Intermediate Financial Management 15th edition Brigham Solutions Manual

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Solution and Answer Guide

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CHAPTER 1: AN OVERVIEW OF FINANCIAL MANAGEMENT AND THE FINANCIAL ENVIRONMENT

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ANSWERS TO BEGINNING-OF-CHAPTER QUESTIONS

1-1 What is presumed to be the *primary objective* of financial management? How is this goal related to other societal goals and considerations? Is this goal consistent with the basic assumptions of microeconomics? Are managers' actions always consistent with this goal?

Answer:
The primary goal is assumed to be shareholder wealth maximization, which translates to stock price maximization. That, in turn, means maximizing the present value (PV) of future free cash flows.

Maximizing shareholder wealth requires that the firm produce things that customers want and at the lowest cost consistent with high quality. It also means holding risk down, which will result in a relatively low cost of capital, which is necessary to maximize the PV of a given cash flow stream.

This also gets into the issue of capital structure—how much debt should we use? The more debt the firm uses, the lower its taxes, and the fewer shares outstanding, hence less dilution of earnings. However, more debt means more risk. So, it's necessary to consider capital structure when attempting to maximize share prices.

Dividend policy is also an issue—how much of its earnings should the firm pay out as dividends? The answer to that question depends on a number of factors, including the firm's investment opportunities, its access to capital markets, its stockholders' desires (and their tax rates), and the kind of signals stockholders get from dividend actions.

Shareholder wealth maximization is partially consistent and partially inconsistent with generally accepted societal goals. It is consistent because well-run firms produce good products at low costs, sell them at competitive prices, employ people, pay taxes, and generally improve society. However, without constraints, firms would tend to form monopolies and end up charging prices that are too high and not producing enough output. They might also pollute the air and water, engage in unfair labor practices, and

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so on. So, constraints (antitrust, labor, environmental, etc. laws) should be and are imposed on businesses. **That said, stock price maximization is consistent with a strong economy, economic progress, and "the good life" for most citizens.**

In standard introductory microeconomics courses, we assume that firms attempt to maximize profits. In more advanced econ courses, the goal is broadened to value maximizing, so finance and economics are indeed consistent.

As WorldCom, Enron, and other corporate scandals demonstrated very clearly, managers do not always have stockholders' interests as a primary goal—some managers have their own interests. This point is further discussed below.

1-2 Finance is all about valuation—how to estimate asset values and what to do to increase them. We develop and use Excel models throughout the book. We start that process in this chapter with simple models used to value bonds, stocks, and capital budgeting projects. Working through the model will give you a refresher in valuation plus a refresher on (or preview of) Excel.

a. Explain how to find the value of a bond given the rate of interest it pays (its coupon rate), its par value (assume $1,000), and the going rate of interest on bonds with the same risk and maturity.
b. Explain how to find the value of a stock given its last dividend, its expected growth rate, and its required rate of return.
c. Explain how to find the value of a capital budgeting project given its cost, its expected annual net cash flows, its life, and its cost of capital.
d. In each of these cases, discuss how changes in the inputs would affect the output. Would it matter if the outputs were highly sensitive to changes in the inputs?

Answer for a. – d.
Refer to the model for quantitative answers to this question. All of these valuations involve applications of the basic valuation model:

$$\text{Value} = \sum_{t=0}^{N} \frac{CF_t}{(1+r)^t}.$$

Values for CF_t, r, and N are specified. For bonds, the CFs are interest payments and the maturity value, and N is the bond's life. Other things held constant, the higher the going interest rate, r, the lower the value of the bond. Also, if the coupon rate is high, then CFs are also high, and that increases the value of the bond. For a stock, the CFs are dividends, and for a capital budgeting project, they are operating cash flows.

The main point to get across with this question is that all assets are valued in essentially the same way. The Excel model goes into a little more detail on sensitivity analysis. Much more comes later in the book.

1-3 What are the advantages of the corporate form over a sole proprietorship or a partnership? What are the disadvantages of this form?

Answer:
The advantages of a corporate form of ownership are that investor liability is limited to the amount invested, corporations can raise capital through public offerings of stock, and ownership can be easily transferred from person to person by simply selling shares of stock. In a sole proprietorship or partnership, on the other hand,

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the owner or owners are exposed to potentially unlimited liability, it is difficult to raise equity capital since either new partners must be found or the existing partners must put up additional capital, and it is difficult to transfer ownership between partners or from a sole proprietor to someone else.

The disadvantages of the corporate form are that there are numerous forms that must be filled out and regulations that must be followed that are not required of a sole proprietorship or a partnership, corporations are subject to double taxation of distributed earnings in that the corporation first pays taxes on the pre-tax income, and then the owners must pay tax on the dividend or capital gains income, and the separation of ownership (by the shareholders) and control (by management) can result in management taking actions that are not in the owners' best interests.

1-4 What are the various factors that affect the cost of money and hence interest rates? How will changes in these components affect asset prices?

Answer:
The cost of money is affected by (1) production opportunities, (2) the time preference for consumption, (3) risk, and (4) inflation. When production opportunities are good, and assets are earning high rates of return, then interest rates tend to be higher because there is a larger demand for borrowing to finance these projects. Also, investors who are considering lending money recognize that their alternative investments have a high return and so demand a high return on their investments. When investors have a strong preference for current consumption, then they demand a higher return on their investments to compensate them for having to defer current purchases, and so the cost of money is higher. Investors demand a higher rate of return on riskier investments in order to compensate them for having to be exposed to more risk. When investors expect future inflation, then the cost of money increases so that investment returns better cover this future price increase.

If any of these factors change, then the cost of money will change, and hence the yield and the price of a security will change as well. For example, if overall the time preference for consumption increases, then overall interest rates will tend to increase and the yield on debt instruments will tend to increase, and their prices will fall. If the underlying level of inflation declines, as it did through the 1990s, then interest rates on debt instruments will decline, driving up their prices. On the other hand, if a company experiences financial problems, increasing the likelihood of default and bankruptcy and becoming more risky, then the yield on its bonds will increase and their prices will fall.

1-5 Are most stocks traded on face-to-face exchanges or electronically? What impact has this had on retail stock transactions? On portfolio management?

Answer:
Most stocks are now traded on electronic exchanges. Rather than only two or three face-to-face exchanges, there are now dozens of electronic exchanges on which stocks trade. In electronic markets, a computer program matches buy and sell orders quickly and automatically. The costs of electronic exchanges are much lower than for a face-to-face exchange and transactions costs are much lower than they were decades ago as a result. Retail trades occur fast and at a low cost and so retail customers have benefited from the automation of markets. Portfolio managers have benefited similarly, although they can be preyed upon by high-frequency traders.

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1-6 What is securitization? How is securitization supposed to help banks and savings and loans (S&Ls) manage risks and increase homeowners' access to capital?

Answer:
Securitization is the process by which assets, such as mortgages held by banks, accounts receivables held by companies, or credit card obligations held by banks and finance companies, are packaged together and sold to investors. In the case of mortgages, a bank or savings and loan (S&L) may have a portfolio of mortgages that it has originated (or issued). Typically, a bank will have financed these mortgages with savings and checking account deposits and certificate of deposits (CDs), and once it has used up its loanable funds, it must either stop making new loans or raise more funds if it wants to make more loans. If the bank packages these mortgages and sells them to investors, then it can make more loans with the funds it receives. The idea is that the bank acts as an intermediary in this case, analyzing credit and making loans and then selling them off so it can make more loans; consumers get more loans, and banks get to do what they (supposedly) do best, which is to analyze risk and originate loans.

If a bank doesn't securitize its loans and, instead, holds them on its books, then it can be exposed to a lot of interest rate risk. Back in the 1980s, S&Ls were raising money with short-term CDs and lending it out long-term as 30-year fixed-rate mortgages. When interest rates skyrocketed, the interest they had to pay on the CDs increased dramatically, but since the mortgages were fixed-rate, the interest income the S&Ls received didn't increase. This caused hundreds of S&Ls to go bankrupt and cost the federal government and, ultimately, the U.S. taxpayers hundreds of billions of dollars. If, instead, S&Ls securitized the loans, they would no longer be exposed to the interest rate risk since they would have sold off the loans shortly after originating them. Of course, the interest rate risk doesn't go away! Instead, the investors in the securitized mortgages now receive the fixed interest payments. If these investors have themselves financed the investment with short-term borrowing, then they will be exposed to interest rate risk!

Answers to End-of-Chapter Questions

1-1 Define each of the following terms:
a. Proprietorship; partnership; corporation; charter; bylaws
b. Limited partnership; limited liability partnership; professional corporation
c. Stockholder wealth maximization
d. Money market; capital market; primary market; secondary market
e. Private markets; public markets; derivatives
f. Investment bank; financial services corporation; financial intermediary
g. Mutual fund; money market fund
h. Open outcry auction; dealer market; automated trading platform
i. Production opportunities; time preferences for consumption
j. Foreign trade deficit
k. Algorithmic trading; high-frequency trading

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Answer:

a. A proprietorship, or sole proprietorship, is a business owned by one individual. A partnership exists when two or more persons associate to conduct a business. In contrast, a corporation is a legal entity created by a state. The corporation is separate and distinct from its owners and managers. A company must file a charter to become a corporation. A charter includes the following information: (1) name of the proposed corporation, (2) types of activities it will pursue, (3) amount of capital stock, (4) number of directors, and (5) names and addresses of directors. The bylaws are a set of rules drawn up by the founders of the corporation. Included are such points as: (1) how directors are to be elected (all elected each year or perhaps one-third each year for 3-year terms), (2) whether the existing stockholders will have the first right to buy any new shares the firm issues, and (3) procedures for changing the bylaws themselves, should conditions require it.

b. In a limited partnership, limited partners' liabilities, investment returns, and control are limited, while general partners have unlimited liability and control. In a limited partnership, at least one partner is liable for all the debts in the partnership. A limited liability partnership (LLP), sometimes called a limited liability company (LLC), combines the limited liability advantage of a corporation with the tax advantages of a partnership. A professional corporation (PC), known in some states as a professional association (PA), has most of the benefits of incorporation but the participants are not relieved of professional (malpractice) liability.

c. Stockholder wealth maximization is the appropriate goal for management decisions. The risk and timing associated with expected earnings per share and cash flows are considered in order to maximize the price of the firm's common stock. Maximizing shareholder's wealth is a duty that needs to be fulfilled by corporations.

d. A money market is a financial market for debt securities with maturities of less than 1 year (short-term). The New York money market is an example of a money market. Capital markets are the financial markets for long-term debt and corporate stocks. The New York Stock Exchange is an example of a capital market. Primary markets are the markets in which newly issued securities are sold for the first time. Secondary markets are where securities are resold after initial issue in the primary market. The New York Stock Exchange is a secondary market.

e. In private markets, transactions are worked out directly between two parties and structured in any manner that appeals to them. Bank loans and private placements of debt with insurance companies are examples of private market transactions. In public markets, standardized contracts are traded on organized exchanges. Securities that are issued in public markets, such as common stock and corporate bonds, are ultimately held by a large number of individuals. Private market securities are more tailor-made but less liquid, whereas public market securities are more liquid but subject to greater standardization. Derivatives are those underlying assets that derive their value from other traded assets. Futures, options, and forwards are the examples of derivative markets. Therefore, the value of a derivative security is derived from the value of an underlying real asset.

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f. An investment banker is a facilitator between businesses and savers. Investment banking houses assist in the design of corporate securities and then sell them to savers (investors) in the primary markets. Financial service corporations offer a wide range of financial services such as brokerage operations, insurance, and commercial banking. A financial intermediary buys securities with funds that are obtained by issuing its own securities. An example is a common stock mutual fund that buys common stocks with funds obtained by issuing shares in the mutual fund.

g. A mutual fund is an organization that pools the money deposited by savers to buy financial instruments. These instruments receive dividends and interest. The resulting dividends, interest, and capital gains are distributed to the fund's shareholders after the deduction of operating expenses. Different funds are designed to meet different objectives. Money market funds are mutual funds which invest in short-term securities, carry low risk, and also offer their shareholders interest-bearing checking accounts.

h. An open outcry auction is a method where traders meet face-to-face at a particular location to agree on price and quantity. These traders communicate with each other through hand signals and shouts. In a dealer market, a dealer holds an inventory of the security and makes a market by offering to buy or sell. Others who wish to buy or sell can see the offers made by the dealers and can contact the dealer of their choice to arrange a transaction. An automated trading platform is a computer system in which buyers and sellers post orders and in which trades are automatically executed for matching orders.

i. Production opportunities are the cash-generating activities that require cash in the present but have the ability to generate more cash in the future. The more production opportunities available, the more cash will be demanded now. Consumption time preferences refer to the preferred pattern of consumption. Consumers' time preferences for consumption establish how much consumption they are willing to save or consume at different levels of interest. It majorly impacts required rate of return.

j. A foreign trade deficit occurs when businesses and individuals in the United States import more goods from foreign countries compared with exports. This causes an increase in interest rates. Trade deficits must be financed, and the main source of financing is debt. Foreign trade surplus occurs when exports are more than imports. As the trade deficit increases, the debt financing increases, driving up interest rates. U.S. interest rates must be competitive with foreign interest rates; if the Federal Reserve attempts to set interest rates lower than foreign rates, foreigners will sell U.S. bonds, decreasing bond prices, resulting in higher U.S. rates.

k. Algorithmic trading occurs when computers are programed to buy or sell stocks on behalf of stockholders if a particular event or sequence of events happens. High-frequency trading (HFT) is a type of algorithmic trading in which HFT traders, which are computers, buy and sell hundreds or thousands of times a minute. Most HFT is done by firms that are created for this purpose because HFT requires expensive computer systems and highly paid programmers.

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1-2 What are the three principal forms of business organization? What are the advantages and disadvantages of each?

Answer:
Sole proprietorship, partnership, and corporation are the three principal forms of business organization. The advantages of the sole proprietorship and partnership includes ease and low cost of formation. The advantages of the corporation include limited liability, indefinite life, ease of ownership transfer, and access to capital markets.

The disadvantages of a sole proprietorship are (1) difficulty in obtaining large sums of capital, (2) unlimited personal liability for business debts, and (3) limited life. The disadvantages of a partnership are (1) unlimited liability, (2) limited life, (3) difficulty of transferring ownership, and (4) difficulty of raising large amounts of capital. The disadvantages of a corporation are (1) double taxation of earnings and (2) requirements to file state and federal reports for registration, which are expensive, complex, and time-consuming.

1-3 What is a firm's fundamental value (which is also called its intrinsic value)? What might cause a firm's intrinsic value to be different from its actual market value?

Answer:
A firm's fundamental, or intrinsic, value is the present value of its free cash flows when discounted at the weighted average cost of capital. If the market price reflects all relevant information, then the observed price is also the intrinsic price. Intrinsic value depends on all of its expected future cash flows.

1-4 Edmund Corporation recently made a large investment to upgrade its technology. Although these improvements won't have much of an impact on performance in the short run, they are expected to reduce future costs significantly. What impact will this investment have on Edmund's earnings per share this year? What impact might this investment have on the company's intrinsic value and stock price?

Answer:
Earnings per share in the current year will decline due to the cost of the investment made in the current year, but otherwise, no significant performance impact in the short run. However, the company's stock price should increase due to the significant cost savings expected in the future.

1-5 Describe the ways in which capital can be transferred from suppliers of capital to those who are demanding capital.

Answer:
In a well-functioning economy, capital will flow efficiently from those who supply capital to those who demand it. This transfer of capital can take place in three ways:

1. Direct transfers of money and securities occur when a business sells its stocks or bonds directly to savers, without going through any type of financial institution. The business delivers its securities to savers, who in turn give the money to the firm it needs.

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2. Capital can also be transferred indirectly through an investment bank that underwrites the issue. An underwriter serves as a middleman and facilitates the issuance of securities. The company sells its stocks or bonds to the investment bank, which in turn sells these same securities to savers. The businesses' securities and the savers' money merely "pass through" the investment banking house.

3. Transfers can also be made through a financial intermediary. Here, the intermediary obtains funds from savers in exchange for its own securities. The intermediary uses this money to buy and hold businesses' securities. Intermediaries literally create new forms of capital. The existence of intermediaries greatly increases the efficiency of money and capital markets.

1-6 What are financial intermediaries, and what economic functions do they perform?

Answer:
Financial intermediaries are business organizations that receive funds in one form and repackage them for the use of those who need funds. Through financial intermediation, resources are allocated more effectively, and the real output of the economy is thereby increased.

1-7 Is an initial public offering an example of a primary or a secondary market transaction?

Answer:
A primary market is the market in which corporations raise capital by issuing new securities. An initial public offering is a stock issue where privately held firms go to public. Therefore, an IPO would be an example of a primary market transaction. A secondary offering of stock by a publicly traded company is also a primary market transaction. Other examples include bond issuances by companies or governments.

A secondary market is for buying and selling securities that have already been issued. For example, a stock exchange is a secondary market.

1-8 Contrast and compare trading in face-to-face auctions, dealer markets, and automated trading platforms.

Answer:
Traders meet face-to-face in an open outcry auction at a particular location. In a dealer market, there are "market makers" who keep an inventory of the stock. These dealers list the prices at which they are willing to buy or sell. In a traditional dealer market, computerized quotation systems keep track of all bid and ask quotes, but they don't actually match buyers and sellers. Instead, traders must contact a specific dealer to complete the transaction. An automated trading platform is a computer system in which buyers and sellers post their orders and then let the computer automatically determine whether a match exists. If a match exists, the computer automatically executes and reports the trade.

1-9 Describe some similarities and differences among broker-dealer networks, alternative trading systems (ATSs), and registered stock exchanges.

Answer:
Broker-dealer networks are registered with the Securities and Exchange Commission (SEC) but are much less regulated than ATS and registered stock exchanges. In a typical broker-dealer network, the broker-dealer purchases the stock being offered

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for sale by a client and then immediately sells it to another client who wished to buy the stock. The broker-dealer is the counterparty to each of the clients. The broker-dealer must report the transactions but not any information prior to the trade. An alternative trading system is a broker-dealer that registers with the SEC as an ATS. An ATS usually has an automated trading platform to match orders from clients, so the owner of the ATS is not always the counterparty, in contrast to a broker-dealer network. The ATS must report trades, but not any pre-trade information. Therefore, an ATS is often called a dark pool. Stocks can only be listed at a registered stock exchange, although they may be traded elsewhere. A stock exchange must comply with more regulations than an ATS. In addition to reporting trades, a stock exchange must also report pre-trade information regarding bids and quotes.

1-10 What are some similarities and differences between the NYSE and the NASDAQ Stock Market?

Answer:
The NYSE and NASDAQ are the two largest registered stock exchanges. These stock exchanges provide trading platforms for securities. The NYSE is a market that uses designated markets makers. NASDAQ is a dealer market where market makers are in competition with each other. The NASDAQ Stock Market has the most listings because it is willing to list smaller corporations than the NYSE. However, the NYSE's listings have a much bigger market value than NASDAQ's listed stocks.

MINI CASE

Assume that you recently graduated and have just reported to work as an investment advisor at the brokerage firm of Balik and Kiefer, Inc. One of the firm's clients is Michelle DellaTorre, a highly ranked professional tennis player who has just come to the United States from Chile. DellaTorre would like to start a company to produce and market apparel she designs. She also expects to invest substantial amounts of money through Balik and Kiefer. DellaTorre is very bright, and she would like to understand in general terms what will happen to her money. Your boss has developed the following set of questions you must answer to explain the U.S. financial system to DellaTorre.

a. Why is corporate finance important to all managers?

Answer:
Corporate finance provides the skills that are required by managers. Such as: (1) identify and select the corporate strategies and individual projects that add value to their firm; and (2) forecast the funding requirements of their company, and devise strategies for acquiring those funds.

b. Describe the organizational forms a company might have as it evolves from a start-up to a major corporation. List the advantages and disadvantages of each form.

Answer:
The three main forms of business organization are (1) sole proprietorships, (2) partnerships, and (3) corporations. In addition, several hybrid forms are popular. These hybrid forms are the limited partnership, the limited liability partnership, the professional corporation, and the S-corporation.

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The proprietorship has three important advantages: (1) it is easily and inexpensively formed, (2) it is subject to few government regulations, and (3) the business pays no corporate income taxes. The proprietorship also has three important limitations: (1) it is difficult for a proprietorship to obtain large sums of capital, (2) the proprietor has unlimited personal liability for the business's debts, and (3) the life of a proprietorship is limited to the life of the individual who created it.

The major advantage of a partnership is its low cost and ease of formation. The disadvantages are similar to those associated with proprietorships: (1) unlimited liability, (2) limited life of the organization, (3) difficulty of transferring ownership, and (4) difficulty of raising large amounts of capital. The tax treatment of a partnership is similar to that for proprietorships, which is often an advantage.

The corporate form of business has three major advantages: (1) unlimited life, (2) easy transferability of ownership interest, and (3) limited liability. While the corporate form offers significant advantages over proprietorships and partnerships, it does have two primary disadvantages: (1) corporate earnings may be subject to double taxation and (2) setting up a corporation and filing the many required state and federal reports is more complex and time-consuming than for a proprietorship or a partnership.

In a limited partnership, the limited partners are liable only for the amount of their investment in the partnership; however, the limited partners typically have no control. The limited liability partnership form of organization combines the limited liability advantage of a corporation with the tax advantages of a partnership. Professional corporations provide most of the benefits of incorporation but do not relieve the participants of professional liability. S-corporations are similar in many ways to limited liability partnerships, but LLPS frequently offer more flexibility and benefits to their owners.

c. How do corporations go public and continue to grow? What are agency problems? What is corporate governance?

Answer:
A company goes public when it sells stock to the public as the firm grows, it might issue additional stock or debt. An agency problem occurs when the managers of the firm act in their own self-interests and not in the interests of the shareholders. Corporate governance is the set of rules that control a company's behavior toward its directors, managers, employees, shareholders, creditors, customers, competitors, and community.

d. What should be the primary objective of managers?

Answer:
The corporation's primary goal is stockholder's wealth maximization, which translates to maximizing the price of the firm's common stock.

1. Do firms have any responsibilities to society at large?

   Answer:
   Firms have an ethical responsibility to provide a safe working environment, to avoid polluting the air or water, and to produce safe products. However, the most significant cost-increasing actions will have to be put on a mandatory rather than a voluntary basis to ensure that the burden falls uniformly on all businesses.

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2. Is stock price maximization good or bad for society?

   Answer:
   The same actions that maximize stock prices also benefit society. Stock price maximization requires efficient, low-cost operations that produce high-quality goods and services at the lowest possible cost. Stock price maximization requires the development of products and services that consumers want and need, so the profit motive leads to new technologies, to new products, and to new jobs. Also, stock price maximization necessitates efficient and courteous service, adequate stocks of merchandise, and well-located business establishments. All these factors are necessary to generate sales revenues, which are necessary to generate profits.

3. Should firms behave ethically?

   Answer:
   Yes, results of a recent study indicate that the executives of most major firms in the United States believe that firms do try to maintain high ethical standards in all of their business dealings. Furthermore, most executives believe that there is a positive correlation between ethics and long-run profitability. Conflicts often arise between profits and ethics. Companies must deal with these conflicts on a regular basis, and a failure to handle the situation properly can lead to huge product liability suits and even can lead to bankruptcy. There is no room for unethical behavior in the business world.

e. What three aspects of cash flows affect the value of any investment?

   Answer:
   (1) amount of expected cash flows, (2) timing of the cash flow stream, and (3) riskiness of the cash flows

f. What are free cash flows?

   Answer:
   Free cash flows are the cash flows available for distribution to all investors (stockholders and creditors) after paying expenses (including taxes) and making the necessary investments to support growth.

   FCF = Sales revenues – Operating costs - Operating taxes
   – Required investments in Operating Capital

g. What is the weighted average cost of capital?

   Answer:
   The weighted average cost of capital (WACC) is the average rate of return required by all of the company's investors (stockholders and creditors). It is affected by the firm's capital structure, interest rates, the firm's risk, and the market's overall attitude toward risk.

h. How do free cash flows and the weighted average cost of capital interact to determine a firm's intrinsic value?

   Answer:
   A firm's intrinsic value is the sum of all future expected free cash flows (FCFs), converted into today's dollars.

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$$\text{Value} = \frac{FCF_1}{(1+WACC)^1} + \frac{FCF_2}{(1+WACC)^2} + \ldots \frac{FCF_\infty}{(1+WACC)^\infty}$$

i. Who are the providers (savers) and users (borrowers) of capital? How is capital transferred between savers and borrowers?

Answer:
Households are net savers.

Most governments are net borrowers. The United States, Italy, and France have been net borrowers each year. A relatively small number of countries during this period were not net borrowers but instead were net lenders. These countries include Norway (borrowed 1 year), South Korea (borrowed 6 years), and Luxembourg (borrowed in 5 years).

Non-financial corporations are net borrowers.

Financial corporations (i.e., financial intermediaries including banks) are slightly net borrowers, but they are almost breakeven.

Capital is transferred through: (1) direct transfer (e.g., corporation issues commercial paper to insurance company), (2) an investment banking house (e.g., IPO, seasoned equity offering, or debt placement), and (3) a financial intermediary (e.g., individual deposits money in bank, bank makes commercial loan to a company).

j. What is a required rate of return? What components make up the required rates of return on debt and stocks? What is the cost of debt and what is the cost of equity?

Answer:
A required rate of return is the rate that an investor expects from an investment in order to compensate for the risk involved in investment. An investor's expected rate of return is comprised of expected payments to the investor and expected changes in the investment's value.

For debt, the lender's expected rate of return consists of expected interest payments and expected changes in the debt's value.

For stock, the shareholder's expected rate of return consists of expected dividend payments and expected changes in the stock's price.

Providing the required expected returns to lenders and shareholders is usually difficult and costly. Therefore, the required expected rate of return on debt is also called the cost of debt and the required expected rate of return on equity is also called the cost of equity.

In other words, the required rate of return on a source of capital is equal to the cost of using the capital.

k. What are some economic conditions that affect interest rates, which subsequently affect required rates of return?

Answer:
Interest rates are influenced by (1) Federal Reserve policy, (2) the federal budget deficit or surplus, (3) the level of business activity, and (4) foreign trade balances.

(1) Federal Reserve Policy: The Federal Reserve sets a target interest rate and often acts to keep interest rates close to the target. If the Federal Reserve wishes to keep interest rates low, then it usually implements open market operations. The Fed will purchase Treasury securities held by banks, which increases the demand

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for Treasury securities, which in turn increases the prices of Treasury securities. When the price of any bond goes up and the payments remain unchanged, the bond's rate of return goes down.

If the Fed wishes to increase interest rates, it reverses this policy and sells Treasury securities. This increases supply, which causes the prices of Treasury securities to fall. When the price goes down and the payments remain unchanged, the subsequent rate of return goes up.

(2) Federal Budget Deficits or Surpluses: A budget deficit occurs when the federal government spends more than it collects from tax revenues. To fund excess spending, the government must either borrow or increase the money supply. The government borrows by issuing new Treasury securities (or by selling ones that it had previously repurchased). This creates a greater supply of Treasury securities than currently is demanded, which causes a decrease in prices of Treasury securities until there is no more excess supply. When the price of a bond goes down and the payments remain unchanged, the rate of return (i.e., the interest rate) goes up.

If a miracle were to occur and the government had a surplus, then the government could repurchase some of its debt. This demand for Treasury securities would cause their prices to go up, which would reduce their rate of return.

(3) Level of Business Activity: An increase in the level of business activity means that the demand for borrowing also increases. This creates a temporary imbalance in which the supply of loans is less than the demand for loans. When supply exceeds demand, the "price" must change until supply and demand are equal. In this situation, the interest rate will increase until the demand decreases and the supply increases to the point that both are equal.

The reverse is true if a decrease in the level of business activity reduces the demand for loans. If the interest rate doesn't fall, the supply of loans will exceed the demand for loans. Therefore, the interest rate must fall until the supply and demand for loans are equal.

(4) Foreign Trade Deficits or Surpluses: A foreign trade deficit occurs when a country imports more than it exports. If people and companies in the United States import more goods and services than they export, then they must spend more money on the imports than they make on the exports. The U.S. companies and individuals usually borrow to finance this additional net spending. Higher demand for borrowing will cause interest rates to go up, all else held equal. The reverse is true for a country with foreign trade surpluses.

l. What four fundamental factors affect required rates of return?

Answer:
The required rate of return depends on these four fundamental factors: (1) production opportunities, (2) time preferences for consumption, (3) risk, and (4) inflation.

Production opportunities are the cash-generating activity that require cash in the present but have the ability to generate more cash in future. The higher the production opportunities, the more cash will be demanded now.

Time preference for consumption refers to consumers' preferences for current consumption versus savings for future consumption: consumers with low preferences for current consumption will be willing to lend at a lower rate than consumers with a high preference for current consumption.

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Inflation refers to the tendency of prices to rise, and the higher the expected rate of inflation, the larger the required rate of return.

Risk, in a money and capital market context, refers to the chance that the future cash flows will not be as high as expected—the higher the perceived default risk, the higher will be the required rate of return.

Risk is also linked to the maturity and liquidity of a security. The longer the maturity and the less liquid (marketable) the security, the higher the required rate of return, other things constant.

m. What are financial instruments? Describe the major types of financial instruments with respect to risk, original maturity, and rates of return.

Answer:
Financial instruments are documents (either on paper or on computers) with contractual obligations. Some are short term (i.e., they mature within a year) and have low default risk, such as U.S. Treasury bills, commercial paper, and CDs. Short-term financial instruments usually have low risk and low rates of return. Commercial loans (which have maturities up to 7 years) have rates that are usually tied to the prime rate (i.e., the rate that U.S. banks charge to their best customers) or SOFR (Secured Overnight Financing Rate, which is based on actual overnight loans that use Treasury securities as collateral). U.S. Treasury notes and bonds have maturities from 2 to 30 years; they have no default risk. Mortgages have maturities up to 30 years. Municipal bonds have maturities of up to 30 years; their interest is exempt from most taxes. Corporate bonds have maturities up to 40 years. Municipal and corporate bonds are subject to default risk. Some preferred stocks have no maturity date; some do have a specific maturity date. Common stock has no maturity date and is riskier than preferred stock.

n. What is a financial institution? List some financial institutions.

Answer:
A financial institution acts as an intermediary between providers of funds and users of funds and provides; in other words, a financial institution facilitates transfers of capital. There are many types of financial institutions, including commercial banks, savings and loan associations (S&Ls), mutual savings banks, credit unions, life insurance companies, mutual fund companies, pension funds, hedge funds, and private equity funds.

Following are definitions of these institutions:

1. Commercial banks: Financial intermediaries whose primary purpose is to take deposits and make loans to businesses and individuals.
2. S&Ls: Financial institutions that accept deposits from small savers and lend this money to homeowners and consumers.
3. Mutual savings banks: Similar to S&Ls, but they operate primarily in the northeastern states.
4. Credit unions: Cooperative associations that take deposits from members and then make loans only to other members, generally for auto purchases, home-improvement loans, and home mortgages.
5. Life insurance companies: Take premiums from customers, invest these funds in stocks, bonds, real estate, and mortgages, and then make payments to beneficiaries.

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6. Mutual fund companies: Corporations that sell shares in the fund and use the proceeds to buy stocks, long-term bonds, or short-term debt instruments. The resulting dividends, interest, and capital gains are distributed to the fund's shareholders after the deduction of operating expenses. Some funds specialize in certain types of securities, such as growth stocks, international stocks, or municipal bonds.
7. Pension funds: Retirement plans funded completely or partially by a corporation or government agency.
8. Hedge funds: Raise money from institutional investors and a relatively small number of high-net-worth individuals, and then engage in a variety of investment activities.
9. Private equity funds: Raise money from institutional investors and a relatively small number of high-net-worth individuals. Private equity funds primarily invest in stock of private companies.

o. What is a financial market? What are some types of financial markets?

Answer:
A market is a method of exchanging one asset (usually cash) for another asset. Some types of markets are: physical assets versus financial assets; spot versus future markets; money versus capital markets; and primary versus secondary markets.

Physical asset markets include markets for such products as wheat, autos, real estate, computers, and machinery. Financial asset markets include stock markets, bond markets, and other means of trading financial instruments.

Spot markets require payment when the transaction takes place, such as purchases of groceries, stocks, and bonds. Futures markets are for futures contracts in which no money changes hands until the price of the underlying asset changes. There are futures markets for many commodities, including agricultural products like wheat or oil.

Financial assets with an original maturity of less than a year are traded in money markets; those with an original maturity of more than a year trade in capital markets.

Primary markets are where new securities are created and first sold. Secondary markets are for trading securities that have already been created.

p. What are some differences between primary markets and secondary markets? Why are secondary markets important?

Answer:
Primary markets are where new securities are created and sold, providing cash to the issuer of the security. For example, new shares of stock are created when a company has an IPO. New shares can also be created if a company sells additional shares to the public (this is called a secondary offering). Another example of primary markets is a company issuing (i.e., selling) bonds.

After a new security has been created, it can be sold in a secondary market. For example, previously issued shares of stock are traded on stock exchanges. Notice that the original issuer of the security is not involved in a secondary market transaction.

One reason that secondary markets are important is that they allow entrepreneurs to reap rewards for their efforts in creating a company. They can do this by selling some shares of their own stock in the secondary market. Then they can use the cash they receive from the secondary market transaction for other purposes. For example, they might buy a new car, buy a better house, or go on a scuba diving trip.

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Secondary markets also allow investors to buy or sell stock if they need a change. For example, many investors have a target for the percent of their wealth that is invested in stock or bonds. If stock prices increase, investors can use secondary markets to rebalance their portfolios to get back to the target.

Secondary markets allow investors to determine the value of their investments by looking at current prices of stocks.

q. What are the three major U.S. stock exchanges? Compare and contrast them with respect to the number of listed stocks and the market values of the listed stocks.

Answer:
The three major exchanges are the New York Stock Exchange (NYSE), NASDAQ, and the NYSE American Exchange. Their listing and market value of listings are shown below.

Exchange	Number of Listings	Market Value of Listings (Trillions)	Percent of Total Market Value
NYSE	1,912	$44.8	56.5%
NASDAQ	1,697	34.3	43.4%
NYSE American	54	0.1	0.1%
Total	3,663	$79.3	100%

r. What is a full-service brokerage account? What are two other types of brokerage accounts?

Answer:
A client at a full-service broker usually can call a person at the firm to discuss their portfolio and get advice. A client with a full-service broker usually must pay fees to open the account, pay annual fees to maintain the account, and pay additional commissions for each stock purchase of sale. The minimum balance required for a full-service brokerage account is usually between $50,000 to $100,000.

Two other types of accounts are online-only accounts and robo-advisor accounts. An online-only account is much less expensive than a full-service account and requires a much lower minimum balance, but it offers significantly fewer services. A customer doesn't have access to a personal broker, but an online account has lots of educational material available for its account holders.

Another type of online-only account provides a robo-advisor, which is a fully automated computer system that automatically makes trades on a client's behalf based on the answers to a detailed questionnaire that the client filled out that has questions about the client's financial situation, goals, and degrees of risk tolerance.

s. What are the differences between market orders and limit orders? Explain how orders from buyers and sellers are matched and executed at open outcry auctions, in dealer markets, and by automated trading platforms.

Answer:
Market orders instruct the broker to transact as quickly as possible at the current price. Limit orders instruct brokers to transact only if a specific situation occurs. For example, buy 100 shares if the price drops to $50 or below during the next 2 hours.

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Open outcry auctions have a physical location at which human traders meet face-to-face and execute trades. For example, there is still some stock trading on the floor of the NYSE. Derivatives and options also trade at physical exchanges.

Dealers (i.e., market makers) buy from and sell to clients from an inventory of stocks. Orders are usually, but not always, automatically matched by computers.

Automated trading platforms match orders and execute trades automatically.

t. What is a broker-dealer network? What is an alternative trading system (ATS)? What is a Trade Reporting Facility (TRF)?

Answer:
Broker-dealer networks are registered with the SEC but are much less regulated than registered stock exchanges. In a typical broker-dealer network, the broker-dealer purchases the stock being offered for sale by a client and then immediately sells it to another client who wished to buy the stock. Because the broker-dealer is the counterparty to each of the clients, this is called internalization.

The broker-dealer must report the transactions but not any information prior to the trade. Trades in broker-dealer networks are called “off exchange” or over-the-counter (OTC). Trades can be with individuals (called retail trades) or with institutions. Large trades (10,000 shares or more) are called block trades and are sometimes called “upstairs” trades.

An alternative trading system (ATS) is a broker-dealer that registers with the SEC as an ATS. An ATS usually has an automated trading platform to match orders from clients, so the owner of the ATS is not always the counterparty, in contrast to a broker-dealer network. The ATS must report trades but not any pre-trade information. Therefore, an ATS is often called a dark pool.

Off-exchange trades are reported to the Trade Reporting Facility (TRF) for the exchange,

The situation is very different today. Both exchanges have about the same number of listed stocks: 1,912 for the NYSE and 1,697 for NASDAQ. The total market values of stocks listed on each exchange are also similar: $44 trillion for the NYSE and $34 trillion for NASDAQ.

u. What are the dollar volumes of trading at major stock trading venues, including Trade Reporting Facilities?

Answer:
Trade Reporting Facilities have the most dollar volume of trading, as shown in the table below.

Trading Venues	Dollar Volume (Trillions)	Percentage of Dollar Volume
Off-Exchange Trade Reporting Facilities (TRF)	$54	42%
NASDAQ	25	29%
Intercontinental Exchange	26	21%
Cboe Global Markets	15	12%
Other Exchanges	8	6%

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Trading Venues	Dollar Volume (Trillions)	Percentage of Dollar Volume
Total	$128	100%

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