - May be purchased directly from the government entity that issued them or through account executives
- State and local securities are classified as the following:
 1. **General obligation bond** is backed by the full faith, credit, and taxing power of the issuing government
 2. **Revenue bond** is repaid from income generated by the project it is designed to finance

State and Local Government Securities (Continued)

- Interest on municipal bonds may be exempt from federal taxes
 - Municipal bonds exempt from federal taxation are generally exempt from state and local taxes only in the state where they are issued
 - While *interest* may be exempt, a *capital gain* (that results when you sell a municipal bond before maturity *and* at a profit) may be taxable
- Due to tax-exempt status, interest rates on municipal bonds are lower than those on taxable bonds
- Calculate the *taxable equivalent yield* as follows:

$$\text{Taxable equivalent yield} = \frac{\text{Tax-exempt yield}}{1.0 - \text{Your tax rate}}$$

Determining Taxable Equivalent Yield: An Example

EXAMPLE: Determining Taxable Equivalent Yield

The taxable equivalent yield on a 3 percent, tax-exempt municipal bond for a person in the 32 percent tax bracket is 4.41 percent, as follows:

$$\begin{aligned}\text{Taxable equivalent yield} &= \frac{0.03}{1.0 - 0.32} \\ &= 0.0441, \text{ or } 4.41\text{percent}\end{aligned}$$



Conservative Investment Options: Corporate Bonds

LO11.5

- A **corporate bond** is a corporation's written pledge to repay a specified amount of money with interest
 - **Face value** is the dollar amount the bondholder will receive at the bond's maturity (usually \$1,000)
 - Between time of purchase and maturity date, the corporation pays interest to the bondholder
 - **Maturity date** of a corporate bond is the date on which the corporation is to repay the borrowed money (generally between 1 and 30 years after date of issue)
 - **Bond indenture** is a legal document that details all the conditions relating to a bond issue
 - **Trustee** is a financially independent firm that acts as the bondholders' representative



Why Corporations Sell Bonds

- Bonds are often referred to as the *workhorse of corporate finance* and are sold for various reasons:
 - Finance a corporation's ongoing business activities or when it is difficult to sell stock
 - Improve a corporation's financial leverage
 - Reduce taxes the corporation must pay to federal and state governments
- Corporate bonds are a form of *debt financing*
 - Interest payments on bonds are required, and bond owners must be repaid at a future date
 - In the event of bankruptcy, bondholders have a claim to the corporation's assets *prior to* that of stockholders

Types of Bonds

- Most corporate bonds are **debentures**
 - A **debenture** is a bond that is backed only by the reputation of the issuing corporation
- **Mortgage bonds** (i.e., secured bonds) are corporate bonds secured by various assets of the issuing firm
 - More appealing to conservative investors
 - Rates usually lower than those on unsecured debentures
- A **convertible bond** can be exchanged, at the owner's option, for a specified number of shares of the corporation's common stock
- **High-yield bonds** (i.e., junk bonds) pay higher interest but also have a higher risk of default



Provisions for Repayment

- Most corporate bonds are callable, though many corporations agree not to call bonds for the first 5 to 10 years after issuance
 - **Call feature** allows firm to call in, or buy, outstanding bonds from current bondholders before maturity date
- Two methods used by corporations to ensure they have sufficient funds available to redeem a bond issue at maturity:
 1. Establish a **sinking fund**, a fund to which annual or semiannual deposits are made for the purpose of redeeming a bond issue
 2. Issue **serial bonds**, bonds of a single issue that mature on different dates

Why Investors Purchase Corporate Bonds

1. **Interest income** is normally received every six months until the bond's maturity, where interest is calculated as follows:

$$\text{Amount of annual interest} = \text{Face value} \times \text{Interest rate}$$

- Method used to pay bondholders their interest depends on whether they own **registered bonds** or **registered coupon bonds**
- **Registered bonds** are registered in the owner's name by the issuing company, while **registered coupon bonds** are registered for principal only, not for interest

Why Investors Purchase Corporate Bonds (Continued)

2. Possible increase in value

- Price of corporate bond may fluctuate until maturity date, with changes in overall interest rates being the primary cause of most price fluctuations
 - Price of bond may also be affected by financial conditions of issuing corporation, supply and demand, an upturn or downturn in the economy, political uncertainty, or the proximity of the bond's maturity date
- When interest rates are increasing or decreasing, it is possible to approximate a bond's current market value using the following formula:

$$\text{Approximate market value} = \frac{\text{Dollar amount of annual interest}}{\text{Comparable interest rate}}$$

Calculating Approximate Market Value

EXAMPLE: Calculating Approximate Market Value

Assume you purchase a \$1,000 Heinz bond that pays 5.2 percent, or annual interest of \$52 each year. Also assume new corporate bond issues of comparable quality are currently paying 4.75 percent. The approximate market value is \$1,094.74 as follows:

$$\begin{aligned}\text{Approximate market value} &= \frac{\text{Dollar amount of annual interest}}{\text{Comparable interest rate}} = \frac{\$52}{4.75\%} \\ &= \$1,094.74\end{aligned}$$



Why Investors Purchase Corporate Bonds (Concluded)

3. **Repayment at maturity**

- After purchasing a bond, you have two options:
 - Keep the bond until maturity and then redeem it
 - Sell the bond to another investor
- Value of your bond is closely tied to the corporation's ability to pay interest until maturity and repay its bond indebtedness at maturity



A Typical Bond Transaction

- Most bonds are sold through full-service brokerage firms, discount brokerage firms, or the Internet
 - If you use a full-service brokerage firm, your account executive should provide both information and advice about bond investments
 - Chief advantage of using a discount brokerage firm or trading online is lower commissions
- You must do your own research with regards to commissions (i.e., transaction costs)
 - The actual amount you pay is often hard to determine
 - Ask the firm or account executive for the exact dollar amount you are being charged

The Decision to Buy or Sell Bonds

LO11.6

- The Internet may be used for a variety of purposes when investing in bonds:
 - Accessing a corporation's web page
 - Obtaining price information on specific bond issues to track the value of your investments
 - Trading bonds online
 - Accessing specific bond websites to get research about a corporation or government entity and its bond issues
- In bond quotations, prices are given as a percentage of the face value (often \$1,000)
 - To find the actual current price of the bond, you must multiply the face value by the bond quotation

Determining Bond Prices

EXAMPLE: Determining Bond Prices

At the time of publication, the quote for a 4 percent Walmart bond that matures in April 2043 is 117. To calculate the current price for the Walmart bond, multiply the face value—usually \$1,000—by the bond price quotation. If the bond price quotation is 117, the current price is \$1,170, as shown below.

$$\begin{aligned}\text{Current price} &= \text{Face Value} \times \text{Bond Price Quotation} \\ &= \$1,000 \times 117\% \\ &= \$1,000 \times 1.17 \\ &= \$1,170\end{aligned}$$



Bond Ratings

- Detailed information about the quality and risk for a bond issue, bond rating, provisions for repayment, maturity date, interest rate, call provisions, trustee, and details about security (if any) is provided by:
 - Moody's
 - Standard & Poor's
 - Fitch Ratings

Bond Information Available by Accessing the Financial Investment Regulatory Authority (FINRA) Website

Visa Corporate Bond

Overview

1. Price:	105
2. Coupon (%):	2.75
3. Maturity date:	09/15/2027
4. Lookup symbol:	V4539215
5. Yield (%):	2.62
6. Standard & Poor's rating:	AA-
7. Coupon payment frequency:	Semiannual
8. First coupon date:	03/15/2018
9. Type:	Corporate debenture
10. Callable:	Yes

1. Price quoted as a percentage of the face value: $\$1,000 \times 105\% = \$1,050$
2. Coupon (%) is the rate of interest: 2.75%.
3. Maturity date is the date when bondholders will receive repayment of the face value: September 15, 2027.
4. Lookup Symbol is the information you can use to determine the current price and other information about this bond issue on Internet sites: V4539215.
5. Yield (%) is determined by dividing the dollar amount of annual interest by the current price of the bond: $\$27.50 \div \$1,050 = 0.0262$, or 2.62%.
6. Standard & Poor's rating is issued by Standard & Poor's and is used to assess the risk associated with this bond: AA-. An AA- rating represents a bond classified as an "investment grade" bond.
7. Coupon payment frequency tells bondholders how often they will receive interest payments: semiannually, or every six months.
8. First coupon date was March 15, 2018.
9. Type indicates this is a corporate debenture bond.
10. Callable tells the bondholder if the bond is callable: Yes.

SOURCES: Financial Industry Regulatory Authority, <http://finra-markets.morningstar.com/BondCenter/BondDetail.jsp?ticker=C709073&symbol=V4539215>, accessed January 23, 2020.

Yield Calculations

- Yield is the rate of return earned by an investor who holds an investment for a stated period of time – usually a 12-month period
 - Changes in the yield for a bond are caused by an increase or a decrease in the current price of a bond
- **Current yield** is determined by dividing the annual interest amount by the bond's current price
 - The higher the current yield, the better!

$$\text{Current yield} = \frac{\text{Annual interest amount}}{\text{Current price}}$$

Calculating Current Yield

EXAMPLE: Calculating Current Yield (McDonald's)

Assume you own a McDonald's corporate bond that pays 3.25% interest on an annual basis. The face value for your bond is \$1,000. This means that each year, you will receive \$32.50 ($\$1,000 \times 3.25\% = \32.50). Also assume the current price of the McDonald's bond is \$1,058. The current yield is 3.07%, as follows:

$$\begin{aligned}\text{Current yield} &= \frac{\$32.50}{\$1,058} \\ &= 0.0307, \text{ or } 3.07\%\end{aligned}$$



Other Sources of Information

- Investors can use two additional sources of information to evaluate potential bond investments:
 1. Business and personal finance magazines
 2. Federal agencies, as well as state and local governments



Chapter Summary

LO11.1: Explain why you should establish an investment program.

- In addition to developing investment goals, you must make sure your personal financial affairs are in order.
- The next step is the accumulation of an emergency fund equal to at least three months' living expenses.
- Then, it's time to save the money needed to establish an investment program.
- The time value of money concept can help you achieve your goals—especially if you start sooner rather than later.



Chapter Summary

LO11.2: Describe how safety, risk, income, growth, and liquidity affect your investment program.

- All investors must consider the factors of safety, risk, income, growth, and liquidity.
- Especially important is the relationship between safety and risk.
 - Basically, this relationship can be summarized as follows: Your potential return for any investment should be directly related to the risk you assume.
- In addition to safety and risk, investors choose investments that provide income, growth, or liquidity.



Chapter Summary

LO11.3: Identify the factors that can reduce investment risk.

- Asset allocation is the process of spreading your assets among several different types of investments to lessen risk.
 - In addition to asset allocation, the amount of time before you need your money is a critical component in the types of investments you choose.
 - Finally, your age is a factor that influences investment choices.
- You can also improve your investment returns by evaluating all potential investments, monitoring the value of your investments, developing a plan if you experience a personal or an economic crisis, and keeping accurate and current records.
 - Professional help and your tax situation may also affect your investment decisions.



Chapter Summary

LO11.4: Understand why investors purchase government bonds.

- Generally, U.S. government securities—Treasury bills, notes, bonds, and Treasury Inflation-Protected Securities— are chosen because most investors consider them to be a safe harbor in troubled economic times.
 - While securities issued by the U.S. Treasury are taxable for federal income tax purposes, they are exempt from state and local taxation.
- Municipal bonds are also conservative investments and may provide tax-exempt income.



Chapter Summary

LO11.5: Recognize why investors purchase corporate bonds.

- Bonds are issued by corporations to raise capital. Corporate bonds may be debentures, mortgage bonds, convertible bonds, or high-yield bonds.
- Investors purchase corporate bonds for three reasons: (1) interest income, (2) possible increase in value, and (3) repayment at maturity.
 - The method used to pay bondholders interest depends on whether they own registered bonds or registered coupon bonds.
- Most corporate bonds are bought and sold through full-service brokerage firms, discount brokerage firms, or the Internet. Investors pay brokers when bonds are bought and sold.



Chapter Summary

LO11.6: Evaluate bonds when making an investment.

- Today it is possible to obtain information on the Internet that can be used to evaluate both government and corporate bonds.
- It is also possible to trade bonds online.
- To determine the quality of a bond issue, most investors study the ratings provided by Moody's, Standard & Poor's, and Fitch Ratings.
 - Investors can also calculate a current yield to evaluate a decision to buy or sell bond issues.
 - Finally, newspapers, business magazines, and government sources can be used to evaluate both government and corporate bonds and the economy.