Financial Management and Analysis

Workbook

Step-by-Step Exercises and Tests to Help You Master Financial Management and Analysis

PAMELA P. PETERSON
FRANK J. FABOZZI
WENDY D. HABEGGER

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PART One

Questions and Problems
Introduction to Financial Management and Analysis

FILL IN THE BLANKS

Refer to Chapter 1, pages 3–24 in Financial Management and Analysis.

1. ______________ is the application of economic principles and concepts to business decisions and problem solving. It can be divided into three categories: ______________, ______________, and ______________. ______________ is the management of a firm’s cash flow to increase shareholder wealth.

2. ______________ and ______________ are decisions made concerning financial management. Financial managers compare potential ______________ and ______________, otherwise known as expected returns. The uncertainty inherent with these returns is referred to as the ______________.
3. The evaluation of the financial condition and operating performance of a business firm, industry, and economy, and future forecasting of its condition and performance is known as ______________. It is also used to evaluate specific ______________ and ______________ within a firm and the overall ______________ and ______________ outside the firm.

4. ______________, ______________, and ______________ are the three major forms of business organizations. The ______________ provides the largest percentage of U.S. business incomes, but the majority of businesses are ______________. Proprietors and ______________ partners are liable for only business debts, whereas ______________ partners and the owners of a(n) ______________ stand to lose only the initial investment.

5. The ______________ are the contract between the shareholders and corporation and authorizes the corporation to issue stock. The ______________ of a corporation are rules of governance. The owners of a corporation are also called the ______________. They elect a(n) ______________ for representative purposes in the major business decisions. A(n) ______________ corporation is owned by a multitude of share holders while a(n) ______________ is owned by a few shareholders. Corporations whose shares are publicly traded must file financial statements with the ______________.
6. ______________ and ______________ business income are subject to the personal income tax rate of the individual owners, whereas a(n) ______________ pays taxes as a separate legal entity. Cash distributions to shareholders are also taxed as personal income of the owner, leading to what is known as ______________.

7. A hybrid form of business is a(n) ______________ and it combines the best features of a(n) ______________ and a(n) ______________. These types of businesses are treated as a partnership for ______________ purposes, while the owners are not ______________ for firm obligations. A(n) ______________ is a popular form of business that is commenced by a group of persons or entities for a specific business activity in which the relationship only lasts the length of the activity. It may also be structured as a(n) ______________ or a(n) ______________ and is treated according to how it is structured.

8. The single financial goal is to maximize the ______________ wealth, which means to maximize the ______________ of a share of stock for a corporation. The market value of shareholders’ equity is the product of the price of ______________ and the number of ______________, which are the total number of shares owned by shareholders. The stock price is equal to the ______________ of all expected future cash flows to owners. In a(n) ______________, the price of a stock reflects all publicly available information so the investor is unlikely to earn ______________ profits by trading on information already known to the public. The only
way for an investor to increase the return is to increase the ____________.

9. ____________ profit is the difference between revenues and costs, where costs are the unambiguous costs of doing business. ____________ profits include both explicit and implicit costs. Maximization of ____________ profits maximizes owners’ wealth.

10. A(n) ____________ is a person acting in the best interest of another person or group of people. The ____________ is the person or group being represented. Three types of agency costs are ____________, ____________, and ____________. Interests of management and shareholders are aligned when executive compensation packages are designed to encourage ____________-term investment by managers in the stock of the corporation. In particular, ____________ and ____________ might be the better forms of compensation as they require the manager to be an owner in the corporation and hold stock for a specified time.
SHORT ANSWER QUESTIONS

Refer to Chapter 1, pages 3–24 in Financial Management and Analysis.

1. According to market efficiency, if investors who trade on publicly available information are unlikely to earn abnormal profits, then should small investors not invest in the stock market?

2. What are accounting profits or economic profits and which one should an investor be more concerned with?
3. Why might a restricted option compensation program be more effective than a performance shares program in motivating managers to maximize the wealth of the owners?

4. An article in today’s Wall Street Journal states a certain drug company has received approval from the Federal Food and Drug Administration to market a new medication for people with heart disease. You believe you should call your broker and invest in the stock of this company immediately because it will undoubtedly increase in value. Given what you know about efficient markets, what advice do you suspect you will receive from your broker?
5. Annie and Alice invested $50,000 and $25,000 respectively in a business enterprise. During the first year of operation, the business had taxable income of $12,000.

a. If the business is organized as a partnership, with profits and losses shared based on the proportion of each partner’s original investment, how much of the income will each claim on her personal tax return?

b. After the initial year of success, a weakened economy caused the business to falter. Following four successive years of losses, the assets of the business were $30,000 and the debts were $50,000. The two owners decided to liquidate the business. What are the financial consequences of the dissolution of the business to each owner?
c. If the business had been a limited partnership, with Annie being the general partner who actively ran the business, what would the financial consequences be for each owner?

d. If the business had been a corporation with ownership interests based on the proportion of each woman’s initial investment, what would the financial consequences be for each owner?
1. A(n) ______________ is a claim on future cash flows. A(n) ______________ is a where securities are bought and sold. Securities are classified into three groups: ______________ securities, ______________ securities, and ______________ securities. ______________ securities have a one year or less original maturity. ______________ securities are long-term securities issued by corporations and governments.

2. ______________ is short-term debt of a large corporation with good credit standing. A(n) ______________ is the U.S. government’s short-term debt. ______________ certificates of deposit are issued by large ______________ and are often transferred among investors.

3. ______________ is the ownership interest in a corporation. ______________ are the called the residual owners of the firm. Common stock has ______________ maturity. Cash payments to shareholders are called ______________. ______________ stockholders are guaranteed a fixed dividend, but are not residual owners of the firm.
4. On a debt security, the ___________ refers to the borrowed monetary amount. The ___________ are periodic payments. Debt securities with less than 10 years to maturity are called ___________. ___________ bonds are debt of state and local governments. These bonds interest payments are exempted from ___________ taxes. ___________ bonds are backed by the issuer’s taxing power. ___________ bonds are backed by the proceeds of a specific project. Bond trading is mostly done in the ___________ market, although small orders are traded on ___________.

5. The ___________ market is where new capital is raised, whereas the ___________ market is where a shift in funds occurs between investors. Capital is raised in the primary market through ___________, which are direct sales of the issues to investors, and through ___________ agreements, which are when investment bankers purchase the securities for immediate resale to the public.

6. ___________ are actual physical markets in which shares are traded. Transactions in the ___________ market occur over computers and phone lines. The organized exchanges in the U.S. are ___________ owned. Exchanges in other countries are often controlled by ___________ or ___________. There is U.S. government regulation of the financial markets. In particular, The Securities Act of 1933 requires that new securities be
The Securities and Exchange Act of 1934 established the ____________ Commission.

7. The largest exchange in the United States in terms of market value of the shares traded is the _____________. The other national exchange is the _____________. There are seven ____________ exchanges that trade ____________ listed securities. The largest over-the-counter market for common stock is known as ____________ and it is a computerized quotation system. The larger, most actively traded securities in NASDAQ are included in the _____________. The NASDAQ system is the ____________ largest market for securities. The Dow Jones Industrial Average is computed using ____________ stocks. The S&P 500 is an index of ____________ companies’ stocks.

8. A(n) ____________ market is one where asset prices quickly reflect all information that is available. ____________ form market efficiency means current prices reflect all past prices so investors cannot earn ____________ profits based on past price movements. The ____________ form of market efficiency indicates security prices incorporate all information that is available to the public. Empirical evidence suggests that U.S. security markets are ____________ form efficient. ____________ form market efficiency implies investors will not earn abnormal profits trading on information that is private. Recent events suggest abnormal profits may be gained by ____________ trading.
SHORT ANSWER QUESTIONS

Refer to Chapter 2, pages 27–47 in *Financial Management and Analysis*.

1. How do stocks differ from bonds?

2. How do common stocks differ from preferred stock?
3. What are the similar and differing characteristics between general obligation bonds and revenue bonds?

4. What type of investor would prefer stocks to bonds and why? (Consider the answers for questions 1, 2, and 3.)
5. How do exchanges and over-the-counter markets differ?
Financial Institutions and the Cost of Money

FILL IN THE BLANKS

Refer to Chapter 3, pages 49–80 in Financial Management and Analysis.

1. In the United States, there is a central monetary authority known as the ____________ and it acts as the U.S. ____________ bank. The main function of a central bank is to implement ____________ policy which controls the availability of ____________ funds.

2. The interaction between the ____________ and ____________ for currency influences the ____________ rates paid to ____________ funds and the amount of ____________ earned on ____________ funds. The ____________ for money is dictated by the availability of ____________ opportunities. The ____________ of money is determined by a nation’s central bank’s actions.
3. ______________ cash, sometimes called ______________, ______________, or ______________, is money created ______________ and functions beyond the scope of banks, checks, coin, and currency overseen by the ______________. Electronic cash is rapidly gaining in popularity over more traditional ______________, ______________, and ______________. It is more convenient than other forms of money and results in a reduction of ______________ costs for businesses.

4. ______________ provide services such as financial intermediaries that alter ______________ assets purchased in the market and reformulate them into more desirable ______________. Financial institutions provide ______________, ______________, and ______________ advice and manage ______________ for all types of investors.

5. Corporate financing involves ______________ funds for a bank’s customers and providing ______________ on such matters as ______________ for obtaining funds, corporate ______________, divestitures, and ______________.

6. Banks are ______________ and ______________ by several ______________ and ______________ governments. An encompassing ______________ in bank regulation in recent years has been the ______________ Act of 1999, also known as the ______________ Act. It allows a financial holding company to engage in ______________ and ______________ securities.
7. The ____________ market makes available the ____________ issued ____________ by corporations and other entities seeking to ____________ funds. The firm issuing a security is the ____________. The investors working with issuers to ____________ these securities are called ____________.

8. ____________ activities are regulated by the ____________ Commission. The Securities Act of 1933 governs ____________ and requires that a(n) ____________ statement and ____________ statements be filed with the SEC.

9. Money is not a free ____________. Those who ____________ money are willing to ____________ for it and those who ____________ money expect to be ____________. The ____________ is the cost of money; the ____________ the demand for money. The ____________ the interest rate; the ____________ the demand, the ____________ the interest rate.

10. Bonds are traded in the ____________ market, thus the ____________ of the bond may change as the supply and demand for money fluctuates. The ____________ paid on the bond remains the same, but the bond’s ____________ changes. Most bonds are issued at their ____________ or par value, meaning that when issued, the ____________ is frequently equal to the ____________ rate.
11. The three U.S. commercial rating companies that rate an issuer’s ____________ are ____________ Investors Service, ____________ Corporation, and ____________ Ratings. A(n) ____________ indicates a low credit risk which further translates into a good chance of future payments. The highest-grade bonds are those rated ____________. Bond issues assigned a rating in the top four categories are ____________-grade bonds and issues rated below the top four categories are ____________-grade bonds, or ____________-yield bonds or ____________ bonds.

12. Bonds can have option provisions or a(n) ____________ option that gives the ____________ and/or the ____________ an option to take some action against the other party. The most common type of option in a bond issue is a(n) ____________ provision. This provision gives the right to ____________ the debt, either in full or only in part, before the maturity date. An issue may include a(n) ____________ provision allowing the bondholder to change the bond’s maturity. It allows the bondholder the right to ____________ the issue back to the issuer at par value on certain dates. A(n) ____________ bond gives the right to exchange the bond for common stock.

13. Two major theories used to explain the observed shapes of the ____________ curve are the ____________ theory (which includes the ____________ expectations theory, the ____________ theory, and the ____________ theory) and the market ____________ theory.
SHORT ANSWER QUESTIONS

Refer to Chapter 3, pages 49–80 in Financial Management and Analysis.

1. Explain the function of financial intermediaries.

2. Describe the different types and purposes of the different deposit institutions.
3. How do nondeposit financial institutions manage their financial assets?

4. What are the components of the interest rate and the factors affecting these components?
5. What is the relationship between Treasury spot rates and forward rates? Why are forward rates also called *hedge-able rates*?

6. What is the purpose of the term structure of interest rates?
FILL IN THE BLANKS

Refer to Chapter 4, pages 83–104 in *Financial Management and Analysis*.

1. A(n) ______________ contract requires a participant to either ______________ or ______________ something, also known as the ______________, at a specified future date at a set price. The future price agreed upon is the ______________ price. The specified date on which the transaction occurs is the ______________ date.

2. The basic ______________ function of futures markets is to offer prospects to ______________ against the ______________ of price movements. ______________ contracts are formed by ______________ and involve traditional ______________ commodities, imported food-stuffs, and ______________ commodities. Instruments-based futures contracts are classified as ______________ index futures, ______________ rate futures, and ______________ futures.
3. ______________ are associated with futures and provide several functions such as ______________ that two parties will carry out a preagreed transaction. ______________ risk is the risk that the other party will default on their obligation on the ______________ date. Due to the use of a clearinghouse, worry is removed from the parties to a(n) ______________ contract.

4. In a futures contract, the investor must ______________ a(n) ______________ dollar amount per contract that the exchange dictates. Called the ______________ margin, it is required as deposit for the contract. The ______________ of the futures contract ______________ and the investor’s ______________ changes. Recording the ______________ value of a position is called ______________ a position to ______________ or simply ______________ to ______________.

5. When investors assume market positions by ______________ a futures contract, the investor is in a(n) ______________ position. On the other hand, if the investor’s opening position is the ______________ of a futures contract, the investor is in a(n) ______________ position. A futures contract’s ______________ will recognize a(n) ______________ if the futures price ______________; the futures contract’s ______________ will recognize a(n) ______________ if the futures price ______________.

6. The ______________ of the option grants the ______________ of the option the right to purchase from
or ______________ to the writer an asset at a specified ______________ within a specified ______________ of time. The option price is also called the option ______________. The price at which the asset is ______________ is the strike price. The date after which an option is void is called the ______________ date.

7. Options exercised at ______________ time up to and including the ______________ date are a(n) ______________ option. Options exercised only at the ______________ date are ______________ options. An option that can be exercised ______________ the expiration date but only on ______________ dates is called a(n) ______________ option.

8. The option price is a reflection of the option’s ______________ value. Any amount over intrinsic value is referred to as the ______________ premium. The intrinsic value of an option is the ______________ value of the option if it is ______________ immediately.

9. In a(n) ______________ the counterparties agree to exchange ______________ payments. The ______________ amount of the payments exchanged is based on the ______________ amount. ______________ typically used by ______________ companies are ______________ rate swaps, ______________ swaps, and ______________ swaps. A swap has the ______________ and ______________ profile of a package of ______________ contracts.
10. A(n) ______________ is an agreement whereby the ______________ agrees to pay the ______________ when a designated reference ______________ a predetermined level. A(n) ______________ is an agreement whereby the ______________ agrees to pay the ______________ when a designated reference is ______________ than a predetermined level. The designated reference could be a specific ______________ rate or a(n) ______________ price. A(n) ______________ is equivalent to a package of ______________ options; a(n) ______________ is equivalent to a package of ______________ options.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 4, pages 83–104 in *Financial Management and Analysis*.

1. What are derivatives instruments and why are they useful?
2. How are futures liquidated?

3. What are the differences between futures contracts and forward contracts?
4. What are the differences between options and futures contracts?

5. What is the interpretation of a swap?
PROBLEMS

Refer to Chapter 4, pages 83–104 in *Financial Management and Analysis*.

1. Alex and Adrienne take positions in a futures contract. Alex is the buyer of the futures contract and Adrienne is the seller of the futures contract. If the futures price is $100, what are the possible outcomes for the market participants if Asset X increases to $135? If Asset X decreases to $50?
2. Illustrate the characteristics of a call and a put option contract given the following information: Lydia buys an American call (put) option for $3 with the following terms: The underlying is one unit of Asset X with an exercise price of $75 and an expiration date of three months from now.

3. Illustrate the purchase of a call option on Asset X that expires in two months and has an exercise price of $40 and an option price of $2. What is the profit or loss for the investor who purchases this call option and holds it until its expiration date?
4. If the exercise price for a call option is $100 and the current asset price is $110, what is the intrinsic value? What is the intrinsic value for a put option with an exercise price of $100 and a current asset price of $90?

5. Explain how futures are used to manage risk for a farmer who grows corn and a canning company who buys the corn for processing and selling in grocery stores.
FILL IN THE BLANKS

Refer to Chapter 5, pages 107–122 in Financial Management and Analysis.

1. In the United States, __________ passes the tax __________ that comprises the __________. The __________, a part of the Treasury Department, __________ these laws, __________ the details, and __________ them. The __________ does this by __________ and __________ tax forms, __________ tax payments, __________ the law in its regulations, and providing __________ in some situations.

2. The U.S. __________ originated in __________ with a(n) __________ tax on corporate income but has since become very __________. The financial __________ cannot simply assume that the tax rate in existence __________ will be the same in the __________. The __________-tax __________ of a firm over time must take into consideration the __________ tax rates.
3. The ______________ tax rate is the rate that ______________ the tax ______________ and is the rate at which the next ______________ of income would be taxed. The ______________ tax rate is the ______________ of the tax ______________ to the taxable income. A(n) ______________ tax is one that levies a higher ______________ tax rate on ______________ incomes. A company’s ______________ or ______________ decision is likely to affect ______________ income, and hence cash flow, through the ______________ tax rate.

4. Corporate income distributed to ______________ as ______________ is taxed ______________, first as ______________ income and then as ______________ income, and then if the shareholder is another ______________, it could be taxed a(n) ______________ time. To minimize the chance of ______________ or more taxation of the same income, the tax laws permit a(n) ______________ deduction. This is when a corporate ______________ of ______________ may deduct a portion of its ______________ income from its ______________ income. The ______________ deduction ______________ the after-tax ______________ of a corporation ______________ in another corporation’s stock.

5. The two methods of depreciation available to business taxpayers are a(n) ______________ method and a(n) ______________ method. A firm can select a method of ______________ that is based on the expected ______________ of ______________ depreciation of its assets
and the ______________ on reported ______________. The current depreciation tax laws are the result of an ongoing trend to create more ______________ in ______________ methods among business ______________ while at the same time simplifying the ______________ and allowing ______________ depreciation and ______________ asset lives.

6. According to the tax law, a(n) ______________ is specifically a(n) ______________ gain that results when an asset is ______________ for more than was ______________ for it. Congress has traditionally granted special ______________ for capital gains through ______________ effective ______________ rates.

7. ______________ tax credit (______________) was intended to ______________ investment spending by directly ______________ the ______________ income tax. ______________ can be ______________ at any time that ______________ feels investment ______________ needs to be stimulated. Whereas ______________ and ______________ both ______________ taxes payable, a(n) ______________ reduces taxable income and thus ______________ reduces the taxes paid.

8. A(n) ______________ is an excess of business ______________ over business gross ______________ in a tax year. The IRC allows businesses to carry ______________ a net operating loss to ______________ years and to carry ______________ the loss to ______________ years to ______________ the
taxes payable for those years. The current tax law permits net operating losses of corporations to be carried ____________ three years from the year of the loss and carried ____________ for 15 years.

9. Countries typically tax resident corporations on ____________ income, regardless of whether the ____________ is repatriated. ____________ corporations, that is, corporations whose corporate ____________ and place of ____________ are outside the country, are typically subject only to ____________ taxes derived from within the country. The ____________ rates vary significantly from country to country and some impose ____________ tax or ____________ tax rates. These countries are referred to as tax ____________.

**SHORT ANSWER QUESTIONS**


1. In the United States there are several kinds of taxes imposed. What are they and what is their purpose?
2. How does dividend income affect investors? How does dividend income affect the corporation?

3. What are the features of the modified accelerated cost recovery system (MACRS) and how is this different from the straight-line method?
4. Should financial analysts be concerned with taxes? Should financial analysts be concerned with depreciation?

**PROBLEMS**


1. ABC Corporation purchased a new computer system for $56,000 in 2000. The computer is classified as a seven-year property. What is the depreciation allowance for each year if:

   a. Straight-line depreciation method is used?
b. MACRS depreciation method is used?

3. What is the depreciation tax shield for ABC Corporation in problem 1 if ABC uses the MACRS depreciation method and has a corporate tax rate of 30%?
4. DEF Incorporated had $4 million in taxable income from operations and another $500,000 in dividend income that qualified for an 80% dividends-received deduction. If the firm is taxed at a flat rate of 35%, what is its tax liability?

5. GHI Company had a loss of $2 million for 2002. Calculate the amount of refund of prior taxes GHI can receive and how much loss can be carried forward, assuming the carry back/carry over rule will be utilized. The firm had income and paid taxes in the four years prior of:

<table>
<thead>
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<th>Year</th>
<th>Taxable Income</th>
<th>Taxes Paid (35% of Taxable Income)</th>
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<tr>
<td>1998</td>
<td>$3,000,000</td>
<td>$1,050,000</td>
</tr>
<tr>
<td>1999</td>
<td>700,000</td>
<td>245,000</td>
</tr>
<tr>
<td>2000</td>
<td>500,000</td>
<td>175,000</td>
</tr>
<tr>
<td>2001</td>
<td>250,000</td>
<td>87,500</td>
</tr>
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1. ___________ statements are summaries of the ____________, ____________, and ____________ activities of a business. They provide useful ___________ to both ___________ and ___________ in making credit, investment, and other business decisions by allowing them to ___________ a company’s future ___________ and therefore the ___________ flows expected to result from those ___________.

2. The accounting ___________ in ___________ statements are prepared by the firm’s ___________ according to a set of standards, referred to as ___________ or ___________. The ___________ sheet, or statement of financial ___________, or statement of financial ___________, is a summary of the ____________, ____________, and ____________ of a business at a particular point in time—usually the end of the firm’s ___________ year, thus reflecting ___________ costs.
3. The ______________ sheet contains ______________—the resources of the business enterprise, such as plant and equipment that are used to generate ______________ benefits such as cash ______________; ______________—obligations of the business and commitments to ______________ in the form of future cash ______________; and ______________, also called ______________ equity or ______________ equity, reflecting ______________ of the firm that is not owed to creditors.

4. ______________ are made up of ______________ liabilities, ______________ liabilities, and ______________ taxes. Current liabilities are obligations that must be paid within one ______________ cycle or ______________ year, whichever is longer. ______________ payable, ______________ expenses, ______________ of long-term debt, and ______________ loans are current liabilities. ______________ liabilities are obligations that must be paid over a period ______________ one year. They include ______________, ______________, ______________ obligations, and ______________ obligations.

5. ______________ is the owner’s ______________ in the company. For a corporation, ownership is represented by ______________ stock and ______________ stock. Shareholders’ equity is also referred to as the ______________ of equity, as this is the value of ______________ according to the records in the accounting books. The book value of equity is the ______________ total of ______________ earnings, ______________ stock, and (if applicable) ______________
stock and it represents the equity interest of the corporation’s owners, stated in terms of ______________ costs.

6. ______________ shareholders’ equity is the product of the number of ______________ shares outstanding and the par value of the ______________; it is shown that way on the ______________. The ______________ of the equity belongs to the ______________ shareholders. It consists of three parts: ______________ stock outstanding (listed at par or at stated value), additional ______________ capital, and ______________ earnings.

7. A(n) ______________ statement is a(n) ______________ of the ______________ and ______________ of a business over a period of time, usually one month, three months, or one year. This statement also is referred to as the ______________ and ______________ statement and shows the results of the firm’s ______________ and ______________ decisions during that time.

8. The statement of ______________ is a summary over a period of time of a firm’s ______________ flows from ______________, ______________, and ______________ activities. The firm’s statement of ______________ lists separately its ______________ cash flows, ______________ cash flows, and ______________ cash flows. A firm that generates cash flows only by ______________ off its ______________ (obtaining cash flows from investments) or by ______________ more ______________ (obtaining
cash flows from financing) cannot keep that up for very long. For future prosperity the firm must be able to generate cash flows from its ______________, which is the most complex of the three.

9. Cash flow from ______________ is generally obtained ______________. The computation of the cash flows from ______________ and ______________ activities is straightforward. The cash flow from (used for) ______________ activities includes cash flow due to ______________ in plant assets, the ______________ of plant assets, ______________ of other companies, and ______________ of subsidiaries. The cash flow from (used for) ______________ activities includes cash flows due to the ______________ or ______________ of common or preferred ______________, the ______________ or ______________ of long-term ______________ securities, and the ______________ of common and preferred ______________.

10. Additional information about ______________ can be found in the statement of ______________ equity, which is a breakdown of the amounts and changes in ______________ accounts. This statement serves as a connecting link between the ______________ sheet and the ______________ statement, providing the ______________ with more detail on changes in the individual ______________ accounts. Whereas the ______________ sheet provides information on the ______________ of shares outstanding at a specific point in time, the statement of ______________ provides more detail on any changes,
including shares issued to satisfy the _____________ of stock ______________ and ______________ shares.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 6, pages 125–144 in *Financial Management and Analysis*.

1. What are the assumptions under which financial statements are created, used, and interpreted?

2. Name and describe the two categories of assets.
3. Define and provide examples of intangible assets.

4. Describe and list the labeling treatment shares receive on the balance sheet.
5. Why is it important to analyze the statement of cash flows? What does it tell an investor?

**PROBLEMS**

Refer to Chapter 6, pages 125–144 in *Financial Management and Analysis*.

1. Complete the following balance sheet:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$15,000</td>
<td>Accounts payable</td>
<td>$34,000</td>
</tr>
<tr>
<td>Inventory</td>
<td></td>
<td>Notes payable</td>
<td>3,000</td>
</tr>
<tr>
<td>Gross plant and equipment</td>
<td>50,000</td>
<td>Long-term debt</td>
<td></td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td></td>
<td>Common equity</td>
<td>12,000</td>
</tr>
<tr>
<td>Net plant and equipment</td>
<td>32,500</td>
<td>Total liabilities and equity</td>
<td>$75,000</td>
</tr>
</tbody>
</table>
2. Construct a statement of cash flows given the following information:

Common stock dividends are 40% of earnings available to common shareholders.
Earnings before taxes are $45,000.
Preferred stock dividends are $20,000.
Taxes are 30% of earnings.
3. Construct a statement of cash flows given the following information:

- $15,000 in new long-term debt is issued.
- $45,000 of common stock is repurchased.
- Common stock dividends are $10,000.
- Current liabilities are decreased by $30,000.
- Depreciation is $60,000.
- Net income is $54,000.
- Plant and equipment purchased during the period is $58,000.
FILL IN THE BLANKS

Refer to Chapter 7, pages 147–187 in Financial Management and Analysis.

1. The ______________ of money is used to equate ______________ flows at ______________ points in time. One dollar received in the ______________ is not as ______________ as a dollar received ______________ because it could be ______________ today and earn ______________. The process of calculating what one dollar today will be worth in the future is called ______________ while the reverse is ______________.

2. The amount that you are willing to ______________ today is the loan’s ______________ value. The amount that you ______________ to be ______________ at the end of the loan period is the loan’s ______________ value. Therefore, the ______________ period’s value is comprised of two parts: Future Value = ______________ value + ______________. The ______________ is compensation for the ______________ of funds for a specific period. It consists of
compensation for the ______________ of ______________
the money is borrowed and compensation for the
____________ that the amount ______________ will not be
____________ exactly as set forth in the loan agreement.

3. The ______________ valuation equation, FV = ______________,
is used to translate ______________ values into ______________
values and to translate ______________ values into
______________ values. It also can be algebraically
manipulated to solve for the ______________ rate and the
number of ______________ periods. This basic relationship
includes ______________ compounding—that is,
______________ earnings on ______________ already earned.

4. We can use ______________ mathematics to value many dif-
ferent ______________ of ______________ flows, including
______________, ______________ due, and ______________
annuities. Applying the tools to these different patterns of
cash flows requires us to take care in specifying the
______________ of the various cash flows. ______________
containing ______________ factors, ______________ factors,
______________ value ______________ factors, and
______________ value ______________ factors can be used to
reduce the computations involved in financial math.

5. When faced with a(n) ______________ of ______________
flows, we must value each ______________ flow individu-
ally, and then ______________ these individual values to
arrive at the ______________ value of the ______________
value of the series. The work can be cut a bit shorter if these
cash flows are ______________ and occur at ______________ intervals of time.

6. Valuing a(n) ______________ cash flow stream is just like valuing a(n) ______________ annuity. The ______________ annuity cash flow analysis assumes that cash flows occur at the ______________ of each period. However, it is fairly common to receive ______________ cash flows at the ______________ of the period; this is called a(n) ______________.

7. A(n) ______________ annuity has a stream of cash flows of ______________ amounts at regular periods starting at some time ______________ the end of the first ______________. With a(n) ______________ annuity, the ______________ value of the ______________ annuity is determined and then ______________ to a(n) ______________ period.
SHORT ANSWER QUESTIONS

Refer to Chapter 7, pages 147–187 in Financial Management and Analysis.

1. Why is a dollar today worth less than a dollar some time in the future?

2. How are interest rates with different compounding periods compared? Is there a method of comparison that is preferred?
PROBLEMS

Refer to Chapter 7, pages 147–187 in *Financial Management and Analysis*.

1. Using a 7.5% compounded interest rate per period, calculate the future value of a $500 investment:

   a. One period into the future

   b. Five periods into the future
c. Ten periods into the future

4. Using a 7.5% compounded interest rate per period, calculate the present value of a $500 investment to be received:

a. One period into the future

b. Five periods into the future
c. Ten periods into the future

4. If Natalie deposits $1,000 in her savings account and earns 4.5% interest per year:

   a. How much would she have after three years if she left the money in the account to earn compound interest?

   b. How much interest has she earned?
c. If she would have withdrawn the interest each year, how much total interest would she have earned?

4. What growth rate does Larry need to double his initial investment over a five-year period?
5. How long will it take Wendy’s $4,000 investment, compounded at 5% annual interest, to earn an additional $2,000?

6. Randy wants to borrow money for some home improvements. He has received several different quotes. Bank A will charge him 14.5% compounded annually, Bank B will charge him 14% compounded monthly, and his best friend will charge him 13.75% compounded continuously. Which is the better deal?
7. A credit card company advertises that it charges 2.9% interest on unpaid balances per month. What is the APR and EAR for this advertised rate?

8. What is the future value at the end of the third period of the following series of end-of-period cash flows, using an interest rate of 10% compounded per period?

<table>
<thead>
<tr>
<th>Period</th>
<th>End-of-Period Cash Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$150</td>
</tr>
<tr>
<td>1</td>
<td>$300</td>
</tr>
<tr>
<td>2</td>
<td>$225</td>
</tr>
<tr>
<td>3</td>
<td>$410</td>
</tr>
</tbody>
</table>
9. Suppose an investment promises to provide the following cash flows:

<table>
<thead>
<tr>
<th>Year</th>
<th>End-of-Year Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$2,500</td>
</tr>
<tr>
<td>2</td>
<td>$3,000</td>
</tr>
<tr>
<td>3</td>
<td>$5,000</td>
</tr>
<tr>
<td>4</td>
<td>-$2,500</td>
</tr>
</tbody>
</table>

If interest is compounded annually at 12%, what is the value of this investment at the end of Year 0?

10. Suppose that you have won the Georgia Lotto worth $48 million. Further suppose that the State of Georgia will pay you the winnings in 20 annual installments, starting immediately, of $2,400,000 each. If your opportunity cost is 10%, what is the value today of these 20 installments?
11. Faith is saving money to send her son to college. If he is ten years old now, how much must she deposit now, at 7%, so that when he turns 18 and goes to college, he will be able to withdraw $20,000 a year for four years to pay for his college tuition?
FILL IN THE BLANKS

Refer to Chapter 8, pages 195–208 in *Financial Management and Analysis*.

1. The ____________ manager must decide whether a particular investment is ____________ or _____________. A(n) ____________ investment will ____________ shareholder wealth whereas a(n) ____________ one _____________. To decide whether an investment is ____________ or ____________, the manager must determine whether the ____________ from the investment that are often expected in future periods will ____________ the _____________. To make the ____________ investment decisions, the ____________ manager also must consider the way the investment is _____________.

2. The ____________ rate or ____________ rate for the future cash flows is used to ____________ these future cash flows into a(n) ____________ value. This ____________ rate represents how much an investor is willing to
QUESTIONS AND PROBLEMS

today for the ______________ to receive the future cash flow. Or, to put it another way, the discount rate is the rate of ______________ the investor ______________ on an investment, given the ______________ he or she is willing to pay for its ______________ future cash flow. Whether a(n) ______________ future cash flow, a(n) ______________ of level cash flows, a(n) ______________ of cash flows having different amounts, or a(n) ______________ series of cash flows, to determine its ______________ value, knowledge of the ______________ and ______________ of the future cash flows, as well as the ______________ rate that reflects the uncertainty of these cash flows are necessary.

3. If investors are risk ______________ then they do not like ______________. They will value an asset using a(n) ______________ discount rate the more ______________ they are about the future cash flows. ______________ and ______________ will continue to ______________ and ______________ until they have exhausted what they believe are all the ______________ opportunities. When that happens, the assets are neither ______________ or ______________ priced. This point where buying and selling is in ______________ is referred to as a market ______________.

4. The ______________ of an asset is determined by the investor with the ______________ valuation of the asset. As long as an asset can be traded without any ______________ in a market, ______________ and ______________ will determine its price. However, if
there are frictions to trading such as a(n) ______________ on the quantity or high transaction ______________, trading is inhibited and the asset’s price will not reflect the ______________ value.

5. There is a(n) ______________ relation between the ______________ of an asset and the ______________ rate applied to future cash flows: the ______________ this ______________ rate, the ______________ today’s ______________, and the ______________ the ______________ rate, the ______________ today’s ______________.

6. A(n) ______________ is the ______________ an investor receives from an investment. It can be in the form of a(n) ______________ the in the ______________ of the asset through ______________ or ______________, a cash ______________ from the investment, such as a(n) ______________ or a(n) ______________ payment, or ______________ a cash ______________ and a change in ______________.

7. The ______________ on an investment is also referred to as the ______________. The most common way of reporting a(n) ______________ or ______________ is on a(n) ______________ basis, expressed as the ______________ annual return. Another name for this ______________ is the ______________ rate of return (______________). The ______________ annual return on an investment is the
average, not the ____________ average because it ignores any ____________.

8. The ____________ rate that equates an investment’s initial ____________ with value of the ____________ cash flows it produces is the ____________ rate of return. The ____________ rate of return is aptly named as we are assuming that the cash ____________ are reinvested at the ____________ return as the rest of the investment, its ____________ return.

9. The ____________ annual return on an investment considers _____________. If we assume the cash flows are ____________ at a(n) ____________ return, the return on the investment is referred to as the ____________ rate of return (______________).
SHORT ANSWER QUESTIONS

Refer to Chapter 8, pages 195–208 in *Financial Management and Analysis*.

1. Why is there an inverse relation between the discount rate applied to future cash flows from an investment and the value of the investment today?

2. When given a choice among investments, on which aspects of the investments should the investor focus in order to make the best decision?
3. What are the differences among the average annual return, the arithmetic average annual return, and the geometric average annual return? Which one is preferred and why?

PROBLEMS

Refer to Chapter 8, pages 195–208 in Financial Management and Analysis.

1. Numerically illustrate the answer to short answer 1 from the section above, using the following information. Suppose Karen wants to make an investment today that will have a future value of $500 one year from today. If she has the choice of a 5% discount rate or a 6% discount rate, which investment should she choose?
2. A particular investment will pay $1,500 every year, forever. How much is this investment worth to an investor whose required rate of return is 10% for investments of similar risk?

3. Calculate the average annual return for a $3,000 investment with an ending price of $5,500 four years later, with no intermediate cash flows.
4. Consider an investment with the following cash flows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cash Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>$20,000</td>
</tr>
<tr>
<td>2004</td>
<td>$40,000</td>
</tr>
<tr>
<td>2005</td>
<td>$25,000</td>
</tr>
<tr>
<td>2006</td>
<td>$35,000</td>
</tr>
</tbody>
</table>

a. What is the annual return on the investment if an investor invests $100,000 at the end of 2002?

b. What is the most the investor would invest so that the return on the investment is at least 10%?
3. Suppose $25,000 is invested and it provides a return of 8% in the first year, 12% in the second year, and 15% in the third year. The value of the investment is maintained in the investment and it grows each year (i.e., the investment has no cash flows).

   a. What is the investment worth at the end of the third year?

   b. What is the average annual return on this investment?
Fill in the Blanks

Refer to Chapter 9, pages 211–251 in Financial Management and Analysis.

1. Investing in _____________ stock represents a(n) _____________ interest in a corporation. _____________ of common stock are a(n) _____________ security meaning there is no _____________. _____________ of common stock have the _____________ to receive a certain portion of any _____________, however dividends are not _____________. Typically _____________ are either _____________ or grow at a somewhat _____________ rate.

2. _____________ and _____________ are debt securities obligating the borrower to pay _____________ at regular intervals, typically _____________, and to repay the _____________ amount borrowed, referred to as the _____________ value. The interest payment is called _____________. If these coupons are a(n)
QUESTIONS AND PROBLEMS

amount, paid at regular intervals, we refer to the security paying them as having a(n) ______________ coupon. A(n) ______________-coupon note or bond does not promise to pay interest periodically; instead it pays only at the ______________ date.

3. The ______________ Model (______________) is a formula that can be used to ______________ a share of ______________ if the ______________ is either ______________ or grows at a(n) ______________ rate. The model states that the ______________ of a(n) ______________ of stock is equal to the ratio of next period’s ______________ to the ______________ between the ______________ rate of ______________ and the ______________ rate of ______________. Using the DVM, the ______________ rate of ______________ on a(n) ______________ is a function of the stock’s ______________ yield and its ______________ yield. Using the same model, the ______________ rate is a function of the ______________ payout such that the ______________ the payout, the ______________ the growth of future dividends and vice versa; the ______________ the payout, the ______________ it has to ______________ into the firm for the future and the ______________ the expected growth rate in the future.

4. If ______________ are ______________ forever, the ______________ of a share of stock is the ______________ value of the ______________ per share per ______________, in ______________. The ______________ rate of
(______________) is the return shareholders demand to __________________ them for the __________________ of money tied up in their investment and the __________________ of the __________________ cash __________________ from these investments.

5. ________________ cost is what investors could have __________________ on __________________ investments with __________________ risk. This __________________ return is the __________________ rate of __________________, or the __________________ rate, compensating the share owners for the __________________ of money and _________________. The required rate of return is made up of the __________________ yield plus the rate the share ________________ is expected to ________________, the ________________ yield. It becomes important to consider whether or not we actually realize the ________________ yield only when we are dealing with ________________ because ________________ must be paid on the ________________ gain only when it is ________________.

6. When valuing ________________, the present ________________ is dependent on the relation between the ________________ rate and the ________________. If the ________________ rate is more than the ________________, the security is worth ________________ than its ________________ value and it sells at a(n) ________________. If the ________________ rate is less than the ________________, the security is worth ________________ than its maturity value and it sells at a(n) ________________. If the ________________ rate is equal to
the yield, the security is ______________ at its maturity value.

7. A stock option is the ______________ to ______________ or ______________ a particular common stock at a specified price within a specified period. These options are ______________ created by the company that issued the underlying ______________; rather, they are created by the ______________ on which the option is to be ______________. The right to ______________ an asset is a(n) ______________ option. It gives the investor the right to ______________ a share of stock at the ______________ price, or ______________ price, before the ______________ date. The right to ______________ an asset is called a(n) ______________ option.

8. A(n) ______________ bond is a bond that can be converted into common ______________ at the option of the ______________. This bond is therefore a combination of a(n) ______________ bond, a bond ______________ such a conversion feature, and an option to convert the bond to shares of ______________. ______________ bonds have a call feature that allows the bond ______________ to ______________ back the bonds from the ______________ at a specified ______________, the ______________ price, during a specified period ______________ the bond’s maturity date. Some bonds are both ______________ and ______________.
SHORT ANSWER QUESTIONS

Refer to Chapter 9, pages 211–251 in Financial Management and Analysis.

1. What is the relation between present value, maturity value, and selling price of a bond?

2. How are common stock, preferred stock, and debt securities valued?
3. What factors affect the time value of an option?

4. What is the Dividend Valuation Model and why is it useful for valuation purposes?
5. Compare the yield-to-maturity and yield-to-call for a bond.

PROBLEMS

Refer to Chapter 9, pages 211–251 in Financial Management and Analysis.

1. A bond has a coupon rate of 10%. Interest rates are expected to decrease due to a newly instituted economic package. What will happen to the price of this bond? Why?
2. A call option for 1,000 shares of XYZ Company is selling for $1,500. The option has a strike price of $30 and expires in one month. If a share of XYZ stock is currently selling for $32, does the cost of this option make sense? Why or why not?

3. ABC Corporation issues shares of preferred stock that sell for $35.00 and pays a fixed dividend of $3.45 a share. What is the annual return on the stock? If you require a 10% return on your investment, would you make this investment?
4. A share of HIJ preferred stock pays an $11.00 dividend and is priced to yield 8%. If the stock is callable at $125 in three years, and is currently priced at $130, should you take this investment?

5. The stock of NOP Corporation is currently paying a dividend of $2.25. The dividends are expected to grow at 2% for the next three years, after which the dividend is expected to remain at that level indefinitely. If investors require a 16% return on the stock, at what price should they sell?
6. An issue of bonds with a $1,000 face value paying a 12% coupon rate will mature in five years. Similar risk investments have an effective yield of 14% interest paid semiannually. At what price will the bonds be selling? If an investor bought a bond for the indicated price and held it to maturity, what would his average annual promised yield be?

7. An issue of JRJ Nibasco bonds pays a 9¾% coupon and sold for 100 at the end of the year. If the bond sold for 103¾ at the end of the year, what return would an investor have earned for the year? What is the capital yield and the coupon yield on the bond?
8. What is the yield to maturity of an issue of zero-coupon bonds that mature in eight years and are selling for $63\%$?

9. An investor bought 1,000 shares of stock for $5 a share in her online trading account. The transaction cost for her was $10.99. One week later, she sold the shares for $8\%$, again incurring a $10.99 fee. The investor did not keep the investment long enough to qualify to receive any dividends from the company. What was her return on this investment?
10. A $1,000 bond of Needs-A-Name Corporation pays a 10% coupon and is selling for $108. The bond pays interest semiannually and is callable in four years at par plus one year’s interest. What is its yield to call?
FILL IN THE BLANKS

Refer to Chapter 10, pages 257–302 in *Financial Management And Analysis*.

1. There is ____________ in almost everything financial managers do because no one ____________ precisely what changes will occur in such things as ____________ laws, consumer ____________, the ____________, or ____________ rates. Though the terms ____________ and ____________ are often used to mean the same thing, there is a distinction between them. ____________ is the lack of ____________ what will happen in the future. ____________ is how we characterize the degree of ____________: the ____________ the ____________.

2. ____________ flow risk comprises ____________ risk, ____________ risk, and ____________ risk. ____________ risk is the degree of ____________ regarding the number of ____________ of a(n)
QUESTIONS AND PROBLEMS

or service the firm will be able to sell and the of these units. risk is the uncertainty arising from the mix of and operating costs. risk is the uncertainty arising from the firm’s decisions.

3. The more burdened a firm is with , required and payments, the more likely it is that promised to will not be made and that there will be nothing left for the . We refer to the flow risk of a(n) security as risk or risk. Technically, risk on a(n) security depends on the specific obligations comprising the debt.

4. rate risk is the uncertainty associated with cash flows. If fall, one cannot the payments from the and get the same as before. Of two bonds with the same -to-maturity and the same rate, the bond with the maturity has reinvestment risk as it has cash flows to throughout its life. Likewise, of two bonds with the same -to-maturity and the same to , the bond with the coupon rate has reinvestment rate risk because it has
more of its ______________ coming sooner in the form of cash flows.

5. ______________ rate risk is the ______________ of the change in an asset’s ______________ to changes in market ______________ rates. ______________ interest rates determine the ______________ used to ______________ a future value to a(n) ______________ value, therefore the value of any investment depends on the rate used to ______________ its cash flows to the present.

6. ______________ power risk is the risk that the ______________ may increase unexpectedly. For example, if a firm ______________ funds by issuing a(n) ______________-term bond with a fixed ______________ rate and the price level ______________, the firm ______________ from a(n) ______________ in the price level and its ______________ is harmed because interest and the principal are repaid in a(n) ______________ currency.

7. ______________ risk is the risk that the relative values of the ______________ and ______________ currencies will change in the future, changing the ______________ of the ______________ cash flows. ______________ risk must be considered when investments generate ______________ flows in another ______________.

8. ______________ aversion is the ______________ and avoidance of risk. A risk ______________ investor will
QUESTIONS AND PROBLEMS

__________ risky investments. Risk ____________ indicates indifference towards risk. Risk ____________ persons do not need ____________ for bearing ____________. Risk ____________ indicates a(n) ____________ for risk—someone who is even willing to pay to take on risk.

9. ____________ is the combination of assets whose returns do not ____________ with one another in the ____________ direction at the ____________ time. If the ____________ on investments move together, they are ____________ with one another. Correlation is the ____________ for two or more sets of data to vary together. The ____________ on two investments are ____________ correlated if one tends to vary in the ____________ direction at the same time as the other, and ____________ correlated if one tends to vary in the ____________ direction with respect to the other. They are ____________ if there is ____________ relation between the changes in one to changes in the other.

10. ____________ that goes away as we ____________ assets is diversifiable risk; this is also referred to as ____________ risk or ____________-specific risk. ____________ that cannot be reduced by adding more ____________ is nondiversifiable risk, also referred to as ____________ risk or ____________ risk.
11. ___________ took the idea that portfolio _______ and ________ are the only elements to consider and developed a model that deals with how _________ are priced. This model is referred to as the _______ asset ________ model (__________). The ______ specifies that the ________ on any ________ is a function of the ________ on a(n) ________ asset plus a(n) ________ premium. The ________ on the risk-free asset is ________ for the time ________ of money. The risk ________ is the ________ for bearing ________. Therefore CAPM says: The market portfolio represents the most well ________ portfolio with the only ________ in a portfolio comprising all ________ being ________ risk, also called ________ risk or ________ risk.

12. An alternative to ________ in relating ________ and ________ is the ________ pricing ________ (__________), which was developed by ____________. The ______ is a(n) ________ pricing model that is based on the idea that ________ assets in ________ markets should be priced _________. APM states that an asset’s ________ should ________ the investor for the ________ of the asset, where the ________ is due to a number of ________ influences, or ________ factors. The APM provides ________ support for an asset ________ model where there is more than one risk _________. 

Risk and Expected Return
SHORT ANSWER QUESTIONS

Refer to Chapter 10, pages 257–302 in Financial Management and Analysis.

1. What are the degree of operating leverage, the degree of financial leverage, and the degree of total leverage? How do they interact?

2. What may cause default and why should financial managers be concerned with default?
3. What two risks are closely associated with reinvestment risk? How do these risks contribute to reinvestment risk for the investor?

4. How does interest rate risk affect the valuation of bonds?
5. Explain the relationships among expected return, variance, and standard deviation.

PROBLEMS

Refer to Chapter 10, pages 257–302 in *Financial Management and Analysis*.

1. Home Decor Incorporated sells faux fur wallpaper for $1,500 per roll. The rolls cost the firm $30 to produce. The firm has fixed operating costs of $175,000 and pays an annual interest expense on its debt of $65,000.

   a. Calculate Home Decor’s degree of operating leverage at 10,000 units sold.
b. Calculate Home Decor’s degree of financial leverage at 10,000 units sold.

c. Calculate Home Decor’s degree of total leverage at 10,000 units sold.

d. Calculate Home Decor’s break-even number of units produced and sold.
e. If the sales volume were increased from 10,000 units to 15,000 units, by what percentage would the cash flow to shareholders increase?

6. Consider two investments with the following cash flows:

<table>
<thead>
<tr>
<th>Economic Scenario</th>
<th>Probability of Economic Scenario</th>
<th>Possible Outcome for Investment 1</th>
<th>Possible Outcome for Investment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom</td>
<td>25%</td>
<td>$2,000</td>
<td>$1,500</td>
</tr>
<tr>
<td>Normal</td>
<td>40%</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>Bust</td>
<td>35%</td>
<td>$500</td>
<td>$857</td>
</tr>
</tbody>
</table>

a. Calculate the expected value of each investment.
b. Calculate the standard deviation for each investment’s possible outcomes.

c. Which investment is riskier?

4. Suppose the expected risk-free asset is 6% and the return on the market is 10%. Further suppose you have a portfolio comprised of the following securities with equal investments in each:

<table>
<thead>
<tr>
<th>Security</th>
<th>Security Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.85</td>
</tr>
<tr>
<td>B</td>
<td>1.00</td>
</tr>
<tr>
<td>C</td>
<td>1.25</td>
</tr>
<tr>
<td>D</td>
<td>1.50</td>
</tr>
</tbody>
</table>
a. What is the expected return for each security in the portfolio?

b. What is the portfolio’s beta?

c. What is the expected return on the portfolio?
4. Given the following investments:

<table>
<thead>
<tr>
<th>Economic Scenario</th>
<th>Probability of Economic Scenario</th>
<th>Possible Outcome for Investment 1</th>
<th>Possible Outcome for Investment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boom</td>
<td>15%</td>
<td>18%</td>
<td>25%</td>
</tr>
<tr>
<td>Normal</td>
<td>30%</td>
<td>50%</td>
<td>45%</td>
</tr>
<tr>
<td>Bust</td>
<td>55%</td>
<td>40%</td>
<td>30%</td>
</tr>
</tbody>
</table>

a. Calculate the covariance between the two investments.

b. Calculate the correlation coefficient between the two investments.
c. What do these measures tell an investor?
FILL IN THE BLANKS

Refer to Chapter 11, pages 307–347 in Financial Management and Analysis.

1. The __________ of __________ is the return that must be provided for the use of an investor’s __________. If the funds are __________, the __________ is related to the __________ that must be paid on the loan. If the funds are __________, the __________ is the __________ that investors expect, both from the stock’s price __________ and __________. The cost of __________ is the same as the __________ rate of __________.

2. Capital __________ is the mix of __________, __________ stock, and __________ stock. It is the goal of the financial manager to estimate the __________ of each in order for the firm to issue new __________.
3. The __________ of __________, which is the raising of one more __________ by issuing debt, is directly affected by the __________ tax __________, which provides the __________ rate on the next dollar of __________ income. Because __________ paid is deducted from __________ income, the __________ cost of debt is __________ than the stated cost.

4. When __________ securities and __________ are issued, __________ costs must be considered. These costs are __________ to __________, __________, and investment __________ who assist the firm in the issue. Also called __________ of debt, it drives __________ the cost of the issue.

5. The __________ of __________ stock is the cost associated with raising one more __________ of capital by __________ shares of __________ stock. __________ stock may or may not have a(n) __________. If it does not have a(n) __________, then it is called __________ stock.

6. The __________ of __________ stock is the cost of raising one more dollar of __________ equity capital, either __________ or __________. __________ generated capital comes from __________ earnings whereas __________ generated capital comes from issuing new __________ of __________ stock.
7. The ______________ Model (______________) for valuing ________________ stock states the ________________ of a share of ________________ is the ________________ value of all its ________________ cash ________________ that are ________________ at the ________________ rate of ________________ on ________________. It is based on the assumption that ________________ grow at a(n) ________________ rate into the ________________.

8. The ________________ Model (______________) assumes investors hold ________________ portfolios that are only subject to ________________ risk. Investors are ________________ for the ________________ value of ________________ and for the ________________ they assume. The ________________ for the ________________ value of ________________ is represented by the market ________________ and the riskiness of the ________________ is represented by ________________.

9. The ________________ budget implies that in order to ________________ shareholder wealth, ________________ in projects must be made until the ________________ cost of ________________ is ________________ to its marginal ________________. In other words, the ________________ is the capital ________________ where the ________________ cost of ________________ intersects the ________________ rate of return, also known as the marginal ________________ of capital.
SHORT ANSWER QUESTIONS

Refer to Chapter 11, pages 307–347 in *Financial Management and Analysis*.

1. Explain what is meant when it is said that the cost of capital and the required rate of return are marginal concepts.

2. How is the cost of capital determined?
3. Under what financial conditions is it appropriate to use the DVM? The CAPM?

**PROBLEMS**

Refer to Chapter 11, pages 307–347 in *Financial Management and Analysis*.

1. Tallahassee Trucking and Towing (TTT) wants to issue additional debt. Using the yield on their current debt as a guide for the cost of new debt, what is TTT’s after-tax cost of debt? They currently have a 7% coupon bond paying interest semiannually that matures in five years and it has a current market price of $90 or $900 per $1,000 face value bond.
2. H&H, Inc., estimates they can sell an issue of $35 par value preferred stock that has a dividend rate of 3% to be paid at the end of each year. What is the all-in-cost of preferred stock if they sell the issue at par value with no flotation costs? With flotation costs of 1% of par value?

3. Rose Flower Company is considering issuing new stock. The current stock price is $65 per share and the corresponding current dividend of $3.12 per share and the dividends are expected to grow at a rate of 5% per year. Using the Dividend Valuation Model, what is the cost of common stock?
4. ABC Company is considering issuing new stock and is evaluating its cost of equity capital. If the risk-free rate of interest is 4% and the return on the market is 11%, what is the cost of common stock using the Capital Asset Pricing Model, assuming ABC has a beta of 1.35?

5. Sutton, Inc., is evaluating its cost of capital under alternative financing arrangements. It expects to be able to issue new debt at par with a coupon rate of 8% and to issue new preferred stock with a $2.00 per share dividend at $30 a share. The common stock is currently selling for $25 a share. It expects to pay a dividend of $1.50 per share next year. Sutton expects dividends to grow at a rate of 5% per year and Sutton’s marginal tax rate is 40%. Consider the two arrangements that follow to answer this question: What is the cost of capital to Sutton, Inc., under each financing arrangement?
<table>
<thead>
<tr>
<th>Financing Arrangement</th>
<th>Percentage of New Capital Raised</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Debt</td>
</tr>
<tr>
<td>1</td>
<td>30%</td>
</tr>
<tr>
<td>2</td>
<td>50%</td>
</tr>
</tbody>
</table>
FILL IN THE BLANKS

Refer to Chapter 12, pages 355–392 in Financial Management and Analysis.

1. The financial manager’s _____________ is to maximize owners’ _____________. To accomplish this, the manager must evaluate ____________ opportunities and determine which ones will add ____________ to the firm. Firms continually ____________ funds in ____________ and ____________ assets and these assets produce ____________ and ____________ flows that the firm can then either ____________ in more assets or ____________ to the owners.

2. ____________ investment is the firm’s investment in its ____________ through the use of ____________, ____________, ____________, and ____________ financing. The firm’s ____________ investment decision may be comprised of a number of distinct _____________. Managers must evaluate a number of
in making investment decisions, not only to how much the firm’s cash flows will if it invests in a project, but also the associated with these cash flows.

3. Cash flow comes from two sources: risk and risk. risk is the degree of related to the number of units that will be and the of the good or service and risk is the degree of concerning cash flows that arises from the particular of fixed and variable costs. The combination of the two risks is risk and is reflected in the rate, which is the rate of required to compensate the suppliers of for the amount of risk they bear, the rate of return or, from the firm’s perspective, the rate of capital.

4. Capital is the process of and investments in lived assets, or assets expected to produce over more than year. Because a firm must continually evaluate possible investments, capital is a(n) process. However, before a firm begins thinking about capital, it must first determine its corporate —its broad set of for future investment.
5. Projects are classified by the ______________ of the project life, the ______________, and the ______________ on other projects. The ______________ or ______________ life of an asset is an estimate of the ______________ of time that the asset will provide ______________ to the firm. The investment’s ______________ of return can be classified according to the ______________ of the project represented by the investment. The degree of ______________ on other projects is classified as follows: ______________ projects, ______________ projects, ______________ projects, and ______________ projects.

6. The ______________ between the cash flows of the firm ______________ the investment project and the cash flows of the firm ______________ the investment project, both over the same period of time, is the project’s ______________ cash flows. A more useful way of evaluating the ______________ in the value is the breakdown of the project’s cash flows into two ______________: ______________ cash flows and ______________ cash flows, which are the ______________ needed to ______________ the project’s assets and any cash flows from ______________ of the project’s assets.

7. The ______________ form of investment is a cash ______________ when the asset is ______________ and there may be either a cash ______________ or a(n) ______________ at the end of its ______________ life. In most cases these are not the only cash flows—the investment may result in changes in ______________, ______________, ______________, and ______________.
capital. These are ____________ cash flows as they result directly from the day-to-day activities of the firm.

8. The effect ____________ has on taxes is called the ____________. Because it reduces taxable income, depreciation reduces the tax ____________, which amounts to a cash ____________. For tax purposes, firms are permitted to use ____________ depreciation or ____________ depreciation. A(n) ____________ method is preferred in most situations because it results in ____________ deductions ____________ in the asset’s life than using ____________ depreciation.

9. ____________ value is ____________ considered in calculating ____________. Instead, it is our best ____________ today of what the ____________ will be ____________ at the end of its ____________ life some time in the future. ____________ value is our estimate of how much we can get when we ____________ of the asset.
SHORT ANSWER QUESTIONS

Refer to Chapter 12, pages 355–392 in Financial Management and Analysis.

1. List and describe the five stages of the capital budgeting process.

2. Compare the investment decisions in short-term assets versus long-term assets.
3. Explain the difference between independent, mutually exclusive, contingent, and complementary projects.

4. What are the cash flows that comprise an investment?

PROBLEMS

Refer to Chapter 12, pages 355–392 in Financial Management and Analysis.

1. An asset is purchased for $10,000. It is classified as five-year property and will be depreciated using the straight-line method. The asset has no salvage value and is
expected to increase revenues by $15,000 a year and expenses by $8,000 a year. If the tax rate is 30%, determine the cash flows from asset acquisition, asset disposition, and operating cash flows.

2. The Cookies-R-Us bakery is considering the purchase of an additional cookie press for $49,000. It is classified as a seven-year property and will be depreciated using straight-line depreciation. The addition of the press is expected to increase revenues by $18,000 a year and cash operating expenses by $5,000 a year. The salvage value is $10,000 at the end of seven years. If the tax rate is 25%, determine the cash flows from asset acquisition, asset disposition, and operating cash flows.
3. A new piece of equipment will cost a firm $20,000 to purchase and $8,000 to install and make it adaptable to the firm’s specific needs. In addition, $2,000 investment in spare parts inventory will be maintained to prevent downtime. The equipment has a seven-year life and will be depreciated using the straight-line method. It is expected to have a salvage value of $5,000 at the end of seven years. It will have no effect on revenues but is expected to decrease expenses by $3,000 a year through cost efficiencies. Determine the cash flows from asset acquisition, asset disposition, and operating cash flows.
1. The ______________ of capital is what the firm must ______________ for the funds needed to ______________ an investment. The ______________ of capital may be a(n) ______________ cost, such as the ______________ paid on debt, or a(n) ______________ cost, such as the expected ______________ appreciation of shares of the firm’s ______________ stock, or the ______________ required by the ______________ of ______________ to compensate them for the time ______________ of money and the ______________ associated with the investment. The more ______________ the future cash flows, the ______________ the cost of capital.

2. The ______________ period for a project is the ______________ of time it takes to get your ______________ back. It is the period from the ______________ cash ______________ to the
time when the project’s cash ______________ add up to the ______________ cash ______________. The ______________ period is also referred to as the ______________ period or the capital ______________ period.

3. The ______________ period is the time needed to ______________ back the ______________ investment in terms of ______________ future cash flows, therefore the ______________ period is ______________ for ______________ cash flows than for ______________ flows that are not ______________.

4. The ______________ value (______________) is the present value of all ______________ cash flows. The term ______________ is used because we want to determine the ______________ between the ______________ in the operating cash flows and the investment cash flows. Often ______________ in operating cash flows are ______________ and the ______________ cash flows are ______________, hence the reference to the ______________ as the ______________ between the present value of the cash ______________ and the present value of the cash ______________.

5. The ______________ technique considers all expected ______________ cash flows, the ______________ of money and the ______________ of the ______________ cash flows. Evaluating projects using ______________ will lead us to select the ones that ______________ owners’
wealth. The ____________ technique also allows you to ____________ the effect of ____________ in cost of capital on a project’s ____________.

6. A project’s ____________ profile, also referred to as the ____________ profile, shows how ____________ changes as the ____________ rate changes. The ____________ profile is a(n) ____________ depiction of the relation between the ____________ of a project and the ____________ rate. It shows the ____________ of a project for a(n) ____________ of ____________ rates.

7. The ____________ (___________) is the ratio of the present value of change in ____________ cash ____________ to the present value of ____________ cash ____________. The ____________ is often referred to as the ____________ ratio, as it is the ratio of the ____________ from an investment to its ____________. The ____________ tells us how much value we get for each dollar invested.

8. An investment’s ____________ of return (___________) is the ____________ rate that makes the present value of all expected ____________ cash flows equal to ____________; or, in other words, the ____________ is the ____________ rate that causes ____________ to equal ____________. The ____________ is a(n) ____________—what is earned, on average, per year. When evaluating ____________
projects, the one with the highest ____________ may ____________ be the one with the best NPV.

SHORT ANSWER QUESTIONS

Refer to Chapter 13, pages 399–444 in Financial Management and Analysis.

1. What are the six capital budgeting techniques? What should be taken into consideration when applying each technique?

2. What are the decision criteria for each capital budgeting technique?
3. When should PI be used? When should it not be used?

4. What is the difference between the IRR and MIRR? Why is using IRR or MIRR sometimes not appropriate?
5. Of all the capital budgeting techniques, which one is the best evaluation technique? Which techniques do managers most prefer in practice?

PROBLEMS

Refer to Chapter 13, pages 399–444 in Financial Management and Analysis.

1. You are the manager and are considering the following two projects for investment:

<table>
<thead>
<tr>
<th></th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project A</td>
<td>($10,000)</td>
<td>$3,000</td>
<td>$7,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Project B</td>
<td>($5,000)</td>
<td>$3,000</td>
<td>$4,000</td>
<td>$5,000</td>
</tr>
</tbody>
</table>
a. Calculate the payback period assuming end-of-the-year cash flows.

b. Calculate the discounted payback period assuming a required rate of return of 10% and end-of-the-year cash flows.
c. Calculate the NPV of each project.

d. Calculate the PI of each project.

e. Calculate the IRR of each project.
f. Calculate the MIRR of each project assuming a reinvestment rate of 10%.

g. If the projects are independent, which should be undertaken?

h. If the projects are mutually exclusive, which one should be undertaken?
1. Uncertainty arises from different sources, depending on the type of ______________ being considered, as well as the circumstances and the ______________ in which it is operating. Such circumstances include ______________ conditions, ______________ conditions, ______________, ______________ rates, and ______________ conditions.

2. The sources of ______________ influence ______________ cash flows when ______________ the risk of a capital project. Therefore, there is a(n) ______________ cost to consider: what the suppliers of capital could ______________ elsewhere for the ______________ level of ______________. This is the required ______________ or cost of ______________ and it contains the ______________ return necessary to ______________ investors for the risk they bear, called the ______________ premium.
3. A project’s ____________ in isolation from the firm’s other ____________ is also referred to as the project’s ____________ risk or ____________ risk. Because most firms have many ____________, the ____________ risk of a project under consideration may not be the ____________ risk for analysis. A firm is a(n) ____________ of assets, and the ____________ of these different assets are not perfectly, positively ____________ with one another. The real concern is with the ____________ of the project to the firm’s ____________ of assets and how it changes the ____________ of the firm’s ____________.

4. Three ____________ measures are used to evaluate the ____________ associated with a(n) ____________ possible outcomes: the ____________, the ____________ ____________, and the ____________ of ____________. The more ____________ or spread out the possible outcomes, the ____________ the degree of ____________ or risk of what is expected in the future.

5. In attempting to assess risk, it is important to perform analyses of the ____________ of cash flows to ____________ in the assumptions by ____________ the cash flows for different ____________. ____________ analysis, also called ____________ analysis or ____________ analysis, is a method of looking at the possible ____________, given a change in only ____________ of the factors at a time.
6. ______________ analysis provides a manageable approach to changing ______________ or ______________ factors at the ______________ time. It is ______________ simulation by developing a(n) ______________ distribution of possible ______________, given a(n) ______________ distribution for each ______________ that may ______________. With the help of a computer simulation program, ______________ can be performed calculating ______________ of return that yield a(n) ______________ distribution of the ______________ on investments.

7. An alternative approach that applies ______________ methods to ______________ assets, known as ______________ valuation (______________), considers the value of a project that extends ______________ its value as measured by the ______________, meaning the value of project is ______________ by the value of ______________ inherent in an investment opportunity. These ______________ are to ______________ the project, though there may be constraints (e.g., legally binding contracts) that affect when this option can be ______________, the option to ______________, and the option to ______________ investment to some ______________ date. Because the options are ______________ decisions, the ______________ net present value is referred to as the ______________ NPV.

8. The ______________ of stock options is rather complex, but with the assistance of models such as the ______________ model, option values can be estimated. The ______________ option pricing model contains ______________ factors that
are important in the ______________ of an option. The most ______________ and ______________ factor to measure, the ______________ of the value of the underlying asset, directly affects ______________ key elements of the ______________ value in that the greater the ______________, the greater the ______________ of the option and the greater the ______________ of ______________, which lowers the ______________ NPV.

9. A(n) ______________ equivalent is the ______________ cash flow that is considered to be ______________ to the ______________ cash flow. The ______________ equivalent ______________ of incorporating ______________ into the net present value analysis is useful because it ______________ the time ______________ of money and ______________, allows each ______________ cash flows to be adjusted separately for ______________, and ______________ for risk can be ______________. It is difficult to apply as the ______________ value of the certainty equivalent is not easily ______________ and there is no ______________ way of determining the certainty equivalent value for each ______________ cash flow.

10. Considering the use of a(n) ______________ cost of ______________ and/or similar ______________ for all projects can be hazardous. When ______________ the various ______________ capital ______________ techniques, it may result in the ______________ of profitable projects that have risk below the risk of the average risk project because of ______________ future cash flows, and
of unprofitable projects whose risk is above the risk of the average project, because future cash flows were _________.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 14, pages 451–481 in *Financial Management and Analysis*.

1. Define and explain how the range, standard deviation, and coefficient of variation are used to describe the dispersion of future outcomes.

2. What are sensitivity and simulation analyses and when are they appropriate?
3. How does financial leverage affect the measurement of market risk?

4. If a firm is considering engaging in a new project, how does it measure the risk for this new project?
5. How is a firm’s cost of capital generally determined?

PROBLEMS

Refer to Chapter 14, pages 451–481 in *Financial Management and Analysis*.

1. ABC Company’s cost of capital is 15% and uses equity financing. It is investigating the possibility of investing in a project that is different from its line of business. ABC has identified a pure play firm, DEF, Inc., for that particular project that has an equity beta of 1.36. DEF has a 45% debt to equity ratio and has a 35% marginal tax rate. What rate of return should ABC use to evaluate taking on the project if the relevant risk-free rate is 5.5% and the market risk premium is 12%?
2. Consider the following cash flows for Projects A and B.

<table>
<thead>
<tr>
<th>Probability</th>
<th>Cash Flow</th>
<th>Probability</th>
<th>Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>$1,300</td>
<td>0.30</td>
<td>$3,000</td>
</tr>
<tr>
<td>0.40</td>
<td>$1,500</td>
<td>0.25</td>
<td>$1,500</td>
</tr>
<tr>
<td>0.35</td>
<td>$800</td>
<td>0.45</td>
<td>$1,500</td>
</tr>
<tr>
<td>0.25</td>
<td>$1,300</td>
<td>0.30</td>
<td>$3,000</td>
</tr>
<tr>
<td>0.40</td>
<td>$1,500</td>
<td>0.25</td>
<td>$1,500</td>
</tr>
<tr>
<td>0.35</td>
<td>$800</td>
<td>0.45</td>
<td>$1,500</td>
</tr>
</tbody>
</table>

a. What are the cash flows range for each project?

b. What is the expected cash flow for each project?
c. What is the standard deviation of the possible cash flows for each project?

d. What is the coefficient of variation for each project?
e. Assume a firm is trying to decide between these two projects and uses a 13% required rate of return to evaluate all the projects having a coefficient of variation of less than 0.5 and an 18% required rate for those projects with coefficients greater than 0.5. Project A requires an initial outlay of $2,000, whereas Project B costs $1,000. Each project is expected to have a five-year life. Which project should be undertaken if the projects are mutually exclusive?

f. Conduct a sensitivity analysis on Project B making each of the following changes:
   ■ Change the discount rate to 19%.
■ Change the initial outlay to $1,800.

■ Change the expected cash flows to $1,000.

■ Assume all these changes occur at the same time.
FILL IN THE BLANKS

Refer to Chapter 15, pages 487–527 in Financial Management and Analysis.

1. The amount borrowed in a(n) ______________ is called the ______________ and is repaid either at the ______________ of the period or at regular ______________ during this period. The ______________ or note holder or ______________ receives ______________ as compensation. For some types of debt the ______________ is paid periodically, and for other types is paid at the ______________ of the debt period. The interest rate can be a(n) ______________ rate or a(n) ______________ rate which is popularly referred to as a(n) ______________ rate.

2. Debt backed by ______________ is called ______________ debt and the property is ______________ or ______________. If there is no security, the creditor relies entirely on the ______________ of the borrower to make
the promised ______________; therefore this type of debt is ___________ or a(n) ____________.

3. ____________ loans are negotiated directly between ____________ and ____________, where the ____________ is typically a commercial ____________, a(n) ____________ company, or a(n) ____________ company. ____________ loans range in ____________ from two to ten years, though any repayment term is possible as long as it is a(n) ____________ term, or ____________ maturity, as opposed to a loan that is payable on ____________.

4. Bonds may be either ____________ or ____________. For ____________ bonds, the issuer maintains ____________ of who owns them and sends any ____________ or ____________ to the ____________ owners. For ____________ bonds, physical ____________ of the ____________ entities the receiver to the ____________. If ____________ is payable, the ____________ simply clips a(n) ____________ attached to the certificate and sends it in or ____________ it at a specified bank.

5. The ____________ feature of a convertible bond gives the investor the right to ____________ the bond for some other ____________, typically shares of ____________, at a predetermined rate of exchange. The ____________ should hold the bond until it becomes
to convert it into shares of stock. It won’t be worth converting unless the of the shares of stock.

6. Organizations that and the likelihood of debt and make the information available to the public are agencies. The most popular agencies are Service, Corporation, and . The debt or ratings are important for the of and of debt. Many banks, pension funds, and governmental bodies are from investing in securities that do not have a(n) credit rating. Because investors want to be compensated for , the the risk associated with debt, represented by ratings, the the yield on debt demanded by investors, which means the the cost of raising funds via debt.

7. In all systems, the term grade means default risk, or conversely, probability of future payments. In general, bonds carry the highest-grade or ratings that are designated by a symbol of triple through triple . bonds are those bonds rated below triple and are also called or bonds.
8. ______________ agencies consider the four Cs of ______________: ______________, ______________, ______________, and ______________. ______________ of management includes the ______________ reputation and ______________ of management. ______________ is the ability of an issuer to ______________ its obligations. Collateral is the ______________ of ______________ and ______________ that are pledged to secure debt. ______________ are the binding ______________ and ______________ of the lending agreement.

9. Firms seeking to raise ______________ with ______________ offerings want to issue securities with the ______________ cost and the flexibility to ______________ the debt if interest rates ______________. Investors want securities that provide the ______________ yield, ______________ risk, and the flexibility to ______________ if other, more profitable investment opportunities arise. The best package of ______________ features will provide both what investors are looking for and what the firm is willing to offer. Today, this is available through the use of ______________ instruments because issuers can ______________ create ______________-rate or ______________-rate bonds by using ______________ rate, ______________, ______________, or ______________ based swaps.
**SHORT ANSWER QUESTIONS**

Refer to Chapter 15, pages 487–527 in *Financial Management and Analysis*.

1. How is the interest rate on debt determined and how is it reset for floating rates?

2. Describe and discuss the difference between a fully amortizing loan and a bullet loan.
3. What is the difference between a note and a bond?

4. Describe the basic provisions of a bond issue.
5. How would a bond be called or retired prior to maturity? Why would this happen?

6. What is the difference between a convertible bond and a bond with a warrant option?
1. Which would experience a greater percentage change in price if interest rates change and which has more reinvestment risk: an 8% coupon bond with 10 years to maturity or a zero-coupon bond with 10 years to maturity? Why?

2. TJ Corporation currently has a 9%, $1,000 bond issue outstanding. The bond is convertible into 45 shares of common stock and is currently selling for $1,575.

   a. What is the conversion price of the bond?
b. If the common stock is currently selling for $35 a share, what is the bond’s market conversion price?

c. What is the effective conversion price of the bond?

d. The bond is callable at $1,800. Should an investor accept the call or convert the bond into common stock? Why?
3. CVQ Inc., has issued $100 million of 8% coupon bonds. Each has a warrant that entitles the owner to buy a share of the common stock of CVQ for $20 a share.

   a. If the current market price of CVQ is $33 a share, what is the minimum price you would pay for the warrant?

   b. The warrant has five years until expiration. How will this affect the price you would be willing to pay for the warrant?

4. KLH Company currently has $12 million of 10% coupon bonds outstanding. The bonds pay interest semiannually, they have a face value of $1,000 each, and have eight years remaining to maturity. The bonds are callable at 105 and are trading to yield 6%. KLH’s marginal tax rate is 25%.
a. What is the total market value of the outstanding bonds?

b. Should KLH buy the bonds in the open market or call in the bonds at this point in time? Why?
5. The DD Corporation issued a zero-coupon, $1,000 face value bond on January 1, 2001. The bond was issued at $875 and matures on December 31, 2003.

a. If you bought these bonds when they were issued and held them to maturity, what return would you earn?

b. What is the amount of interest expense on this bond that DD can deduct each year?
FILL IN THE BLANKS

Refer to Chapter 16, pages 533–566 in Financial Management and Analysis.

1. We refer to the equity of a corporation as ____________. A corporation’s stock may be divided into two major types: ____________ stock and ____________ stock. Each of these classes is split into smaller pieces called ____________, represented by stock ____________. Owners of these shares are referred to as ____________ or ____________. Shareholders receive part of the ____________ on their investment from ____________, which are periodic ____________ payments from the corporation.

2. There are a number of characteristics of ____________ stock that are important in the financial manager’s capital structure decision and that affect investors’ decisions regarding common stock as an investment. These characteristics include: limited ____________, the number of
__________, stock ____________, ____________ stock, ____________ rights, and the right to ____________ more stock.

3. The number of ____________ a firm can issue is referred to as the ____________ shares. If a firm wishes to issue more shares, it does ____________ have to issue the entire number of shares authorized. The number of ____________ shares is the number of shares ____________ sold and is equal to or ____________ than the number of ____________ shares. If a firm buys back stock from investors, the number of shares ____________ in the hands of investors—referred to as ____________ shares—is fewer than the number of ____________ shares. Shares bought back from investors may be either ____________, reducing the number of issued shares, or held as ____________ stock.

4. ____________ shareholders are generally granted rights to ____________ members of the board of ____________, ____________ on the ____________ of the corporation with another corporation, ____________ additional shares of common stock, and ____________ on ____________ to the articles of incorporation. Different ____________ of stock may have different numbers of ____________ per share, or different classes as a whole may have specified ____________ of the votes. The different classes can be used by ____________ groups to ____________ control of the company.
5. ______________ voting is designed to allow ______________ shareholders to gain representation on the board. With ______________ voting, shareholders can ______________ their votes for members of the board of directors. Cumulative voting allows shareholders to ______________ up their votes for one or more ______________, leading to more active participation in the corporation’s ______________, especially by shareholders with ______________ holdings.

6. Some corporations have divided their director positions into classes, where only ______________ class of directors is voted on each year, instead of the ______________ board. This system is referred to as a(n) ______________ board of directors or a(n) ______________ board of directors. The ______________ of this system is that, by staggering terms there is ______________ in the board of directors. Having multiyear terms insures that there are ______________ members of the board and allows the board as a group to work on projects or issues that extend beyond ______________.

7. Corporations can give the right to buy ______________ shares of new ______________ stock through a(n) ______________ offering which is an offering of ______________ to ______________ shareholders to purchase shares in order to ______________ their current ______________ in the company.
8. The board of ______________ may declare a(n) ______________ at any time, but dividends are not a legal ______________ of the corporation. Most dividends are in the form of ______________. In addition to cash dividends, the corporation may provide shareholders with dividends in the form of additional ______________ of stock or, rarely, other types of ______________ owned by the corporation.

9. Many U.S. corporations allow shareholders to automatically ______________ their dividends in the ______________ of the corporation paying them. A(n) ______________ reinvestment plan (______________) is a program that allows ______________ to reinvest their ______________, buying ______________ shares of stock of the company instead of receiving the ______________ dividend. These ______________ shares representing dividends reinvested may be currently ______________ or newly ______________.

10. A stock ______________ is something like a stock dividend. A stock split ______________ the number of ______________ shares into ______________ shares however the ______________ of ownership has not changed. Aside from a minor difference in accounting, stock splits and stock dividends are essentially the ______________. A(n) ______________ stock split, ______________ the price of a stock by ______________ the number of shares of stock.
11. A(n) ______________ policy is a firm’s ______________ about the payment of ______________ dividends to shareholders. There are several basic ways of describing a firm’s dividend policy: ______________ dividends, constant ______________ in dividends per share, constant ______________ ratio, and ______________ dividends with ______________ extra dividends. Several views that attempt to explain why dividends are paid are: the Dividend ______________ Theory, the “______________ in the Hand” Theory, the ______________ Explanation, the ______________ Explanation, and the ______________ Explanation.

12. A corporation ______________ its own shares is effectively paying a(n) ______________ dividend, with one important difference: ______________. ______________ dividends are ______________ taxable income to the shareholder. A firm’s ______________ of shares, on the other hand, results in a(n) ______________ gain or loss for the shareholder, depending on the ______________ paid when they were originally purchased. If the shares are repurchased at a(n) ______________ price, the difference may be taxed as capital ______________, which may be taxed at rates ______________ than ordinary income.
SHORT ANSWER QUESTIONS

Refer to Chapter 16, pages 533–566 in *Financial Management and Analysis*.

1. Exactly what is a shareholder buying when shares are purchased?

2. What is the difference between preferred stock and common stock?
3. What is common equity and how is it created?

4. What does it mean when corporations are classified as publicly held, privately held, or closely held?
5. Why would a company pay a dividend?

6. Explain the time line for issuing dividends.
7. Why would a company do a reverse stock split?

8. Why would a company repurchase its own stock and how would it go about doing so?
PROBLEMS

Refer to Chapter 16, pages 533–566 in *Financial Management and Analysis.*

1. ABC Corporation has 1.3 million common shares outstanding and total earnings of $2.4 million. The firm paid dividends totaling $550,000. The firm has no preferred stock.

   a. What were the dividends per share paid by ABC?

   b. What was ABC’s dividend payout ratio?
2. Pricee stock sells for $275 per share and you own 300 shares.

   a. What is the current market value of your investment?

   b. What is the new price per share, new amount of shares you will own, and the new market value of your investment if the firm declares a 3 for 1 stock split? If the firm declares a 15% stock dividend?
3. You currently own 500 shares of XYZ Company. There are four board positions up for election. How many votes can you cast for your favorite candidate, Ms. W, if the ordinary voting procedure is used? How many can you cast for Ms. W if cumulative voting is used?
FILL IN THE BLANKS

Refer to Chapter 17, pages 571–580 in *Financial Management and Analysis*.

1. Like common stock, ____________ stock also represents equity. ____________ shareholders have a claim on ____________ and assets ahead of that of ____________ shareholders. If the business is liquidated and all the assets sold and the proceeds used to pay off all the creditors, then the ____________ shareholders get what is owed to them before ____________ shareholders. While few corporations are actually liquidated, this ____________ claim provides ____________ shareholders with an advantage in the reorganization of firms in distress or bankruptcy.

2. Almost all firms must pay their specified ____________ dividend. When dividends are paid, ____________ dividends must be paid ____________; what remains may be paid as dividends to ____________ shareholders. Most preferred share ____________ are paid in ____________,
although some are in the form of ____________ of stock. Most ____________ dividends are paid ____________ and may be paid at either a(n) ____________ or ____________ rate per period.

3. ____________ dividends are expressed as either a(n) ____________ of the par value or a(n) ____________ dollar amount per period. For ____________ dividends, the dividend rate on a(n) ____________ preferred stock is typically fixed ____________ and based on the dividend ____________ spread. Most adjustable-rate preferred stock is ____________, with a(n) ____________.

From the perspective of the ____________, a collar’s maximum ensures that the ____________ of financing with preferred stock are ____________; from the perspective of the ____________, a collar’s minimum ensures that the ____________ on the preferred stock has a(n) ____________ limit.

4. The dividend rate on ____________ preferred stock is set ____________, as with adjustable-rate preferred stock, but it is established through an auction process. ____________ preferred stock is preferred stock where the dividend rate is determined periodically by a remarketing ____________ who resets the dividend rate so that any preferred stock can be ____________ at par and be resold at the original ____________ price. Typically, a(n) ____________ has the choice of dividend ____________ every seven days or every 49 days. Since the mid-1980s, ____________ preferred stock and
preferred stock have become the dominant type of preferred stock issued.

5. With __________ preferred stock, any __________ not paid in one period must be paid the next period __________ any other dividend for that class of preferred stock is paid and before any __________ stock dividend is paid. With __________ preferred stock, any dividend not paid in a period is __________ paid in any other period—it is simply __________ and does not affect the dividend in any __________ period. If a preferred stock dividend is __________, any dividend passed over in one period is carried over year to year. The passed over dividend is referred to as the __________ and the preferred stock dividend is said to be in __________. Most preferred stock issued in the United States is __________ preferred stock.

6. The market __________ price or __________ value is the market value of the __________ stock the investor would have if the __________ stock is exchanged with the __________ stock. The market conversion __________ is the conversion __________ multiplied by the market __________ of a share of __________ stock. If the market value of the convertible __________ stock exceeds the conversion value, we refer to this difference as the conversion __________.
7. ______________ preferred stock gives the issuer the right to ______________ it from the ______________ at a predetermined price. If the issuing corporation wants to buy back the stock by using the call, they pay the specified call ______________. The call ______________ may be a(n) ______________ amount forever, or may ______________ according to a preset ______________. The call price is generally ______________ than or equal to the ______________ or par value of the stock.

8. Because there is no legal ______________ to pay the preferred dividend and because ______________ and other ______________ take precedence if the firm is liquidated, a corporation can provide this ______________ in the form of a(n) ______________ fund provision. Funds are deposited with a(n) ______________ who uses these ______________ to periodically ______________ preferred stock, buying it from shareholders at a specified price, the ______________ fund call price. The trustee retires ______________ stock periodically and the firm is better able to meet the ______________ payments on the remaining preferred shares.

9. A corporation may combine any of the previously described ______________ into its preferred stock ______________. If they hope to sell their preferred shares, they must package them in a way that is ______________ to investors and at a reasonable ______________. Features that give the ______________ flexibility, such as a(n) ______________ feature, and features that give the
something of additional value, such as a(n) feature, must be balanced in order to obtain an optimal cost for the package. Packaging a new issue of preferred stock requires considering investors’ need for greater and lower and the issuer’s need for greater and lower.

SHORT ANSWER QUESTIONS

Refer to Chapter 17, pages 571–580 in Financial Management and Analysis.

1. What is participating preferred stock and why are there few of these issues?
2. Explain the differences between convertible preferred stock and mandatory convertible preferred stock. Which are preferred by investors and which by issuers?

3. Are there voting rights attached to preferred stock?
4. What factors influence an investor’s decision to convert callable preferred stock?

5. What are the advantages and disadvantages for a company issuing preferred stock?
PROBLEMS

Refer to Chapter 17, pages 571–580 in Financial Management and Analysis.

1. Semi-Nowl Corporation has 1.1 million shares of 8% cumulative preferred stock outstanding with a stated value of $100 per share. If dividends are not paid for four years, what will be the amount of arrearage?

2. Suppose you own 500 shares of FSU Inc. 12% convertible preferred stock. If each preferred share is convertible into 25 common shares, what is the conversion value of your 5,000 preferred shares if the common stock is trading at $30 per share?
3. KLM Company issued $3 million of 9.75% $80 par preferred shares in 2001. Calculate the total amount of dividends paid on this issue per year and the annual amount of the dividends per share.
1. The combination of __________ and equity used to __________ a firm’s projects is referred to as its __________ structure. The __________ structure of a firm is some mix of debt, internally generated __________, and new __________.

2. Failure to pay __________ or principal as promised may result in __________ distress. __________ distress is the condition where a firm makes __________ under pressure to satisfy its legal obligations to its __________. These decisions may __________ be in the best interest of the owners of the firm.

3. When __________ financing is used instead of __________, the owners don’t share the earnings, all they must do is pay their __________ the interest on
debt. But when ____________ financing is used instead of ____________, the owners must ____________ the increased earnings with the additional owners, diluting their ____________ on equity and ____________ per share.

4. We can measure the ____________ associated with alternative forms of financing by calculating the ____________ deviation and the ____________ of variation of the possible earnings per share. The ____________ the ____________ deviation and ____________ of variation the ____________ the risk.

5. The discount ____________ is referred to as the ____________ rate, which is the ____________ rate that translates ____________ earnings into a current ____________. The ____________ rate reflects the uncertainty associated with the expected earnings in the ____________. The more ____________ the future earnings, the ____________ a dollar of future income is worth today and the ____________ the capitalization rate.

6. The risk ____________ is the difference between the ____________ rate for the net ____________ to owners and the ____________ rate on ____________ to creditors (the ____________), which is assumed to be risk ____________. The ____________ the use of ____________, the ____________ the ____________ premium.
7. The benefit from interest deductibility is referred to as the interest ______________. It is equal to the ______________ tax rate times the interest ______________. An alternative calculation is the ______________ tax rate times the ______________ rate on debt times the face ______________ of debt.

8. If a firm has deductions that ______________ income, the result is a net ______________ loss. The firm does not have to pay ______________ in the year of the ______________ and may carry this ______________ to another tax year. This ______________ may be applied against ______________ years’ taxable ______________, with some limits.

9. For firms whose owners have ______________ liability, the more the ______________ are financed with ______________, the greater the incentive to take on ______________ projects, leaving ______________ “holding the bag” if the projects turn out to be ______________. There is a(n) ______________ of interest between ______________ interests and ______________ interests.

10. We can classify ______________ costs into ______________ and ______________ costs. ______________ costs include the legal, administrative, and ______________ costs associated with the filing for bankruptcy and the administration of bankruptcy. The ______________ costs of bankruptcy are more ______________ to evaluate.
SHORT ANSWER QUESTIONS

Refer to Chapter 18, pages 583–621 in Financial Management and Analysis.

1. Why can debt financing be more attractive than equity financing?

2. Why do debt ratios differ across industries? Within industries?
3. What is the leverage effect? What happens if earnings are insufficient to cover interest payments?

4. How does the tax shield affect the value of the firm?
5. What is the relationship between financial distress and capital structure? What are the factors to be considered?

6. What factors should be taken into consideration in capital structure decisions?
PROBLEMS

Refer to Chapter 18, pages 583–621 in *Financial Management and Analysis*.

1. Firm Z has $34,000 in debt and $50,000 in equity. What is Firm Z’s debt ratio and debt-to-assets ratio? What do the ratios mean?

2. What is the capitalization rate for equity for Firm Z in problem 1, assuming there are no taxes and the cost of equity is 9% and the cost of debt is 5%?
3. Finance-R-Us is considering three possible financing arrangements to raise $1 million of new capital. Currently, the capital structure consists of no debt and $250,000 in equity. There are 100,000 shares of common stock currently outstanding, selling at $2.50 per share. Expected earnings of $200,000, before interest and taxes, are expected for next period. The interest rate on any debt obtained should be 10%. Calculate the earnings to owners, earnings per share, and the distribution of income between creditors, shareholders, and the government for the following three alternatives:

- Alternative 1: Finance with only new equity.
Alternative 2: Finance using 50% debt and 50% equity.

Alternative 3: Finance using only new debt.
4. The O.K. Company has $100,000 of debt in its capital structure. The interest rate on this debt is 12%. What is the present value of the tax shield from interest deductibility if the corporate tax rate on income is 35%?
FILL IN THE BLANKS

Refer to Chapter 19, pages 627–648 in Financial Management and Analysis.

1. The ____________ cycle in part determines how long it takes for a firm to ____________ cash from its short-term ____________ and, therefore, the ____________ and cost of its investment in ____________ assets, or ____________ capital. Working capital is the capital that managers can immediately put to work to generate the ____________ of capital investment. Working capital is also known as ____________ capital or ____________ capital.

2. The firm’s ____________ cycle is the time it takes the firm to turn its investment in inventory into cash. It affects how much the firm ties up in ____________ assets. The operating cycle comprises the time it takes to: ____________ the goods, ____________ them, and ____________ on their sale. The ____________ operating cycle considers the
benefit from purchasing goods on ______________ and is the operating cycle less the number of days of on which the account is still owed. The ______________ the net operating cycle, the ______________ the investment in current assets.

3. Cash flows ______________ of a firm as it pays for the goods and services it ______________ from others. Cash flows ______________ the firm as customers ______________ for the goods and services they ______________. When we refer to cash, we mean the amount of ______________ and ______________ assets—currency, coin, and bank balances. When we refer to cash ______________, we mean management of cash ______________ and ______________, as well as the stock of ______________ on hand.

4. There is always some degree of ______________ about future cash needs. Firms typically hold an additional balance, referred to as a(n) ______________ balance, just in case transactions ______________ exceed the transactions ______________. But how much to keep as a(n) ______________ depends on the ______________ of the transactions uncertainty—how well we can ______________ our transactions needs.

5. If a firm needs cash, it must either ______________ an asset or ______________ cash. There are ______________ costs associated with either. ______________ costs are the fees, ______________, or other costs associated with ______________ assets or ______________ to get cash;
they are analogous to the ordering costs for ____________.

6. Speeding up ____________ cash is done by using a(n) ____________ system, through the selection of ____________, processing the ____________ within the firm, ____________ collection, and ____________ banking. A(n) ____________ is a location where banks meet to exchange checks drawn on each other, and a clearinghouse bank is a participant in a clearinghouse. Being a member of a clearinghouse can ____________ check clearing time by up to one-half a day relative to clearing checks through the ____________ system. A(n) ____________ bank is a bank that has an agreement with a clearinghouse bank to exchange its checks in the clearinghouse.

7. In addition to speeding up incoming cash, ____________ down payment of cash is important. It can be done through ____________ disbursements by ____________ bank balances by depositing only what is needed to make ____________ demands on the account and ____________ disbursement by paying what is ____________ with checks drawn on a bank that is ____________ readily accessible to the payee, ____________ the check processing ____________.

8. The primary role of marketable securities is to store cash that isn’t needed ____________, but may be needed soon. Examples of these securities are ____________ of
deposit, ___________ paper, ___________ deposits, and ___________ bills. When evaluating the ___________ of the investment, the following ___________ should be considered: ___________ risk, ___________ power risk, ___________ rate risk, ___________ rate risk, and ___________ risk.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 19, pages 627–648 in *Financial Management and Analysis*.

1. What factors determine a firm’s investment in current assets? What types of firms have more investment in current assets than others?
2. What is cash forecasting and what is its relationship to the operating cycle and net operating cycle?

3. Why would a firm hold cash balances?
4. How much cash should a firm hold and what are the costs associated with doing so?

5. What is the lockbox system and how does it function?

**PROBLEMS**

Refer to Chapter 19, pages 627–648 in *Financial Management and Analysis*.

1. P&R Corporation uses about $1 million in cash each month. The sale of marketable securities to meet any cash deficiencies costs the firm $100 per transaction. P&R
invests its short-term funds in securities which earn an average of 7%.

a. If each time the firm needs cash it sells $400,000 of securities, what is the holding cost associated with the cash investment?

b. If each time the firm needs cash it sells $400,000 of securities, what are the transaction costs associated with the cash investment?
c. Using the Baumol model, what level of cash infusion minimizes costs associated with cash?

2. Assume that the cash flows vary throughout the year. Because of uncertainty surrounding the cash flows, P&R has decided to carry a minimum balance of $500,000 in cash. The variance of the daily cash flows is $75,000. They operate on a 365-day year.

a. At what point will a new cash infusion be needed?
b. At what point should excess cash be invested in marketable securities?

3. DOWNS Shipping ships packages nationwide. Its collection float averages $250,000 a day. DOWNS is considering a lockbox system which was proposed by its bank in Omaha, Nebraska, because it is in the middle of the country. The system will cost the firm $35,000, but it is estimated that it will reduce the collection float by three days. Additional processing costs of $5,000 a year will be saved by the firm because the payments will be sent directly to the bank. The system will necessitate the use of wire transfers, which will cost the firm $9,000 per year. If DOWNS can earn 10% on its short-term investments, is the system worthwhile?
4. Jewlez, Inc. is a precious stone importer and wholesaler. Jewlez sells approximately 400,000 cut and polished stones each year. The sales occur uniformly throughout the year. Because of high insurance fees, the carrying cost is $7 per stone. Due to the fact that most of its orders from customers are in advance, Jewlez can let its inventory drop to zero before reordering. It costs the firm $190 each time it orders and Jewlez currently orders 5,000 stones at a time. Is this the most cost effective order size?
FILL IN THE BLANKS

Refer to Chapter 20, pages 651–673 in Financial Management And Analysis.

1. The majority of a firm’s investment is in ____________ assets, however, it is tied up in accounts ____________ and ____________ which represent investments that are necessary for day-to-day ____________ of the business. A firm needs ____________, so that it will have ____________ to sell and the ____________ of inventory differs among firms largely because of the ____________ of the products they sell.

2. Firms extend ____________ to customers to help stimulate ____________. Extending ____________ is both a(n) ____________ and a(n) ____________ decision. When a firm extends credit to its customers, it does so to encourage ____________ of its goods and ____________.
The most direct ______________ is the ______________ on the increased sales.

3. The ______________ cost is similar to the ______________ cost that we looked at for cash balances: the product of the ______________ cost of investing in accounts receivable and the ______________ in the accounts. The ______________ cost is the ______________ the firm could have earned on its next best ______________. The investment is the amount the firm has ______________ to generate ______________.

4. The effective cost of trade ______________ for a customer is calculated by determining the effective ______________ cost for the length of time the credit is extended. ______________ this cost makes it ______________ with the cost of other forms of credit.

5. ______________ terms consist of the ______________ amount of credit, the length of period allowed for ______________, and the ______________ rate and ______________ period, if any. The purpose of ______________ is to attract ______________, thereby increasing ______________, and to encourage the early ______________ of accounts, thereby reducing the amount tied up in accounts ______________.

6. ______________ policies specify the procedures for collecting ______________ accounts. Collection could start with
polite ____________, continuing in progressively ____________ steps, and ending by placing the account in the hands of a(n) ____________ agency. In designing the collection procedures, you must keep in mind that ____________ efforts to collect may result in ____________ future sales.

7. ____________ how well accounts ____________ are managed can be done using financial ____________ and ____________ schedules. Financial ____________ can be used to get an overall picture of how fast collection is going on accounts ____________. ____________ schedules, which are breakdowns of accounts receivable by how ____________ they have been around, help give a more detailed picture of the ____________ efforts.

8. Ideally, a firm wants to design its ____________ policy so that the marginal ____________ from extending ____________ equals its marginal ____________ of extending credit. At this point, the firm ____________ owners’ wealth. But the benefits and costs are ____________. The best the firm can do in ____________ the benefits and costs from its credit and collection policies is to learn from its own ____________ or from the experience of others.

9. Some firms choose to form a wholly-owned ____________, that is, a corporation ____________ by the parent firm in order to provide the ____________ granting and ____________ function of the parent firm. The sole
purpose of __________ finance subsidiaries is to __________ the customers’ purchase of the parent firm’s ___________. These subsidiaries can stimulate __________ by providing easy access to ____________.

10. ____________ is the stock of physical goods for eventual sale. ____________ consists of raw material, work-in-process, and finished goods available for _____________. There are many ____________ in a decision of how much inventory to have on hand. As with accounts receivable, there is a trade-off between the costs of ____________ in inventory and the costs of ____________ inventory. There’s a cost to too much ____________ and there’s a cost of too ____________ inventory.

11. ____________ inventory can be done by looking at financial ____________ in much the same way we can monitor receivables. The number of days of ____________ is the ratio of the dollar value of ____________ at a point in time to the cost of goods sold per day. This ratio is an estimate of the number of ____________ worth of ____________ you have on hand. Combined with an estimate of the ____________ for your goods, this ratio helps you in planning your ____________ and ____________ of goods. The inventory turnover ratio tells, on average, how many times ____________ flows through the firm—from raw materials to goods sold—during the period.
SHORT ANSWER QUESTIONS

Refer to Chapter 20, pages 651–673 in *Financial Management and Analysis*.

1. What is the relationship between a firm extending credit and accounts receivable?

2. What are the implicit costs with granting discounts? What are the costs of credit?
3. What factors should be considered when extending credit?

4. What factors influence the assessment of credit?
5. What are the reasons for holding inventory?

6. Explain the two models of inventory management.

PROBLEMS

Refer to Chapter 20, pages 651–673 in Financial Management and Analysis.

1. The Retton Corporation currently offers terms of 2/20, net 60 to its customers and is considering a change to 4/15, net 60. The credit manager believes that this will reduce the firm’s days of credit from the current 40 days to 30
days, in addition to increasing sales due to the higher discount. Sales are expected to increase from the present $500,000 to $800,000. About 60% of Retton’s customers take the discount now, and it is estimated that the percentage will increase to 75%. The firm plans to maintain its present contribution margin of 30%. Processing costs and bad debt losses are not expected to change. Retton can earn 12% on its short-term investments.

a. What is the current cost of trade credit for Retton’s customers, and what will it be if Retton makes the proposed change?

b. What is the cost to Retton for changing the discount?
c. What is the change in the carrying cost of accounts receivable for Retton?

d. Should Retton make the change?
Management of Short-Term Financing

FILL IN THE BLANKS

Refer to Chapter 21, pages 679–714 in Financial Management and Analysis.

1. A corporation invests in short-term assets, such as ____________, accounts ____________, inventory, and marketable ____________. Short-term assets are also referred to as ____________ capital, because they are put to work to generate sales, which eventually result in cash flow that ultimately generates _____________. ____________ capital comprises ____________ working capital, the investment necessary to satisfy the ____________ demands of _____________. and ____________ working capital, the ____________ between actual working capital and permanent working capital.

2. The ____________ cost of borrowing is the cost of ____________, considering both ____________ and ____________ costs. This effective cost is the cost of
for a given period, the duration of time over which interest is paid and at the end of which ____________ is calculated.

3. ____________ credit is granted by a supplier to a customer purchasing ____________ or ____________. ____________ credit arises as the customer acquires goods or services and promises to pay in the _____________. From the ____________ point of view, trade credit is a way of making more _____________. From the ____________ point of view, trade credit is an easy way to finance the ____________ of goods. For the ____________, trade credit creates accounts ____________; for the ____________, trade credit creates accounts ____________.

4. Managing accounts ____________ involves negotiating the terms of ____________, as well as deciding when to pay amounts due. Remember that accounts ____________ are the “flip side” of accounts ____________—accounts payable are someone else’s accounts receivable. Suppliers are trying to ____________ costs, in terms of funds tied up in accounts receivables and bad debts. Yet, at the same time, they are extending ____________ to generate more ____________.

5. Firms try to set policies so terms of credit are ____________ within industries. However, if a firm is an important ____________ of a particular supplier, ____________ terms of credit may be negotiated. In cal-
Calculating the ____________ of trade credit, managers know that paying within the ____________ period uses free credit—meaning that payment can be ____________ and then paid the same as cash on the date of purchase. Also, paying ____________ the discount period ____________ the cost of credit.

6. ____________ financing is backed by some specific ____________ or assets of the borrower. A borrower’s ____________ used in this way are referred to as _____________. The ____________ acts as a backup source of ____________ for the lender if the borrower fails to abide by the terms of the loan. The collateral for short-term financing arrangements are usually ____________ assets—___________ securities, accounts ____________ or _____________.

7. Accounts ____________ can be used as collateral for a(n) ____________ loan. There are three types of financing arrangements that use accounts ____________ as security: ____________, ____________, and ____________. Securitizing assets, also referred to as asset ____________, is an important financing arrangement for raising ____________ to ____________ term funds.

8. In an assignment of ____________, the lender makes a loan accepting the borrower’s accounts ____________ as the _____________. The borrower receives immediate ____________ in exchange for a(n) ____________
note to the lender. The borrower’s customers are generally instructed to send their payments to the lender, who uses these payments to reduce the ___________ of the loan.

9. Instead of simply using accounts ___________ as ___________, the borrower can ___________ them outright to another party—called a(n) ___________—typically a bank or a commercial finance company. Selling the ___________—called factoring—may be done with or without recourse. The factor performs all the accounts receivable functions: evaluating customers’ ___________, approving ___________, and ___________ on accounts receivable.

10. A(n) ___________ agreement, also referred to as a(n) ___________, is the sale of a security with a commitment by the seller to buy the same security back from the purchaser at a specified price at a designated future date. The seller repurchases the security at the repurchase ___________, on the repurchase ___________. A repurchase agreement is a(n) ___________ loan, where the collateral is the ___________. The interest rate is the ___________ rate. When the term of the loan is one day, it is a(n) ___________ repo and a loan for more than one day is called a(n) ___________ repo.
SHORT ANSWER QUESTIONS

Refer to Chapter 21, pages 679–714 in Financial Management and Analysis.

1. What are the costs of borrowing for all manner of loans?

2. What is the difference between secured and unsecured financing?
3. Why is it that as the credit period lengthens, the cost of trade credit declines?

4. When managing accounts payable, what are the consequences of paying late?
5. Why might high and low turnover be good?

6. What are the types of financing arrangements and some of their characteristics?

PROBLEMS

Refer to Chapter 21, pages 679–714 in Financial Management and Analysis.

1. The CZ company is trying to decide among four different financing alternatives to finance $100,000:
a. Bank A has offered to lend the firm the whole amount for six months at an APR of 16%. The bank will require a compensating balance of 17% of the face value of the loan and will charge a $1,000 loan origination fee.

b. Bank B has offered to lend the entire amount for three months at an APR of 20%. The loan is a discount loan, and Bank B requires a compensating balance requirement of 10%.

c. Bank C has offered to lend the firm the entire amount for one month at an APR of 24%. The loan is a single-payment loan with interest and principal to be paid at the end of the month. There is no compensating balance requirement and no loan origination fee.

d. CZ can forgo its supplier discounts for the month. The credit terms are 3/10, net 45.

Which is the cheapest source of financing?

2. The Safe-T Corporation used a repurchase agreement to meet its need for short-term financing. It received $9.5 million for the sale of $10 million in face value of U.S. Treasury bills that had a market value of $9.7 million, and
it repurchased the bills thirty days later for $9.6 million. What is the effective annual cost?

3. Rustee Iron Works is considering using a field warehouse loan as part of its short-term financing. It will require a loan of $1 million. Interest on the loan will be at an annual rate of 11%, single-payment interest, paid at the end of the year. The field warehouse charges 3.5% of the face value of the loan, payable at the beginning of the year. What is the effective cost of the warehousing arrangement?

4. Can-Do Corporation has issued five-month commercial paper with a $250,000 face value. The firm’s proceeds
from the sale of the paper are $237,500. What is the effective annual cost of this loan?

5. The Bags-O-Chips Company wants to use $800,000 of accounts receivable to secure financing for the next month. We’re #1 Finance Company is willing to lend Chips 65% of the face value of the receivables at 40 basis points above the prime rate, which is currently 4% APR. We’re #2 Finance Company will factor Chips receivables, advancing 80% of the receivables and charging a fee of 2% of Chips total receivables. This fee will be paid up front. Interest will be at 30 basis points above the prime rate. We’re #2 also will be performing all credit functions, saving Chips an estimated $4,000 for the month. Which arrangement is least costly?
CHAPTER 22

Financial Ratio Analysis

FILL IN THE BLANKS

Refer to Chapter 22, pages 721–765 in Financial Management and Analysis.

1. A(n) ______________ is a mathematical relation between two quantities. A financial ______________ is a(n) ______________ between one bit of financial information and another. Ratios can be classified according to the way they are ______________ and the financial ______________ they are describing. There are as many different financial ratios as there are possible ______________ of items appearing on financial ______________.

2. Return-on-_____________ ratios compare measures of ______________, such as earnings or net income, with measures of ______________. The return on ______________, also called the basic earning ______________ ratio, is the ratio of ______________ earnings to total assets. The return on ______________ is the ratio of the net ______________ shareholders receive to their ______________ in the stock.
3. The method of analyzing ___________ ratios in terms of ___________ margin and ___________ ratios, referred to as the ___________ System, is credited to the E.I. Du Pont Corporation. Du Pont’s management developed this system of breaking down return ratios into their ___________ to help managers understand the “_______________” behind the firm’s ___________.

4. ___________ reflects the ability of a firm to meet its ___________-term obligations using those assets that are most readily converted into ___________. Assets that may be converted into ___________ in a short period of time are referred to as ___________ assets; they are listed in financial statements as ___________ assets. ___________ assets are often referred to as ___________ capital, because they represent the resources needed for the ___________ operations of the firm’s long-term capital investments.

5. How much liquidity a firm needs depends on its ___________ cycle. The ___________ cycle is the duration from the time ___________ is invested in goods and ___________ to the time that investment produces ___________. The ___________ the ___________ cycle, the ___________ the amount of net ___________ capital required.

6. ___________ margin ratios compare components of ___________ with ___________. They give us an
idea of what factors make up a firm’s ____________ and are usually expressed as a portion of each ____________ of sales. The analyst would focus on ____________ profit (sales less cost of goods sold), a measure of income that is the direct result of ____________ management. Comparing ____________ profit with ____________ produces the gross profit margin.

7. ____________ ratios, or turnover ratios, can be used to evaluate the benefits produced by specific ____________, such as ____________ or accounts ____________ or to evaluate the benefits produced by the totality of the firm’s assets. The ____________ turnover ratio indicates how quickly a firm has used inventory to generate the ____________ and ____________ sold. The accounts ____________ turnover ratio measures how effectively a firm uses ____________ extended to customers. The ____________ turnover ratio tells how many times during the year the ____________ of a firm’s total assets is generated in ____________.

8. Financial ____________ is associated with a firm’s ability to satisfy its ____________ obligations, and is often measured using the extent to which ____________ financing is used relative to _____________. Financial ____________ ratios are used to assess how much financial ____________ the firm has taken on. There are two types of financial ____________ ratios: ____________ percentages and ____________ ratios.
9. __________ coverage ratio, also called times __________ ratio, measures a firm’s ability to handle financial __________. This ratio indicates how well the firm can meet the __________ payments associated with __________. The __________ the interest coverage ratio, the __________ able the firm is to pay its __________ expenses.

10. __________ analysis is a method of analysis in which the components of a financial __________ are compared with each other. The first step in __________ analysis is to break down a financial statement—either the __________ sheet or the __________ statement—into its parts. The next step is to __________ the proportion that each item represents relative to some __________. In common-size analysis of the __________ sheet, the benchmark is total __________. For the __________ statement, the benchmark is __________.
SHORT ANSWER QUESTIONS

Refer to Chapter 22, pages 721–765 in *Financial Management and Analysis*.

1. How is financial information presented? How is the information classified?

2. What aspects of operating performance and financial condition do financial ratios evaluate?
3. What is the Du Pont System and how is it used?

4. What is the difference between book value and market value and how does it affect financial ratio analysis?
5. Are there any concerns and/or cautions when using financial ratios?

PROBLEMS

Refer to Chapter 22, pages 721–765 in Financial Management and Analysis.

1. Using Wang Laboratories’ balance sheet and income statement for the year ending June 30, 1995, shown on page 773 of Financial Management and Analysis, make the following calculations assuming a 365-day year, all sales and purchases are on credit, and that the financial data is in hundreds of thousands:

   a. Current ratio
b. Quick ratio

c. Inventory turnover ratio

d. Total asset turnover ratio
e. Gross profit margin

f. Operating profit margin

g. Net profit margin
h. Debt-to-assets ratio

i. Debt-to-equity ratio

j. Return on assets (basic earning power)
k. Return on equity

l. Number of days of inventory

m. Number of days of credit
n. Number of days of purchases

o. Operating cycle

p. Net operating cycle
2. Use the information from problem 1 to answer the following: Given the following industry average ratios, what is Wang’s standing as it emerges from bankruptcy?

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Industry Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>2 times</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>1 times</td>
</tr>
<tr>
<td>Number of days of credit</td>
<td>90 days</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>35 times</td>
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<tr>
<td>Total asset turnover</td>
<td>3 times</td>
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<tr>
<td>Debt-to-equity ratio</td>
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<td>Operating profit margin</td>
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<td>Net profit margin</td>
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<tr>
<td>Return on assets</td>
<td>9%</td>
</tr>
<tr>
<td>Return on equity</td>
<td>11%</td>
</tr>
</tbody>
</table>
FILL IN THE BLANKS

Refer to Chapter 23, pages 775–796 in Financial Management and Analysis.

1. The theory of stock __________ makes sense. If a company’s __________ cash flows could accurately be __________, then the value of the company’s __________ today could be determined. Therefore the __________ could be classified as __________- or __________-valued by the market.

2. __________ future cash flows is difficult. As an alternative, examination of the __________ and __________ relation between stock prices and some fundamental value information, such as __________ or __________ is needed. Then, using this relation, the __________ of a share of stock can be estimated.

3. Earnings can really mean many different things depending on the context. If a financial analyst is evaluating the per-
formance of a company’s ______________, the focus is on ______________ earnings or earnings before interest and taxes, (______________). If the analyst is evaluating the performance of a company ______________, the focus is on ______________, which is EBIT ______________ interest and taxes. If the analyst is evaluating the performance of the company from a(n) ______________ perspective, the earnings are the earnings available to common shareholders—EBIT less interest, taxes, and ______________ stock dividends.

4. We often refer to earnings in terms of the ______________ per share of stock, rather than as a total ______________ amount generated in a period. Expressing a company’s net ______________ in terms of income per ______________ allows us to compare it with the company’s ______________ price per share. Earnings per share (______________) is earnings available for ______________ shareholders, divided by the number of common shares ______________.

5. ______________ earnings per share are earnings minus preferred dividends, divided by the average number of shares outstanding. ______________ earnings per share are earnings minus preferred dividends, divided by the number of shares outstanding considering all ______________ securities. Companies that report ______________ per share for any prior period must ______________ these amounts in terms of the new basic and diluted calculations.
6. The most common financial ratio forecast is ______________ earnings per share of a firm, though projections of ______________ flows and stock ______________ are available. For most companies whose stock is ______________-traded, there are a number of ______________ who analyze the stock and make forecasts regarding earnings in the future. In addition, several service ______________ collect and report statistics of analysts’ ______________.

7. The ______________ earnings forecast is the ______________ of the earnings per share for a given stock. Services that provide analyst forecast information also provide earnings ______________ analysis, the difference between ______________ earnings per share and the ______________ earnings per share, where the consensus forecast is used as the ______________ earnings per share.

8. ______________ earnings forecasts and the forecasts of ______________ analysts are used to compute several measures that researchers have found to be important factors in ______________ stock returns such as earnings ______________, or earnings ______________. This is a measure of consensus earnings ______________ found by computing the growth in earnings based on actual earnings for the ______________ period and the consensus earnings forecasts for the ______________ period.
9. Relationships in which EPS in a(n) ______________ period is assumed to depend on EPS in one or more ______________ periods are called ______________ models. Often the data used in forecasting EPS are ______________ and ______________ EPS of the company, but it is critical that EPS be ______________ to reflect changes in accounting requirements. For example, an analyst who used a(n) ______________ model would want to adjust ______________ reported EPS based on primary, diluted, or fully diluted EPS for the new reporting requirements.

10. Many investors are interested in how the ______________ are valued by the market. A measure of how these earnings are valued is the ______________ ratio (______________). This ratio compares the ______________ per common share with ______________ per common share. The result is a multiple—the value of a share of ______________ expressed as a multiple of ______________ per share. The ______________ of this measure is referred to as the earnings ______________ (______________).
SHORT ANSWER QUESTIONS

Refer to Chapter 23, pages 775–796 in Financial Management and Analysis

1. What determines the market price of common stock?

2. What is earnings management and why is it such a concern?
3. What is the relationship between earnings and stock price?

4. Why do the number of common shares outstanding change? How does the change affect EPS?
5. How accurate are EPS forecasts?

PROBLEMS

Refer to Chapter 23, pages 775–796 in Financial Management and Analysis

1. Too-Tired Company had 1.5 million shares of stock outstanding at the beginning of the year and 1.87 million shares at the end of the year. After issuing 0.37 million shares at the beginning of the second quarter, if Too-Tired had earnings available to common shareholders of $6.5 million, what is the company’s earnings per share?
2. HiGro Corporation had $1.80 in earnings per share and paid dividends of $0.30 per share in 2001. HiGro was selling for $28.50 a share at the end of 2001. The book value of HiGro’s common equity at the time was $22.00 per share. HiGro has no preferred stock.

a. What was HiGro’s dividend payout ratio for 2001?

b. What was the P/E ratio at the end of 2001?
3. For the 1999 fiscal year, Outtel Corporation had net income of $4,355 million. At the beginning of the year, there were 1,323 million shares outstanding and at the end of the year there were 1,300 million shares. There are 300 million potentially dilutive shares during 1999 from employee stock option plans and warrants. Calculate the basic and diluted earnings per share.

c. Are investors willing to pay more for the stock than its earnings per share?
4. The Sagging Bay Company announced earnings of $1.82 per share for the 2002 fiscal year. The consensus analyst forecast for 2002 earnings was $1.95.

   a. Calculate the forecast error for Sagging Bay.

   b. Explain the expected stock price reaction in response to the worse-than-expected earnings.
FILL IN THE BLANKS

Refer to Chapter 24, pages 797–817 in Financial Management and Analysis.

1. ______________ flows are essential ingredients in ______________: The value of a company today is the present ______________ of its expected ______________ cash flows. Therefore, understanding ______________ and ______________ cash flows may help the analyst in forecasting future cash flows and, hence determine the value of the company, and also may aid in assessing the ability of a firm to maintain current ______________ and its current capital ______________ policy without relying on external ______________.

2. The primary difficulty with ______________ a cash flow is that it is a flow: cash flows ______________ and cash flows ______________ of the company. At any point in time there is a stock of ______________ on hand, but it varies among companies because of the ______________ of the
company, the cash ______________ of the business, and the company’s management of ______________ capital.

3. From the basic cash flow, the ______________ cash needs are subtracted resulting in a cash flow referred to as ______________ cash flow. By restructuring the ______________ of cash flows in this way, the analyst can see how much ______________ the company has when it must make business ______________ that may adversely impact the long-term financial ______________ of the enterprise.

4. There is ______________ one correct method of ______________ free cash flow and different analysts may arrive at different estimates for a company. The problem is that because it is impossible to ______________ free cash flow as dictated by the theory, so many ______________ have arisen to ______________ this cash flow.

5. The ______________ cash flow (______________) is free cash flow less interest and other financing costs and taxes. In this approach, free cash flow is defined as ______________ before depreciation, interest, and taxes ______________ capital expenditures. Capital ______________ encompass all capital spending, whether for ______________ or ______________ and no changes in ______________ capital are considered.
6. ____________ cash flow gives the analyst an idea of the ____________ cash flow of the company. This cash flow measure may be useful from a(n) ____________ perspective in terms of evaluating the company’s ____________ to fund additional ____________. From a(n) ____________ perspective, net cash flow net of dividends may be an appropriate measure because this represents the cash flow that is ____________ in the company.

7. A useful ratio to help further assess a company’s cash flow is the cash flow to ____________ ratio, or ____________ coverage ratio. This ratio gives the analyst information about the financial ____________ of the company and is particularly useful for ____________-intensive firms and utilities. The ____________ the ratio, the ____________ the financial flexibility.

8. Another useful cash flow ratio is the cash flow to ____________ ratio where debt can be represented as total ____________, long-term ____________, or a debt measure that captures a specific range of maturity (e.g., debt maturing in 5 years). This ratio gives a measure of a company’s ____________ to meet maturing ____________ obligations, thus it is a measure of a company’s ____________ quality.

9. The analysis of cash flows provides ____________ that can be used along with other financial data to help the
QUESTIONS AND PROBLEMS

analyst assess the financial ______________ of a company. ______________ companies tend to have relatively stable relations among the cash flows while ______________ companies exhibit declining cash flows from ______________ and financing and ______________ cash flows for investment one and two years prior to the bankruptcy. Further, ______________ companies tend to expend ______________ cash flows to financing sources than they bring in during the year prior to bankruptcy.

SHORT ANSWER QUESTIONS

Refer to Chapter 24, pages 797–817 in Financial Management and Analysis.

1. What is cash flow and how is it measured?
2. Explain the direct and indirect method of reporting cash flow.

3. What are the patterns of the cash flows for the different types and maturities of firms?
4. What is free cash flow and why is its important?

5. What can cash flow analysis reveal?

**PROBLEMS**

Refer to Chapter 24, pages 797–817 in *Financial Management and Analysis*.

1. Calculate free cash flow, net free cash flow, and net cash flow for the Krunchy Krust Donuts Company. Their financials are as follows:
Krunchy Krust Donuts, Income Statement, in millions

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<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Total Revenue</td>
<td>$56</td>
</tr>
<tr>
<td>Cost of revenue</td>
<td>$3</td>
</tr>
<tr>
<td>Gross profit</td>
<td>$53</td>
</tr>
</tbody>
</table>

**Operating Expenses**

- Selling general and administrative expenses: $8
- Nonrecurring: $(1)
- Other operating expenses: $2
- Operating income: $24
- Total other income and expenses net: $(1)
- Earnings before interest and taxes: $21
- Interest expense: $2
- Income before taxes: $19
- Income tax expense: $7
- Net Income: $12

Krunchy Krust Donuts, Statement of Cash Flows, in millions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Net Income</td>
<td>$12</td>
</tr>
</tbody>
</table>

**Cash Flow Operating Activities**

- Depreciation: $4
- Adjustments to net income: $13

**Changes in Operating Activities**

- Changes in accounts receivables: $(3)
- Changes in liabilities: $(10)
- Changes in inventories: $(2)
- Changes in other operating activities: $(2)
- Cash flows from operating activities: $12

**Cash Flow Investing Activities**

- Capital expenditures: $(15)
- Investments: $7
- Other cash flows from investing activities: $(31)
- Cash flows from investing activities: $(39)

**Cash Flow Financing Activities**

- Sale/Purchase of stock: $8
- Net borrowings: $3
- Other cash flows from financing activities: $(2)
- Cash dividends paid: $(2)
- Cash flows from financing activities: $7

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in cash and cash equivalents</td>
<td>$(20)</td>
</tr>
</tbody>
</table>
1. Financial management decisions of most firms are not confined to ____________ borders. Many ____________ and ____________ decisions involve economies and firms outside a firm’s own domestic borders either directly, through ____________ transactions, or indirectly, through the effects of international issues on the ____________ economy. International ____________ management is the management of a firm’s assets and liabilities considering the ____________ economy in which the firm operates.

2. Trends and agreements throughout the twentieth century reduced _____________. The General ____________ on ____________ and Trade (GATT) is a forum for negotiating the reduction in trade _____________ on a multilat-
eral basis. Monetary cooperation and international trade is facilitated through the ____________ Fund (______________). The ____________ Union (E.U.) is an organization whose goal is to increase ____________ cooperation and integration among its European member countries. The North ____________ Free ____________ Agreement (______________) is a pact among Canada, Mexico, and the United States for the gradual removal of trade barriers for most ____________ produced and sold in North America.

3. A(n) ____________ company is a firm that does business in two or more _____________. Most large U.S. corporations are ____________ firms, deriving a large part of their income from operations beyond the U.S. _____________. Companies expand beyond their ____________ borders for many reasons, including: To gain access to new ____________, to achieve ____________ efficiency, to gain access to ____________, to reduce political and regulatory ____________, to diversify, and to gain access to ____________.

4. Financial managers must be aware of the issues relating to multiple _____________. In particular, the financial manager must be aware of ____________ rates and the related ____________ risk. The ____________ rate is the number of units of a given currency that can be purchased for one unit of another country’s ____________; the exchange rate tells us about the relative ____________ of any two currencies. Currency risk or ____________ risk is
the risk that the relative values of the domestic and foreign currencies will ______________ change.

5. When a currency ______________ value relative to other currencies, we say that the currency has ______________ if the change is due to changes in supply and demand, or been ______________ if the change is due to government intervention. If the currency ______________ value relative other currencies, we say that the currency has ______________ or been ______________.

6. If there are ______________ barriers or costs to trade across borders, the ______________ of a given product will be the ______________ regardless of where it is sold. This is referred to as the law of ______________ price: Where there are different ______________ on either side of the border, after adjusting for the difference in currencies, the ______________ of a good or service is the same across borders. In the case of different currencies, the law of one price is known as ______________ (______________).

7. Taxes paid by corporate entities can be classified into two types: ______________ taxes and ______________ taxes. The former includes taxes paid to the ______________ government based on ______________ income and possibly any ______________ income taxes. Indirect taxes include real estate appreciation, ______________ taxes, and miscellaneous taxes on ______________ transactions.
8. It is common for a company’s ______________ in different countries to buy and sell goods from each other. The price for the goods in such ______________ transactions is called a(n) ______________ price. Establishing transfer prices to promote goal ______________ within a(n) ______________ company is a complicated topic. In practice, a primary goal in the establishment of transfer prices is the minimization of worldwide ______________, ______________ taxes and ______________ duty taxes.

9. A corporation is not limited to raising funds in the capital market where it is domiciled. ______________ means the ______________ of capital markets throughout the world into a global capital market. From the perspective of a given country, capital markets can be classified into two markets: either a(n) ______________ market or a(n) ______________ market, and a(n) ______________ market. It can be decomposed into two parts: the ______________ market and the ______________ market. The ______________ market is where issuers ______________ in the country issue securities and where those securities are subsequently ______________.

10. The world capital markets can be classified as either completely ______________ or completely ______________. In a completely ______________ capital market, investors in one country are ______________ permitted to invest in the securities issued by an entity in another country. In a completely ______________ capital market there are ______________ restrictions to prevent investors from
investing in securities issued in any capital market throughout the world. Real-world capital markets are ______________ completely segmented nor completely integrated, but fall somewhere in between and are ______________ segmented or ______________ integrated.

11. A corporate treasurer seeking to raise funds via a(n) ______________ offering can issue in the ______________ sector of another country’s bond market or the ______________. The distinguishing features of the securities in this market are that they are ______________ by an international syndicate, at issuance they are offered ______________ to investors in a number of countries, they are issued ______________ the jurisdiction of any single country, and they are in ______________ form. The sector of the Euromarket in which bonds are traded is called the ______________ market.

12. The important elements of cash flows, ______________ of capital, and analysis are present in the ______________ capital budgeting decision whether the investment is ______________ or ______________. There are several sources of the added complexity: ______________ currency risk, restrictions on ______________, and ______________ risk. These risks and ______________ affect not only an investment’s cost of ______________ but also make the estimation of cash flows all the more difficult.
SHORT ANSWER QUESTIONS

Refer to Chapter 25, pages 823–858 in *Financial Management and Analysis*.

1. Why would a firm participate in the international market?

2. What is free trade?
3. How are corporations taxed?

4. How is taxable income determined?

5. What are IDRs and ADRs?
1. Consider the following exchange rates:

- U.S. $1 to 1,598 Venezuelan Bolivar’s
- U.S. $1 to 1.56 Australian dollars

a. Calculate the exchange rate of Venezuelan Bolivar’s to an Australian dollar.

b. Calculate the exchange rate of Australian dollars to a Venezuelan Bolivar.
3. Suppose that the exchange rate for U.S. $1 for another currency is such that U.S. $1 = 3.5 ARS (Argentine pesos). Further suppose that if the exchange rate remains the same, you will receive a 25% return on your investment in ARS currency over the next year’s period. As an investor, you are aware of the volatility in Argentina’s currency exchange so sudden movements are expected.

a. If the exchange rate were to change such that $1 = 50 ARS, what return do you expect on the investment?

b. If the exchange rate were to change such that $1 = 2 ARS, what return do you expect on the investment?
3. The 3W company is a U.S. corporation with a subsidiary in another country. 3W’s U.S. corporate marginal tax rate is 40% and the subsidiary operating in a foreign country has a marginal tax rate of 52%. 3W manufactures a product for U.S. $10 a unit and sells 2 million units at cost to the subsidiary who further finishes the unit for another $10 per unit and sells the completed product for $190 per unit. The fixed costs for 3W and the subsidiary are $1 million and $0.5 million, respectively.

a. What are the taxes and the net income of the parent, the subsidiary, and the company as a whole if the transfer price is set at $30 per unit? Include the worldwide net income and taxes.
b. What are the taxes and the net income of the parent, the subsidiary, and the company as a whole if the transfer price is raised to $50 per unit? Include the worldwide net income and taxes.
Borrowing Via Structured Finance Transactions

FILL IN THE BLANKS

Refer to Chapter 26 pages 861–880 in Financial Management and Analysis.

1. As an alternative to the issuance of a corporate ____________, a corporation can issue a security backed by ____________ or ____________. Securities that have loans or receivables as their ____________ are referred to as ____________-backed securities. The transaction in which asset-backed securities are created is referred to as a structured ____________ transaction or as a(n) ____________ financing.

2. An issuer seeking to raise funds via a(n) ____________ financing must establish itself as an issuer in the ____________-backed securities market. Once an issuer establishes itself in the market, it can look at both the corporate ____________ market and the ____________-backed securities market to determine the better
source. It will compare the of funds in the corporate bond market and the asset-backed securities market and select the one with the cost.

3. Analysis of the quality of the collateral depends on the type. The agencies will look at the underlying borrower’s to pay and the borrower’s in the asset. The borrower is the individual or business entity that took out the . The borrower’s equity will be a key as to whether a borrower has an economic incentive to or to the asset and pay off a(n).

4. While viewed as a(n)-party, in many asset-backed securities transactions, the is effectively the of the loans used as the collateral of the corporation seeking funding. The servicer also may be responsible for advancing when there are in payments that result in a temporary shortfall in payments to the investors in the securities issued in a structured transaction.

5. agencies look at the ability of a(n) to perform all the activities that a(n) will be responsible for before they assign a(n) rating to the bonds issued. If a(n)
is unacceptable, a structured finance transaction will ____________ be rated. The rating agency may require a(n) ____________ servicer if there is a concern about the ability of a servicer to perform.

6. Ratings companies analyze the ____________ of cash flow payments to test whether the collateral’s cash ____________ match the ____________ that must be made to satisfy the issuer’s ____________. This requires that the rating company make assumptions about ____________ and delinquencies under various interest ____________ scenarios. Based on its analysis of the collateral and the ____________ testing of the structure to assess the ____________ that the bondholders will ____________ be repaid in full, a rating agency will determine the amount of ____________ enhancement necessary for an issue to receive a particular ____________ rating.

7. The way credit ____________ works is that some third party is either paid a(n) ____________ or a(n) ____________ premium or earns extra ____________ on a security in the structure to assume ____________ risk. ____________ credit enhancement involves third-party guarantees such as insurance or a letter of ____________. ____________ credit enhancement includes overcollateralization, ____________-subordinated structure, and reserves. Deals will often have ____________ than one form of credit enhancement. The rating agencies specify the amount of credit enhancement to obtain a(n) ____________ credit rating.
8. Perhaps the ______________ form of credit enhancement to understand is ______________ or a letter of credit. In this form of credit enhancement, a(n) ______________ provider agrees, for a fee, to ______________ the performance of a certain amount of the collateral against defaults. Perhaps the biggest perceived disadvantage to this form of credit enhancement is so called ______________ risk. If the credit enhancement provider is ______________ then the bonds guaranteed by the enhancement provider are typically ______________ as well.

9. The ______________-subordinate structure is another form of ______________ credit enhancement that involves the subordination of some ______________ classes for the benefit of attaining a high investment-grade rating for other bond classes. A structure can have ______________ bond classes. The ______________ that must be offered on the bond classes are affected by the ______________ demanded by investors. The ______________ the credit rating of the bond class, the ______________ yield is demanded and the ______________ will be the proceeds received from the sale of the bonds for that class.

10. ______________ funds come in two forms: ______________ reserve funds and excess ______________. ______________ reserve funds are straight deposits of cash generated from issuance proceeds. In this case, part of the underwriting profits from the deal are ______________ into a fund and used to ______________ any losses. Excess ______________ accounts involve the allocation of excess spread into a sepa-
rate reserve account after paying out the ____________ to bondholders, the servicing ____________, and all other ____________ on a monthly basis.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 26 pages 861–880 in *Financial Management and Analysis*.

1. What is a structured finance transaction?

2. Why use a structured finance transaction?
3. What is a captive finance company?

4. What do rating agencies look at in rating asset-backed securities?
FILL IN THE BLANKS

Refer to Chapter 27, pages 883–914 in Financial Management and Analysis.

1. A(n) ______________ is a contract wherein, over the term of the ______________, the owner of the equipment permits another entity to use it in exchange for a promise by the latter to make a series of ______________. The owner of the equipment is referred to as the ______________. The entity that is being granted permission to use the equipment is referred to as the ______________.

2. ______________ leases fall into two general categories: ______________-oriented leases and ______________-oriented true leases. ______________-oriented leases, also referred to as ______________ leases, transfer all incidents of ownership of the leased property to the lessee and usually give the lessee a fixed ______________, bargain purchase option, or ______________ option not based on fair market value at the time of exercise. Substantial cost savings
can often be achieved through the use of ____________-oriented true leases in which the ____________ claims and retains the tax benefits of ownership and passes through to the ____________ a portion of such tax benefits in the form of reduced lease payments.

3. The most frequent ____________ cited by ____________ company representatives and ____________ is that leasing ____________ working capital. The reasoning is as follows: When a firm ____________ money to purchase equipment, the lending institution rarely provides an amount ____________ to the entire price of the equipment to be financed. Instead, the lender requires the ____________ firm to take a(n) ____________ position in the equipment by making a down ____________.

4. The amount of the down ____________ will depend on such factors as the type of ____________, the ____________ of the borrower, and prevailing ____________ conditions. ____________, in contrast, typically provides 100% financing because it does not require the firm to make a down payment. Moreover, costs incurred to acquire the equipment, such as ____________ and ____________ charges, are not usually covered by a loan agreement. They may, however, be structured into a(n) ____________ agreement.

5. Current financial reporting ____________ for leases require that lease obligations classified as ____________
leases be capitalized as a(n) ____________ on the ____________ sheet. A(n) ____________ lease is ____________ capitalized. Instead, certain information regarding such leases must be disclosed in a(n) ____________ to the ____________ statement. Many chief financial officers avoid ____________ leases to enhance the financial image of their corporations; instead they prefer ____________ leases.

6. With a(n) ____________ operating lease, the lessee can avoid the risk of ____________ by terminating the contract. However, the ____________ of risk is not without a(n) ____________ as the lease payments under such lease arrangements reflect the risk of obsolescence perceived by the lessor. At the end of the lease term, the ____________ of the obsolete equipment becomes the problem of the ____________. The risk of loss in residual ____________ that the lessee passes on to the lessor is embodied in the ____________ of the lease.

7. An advantage of leasing is that lease agreements typically do not impose financial ____________ and ____________ on management as does a(n) ____________ agreement used to finance the purchase of equipment. The historic reason for this in ____________ leases is that the ____________ Service discouraged ____________ leases from having attributes of ____________ agreements.
8. In a properly structured ______________ lease arrangement, the ______________ lease payment from leasing rather than borrowing can provide a lessee with a(n) ______________ cash flow. Whether the cash flow on a(n) ______________ basis after taking the residual value of the equipment into account is ______________ on a present value basis must be ascertained. Lease payments under a(n) ______________ lease will usually have ______________ impact on ______________ earnings during the early years of the lease than will ______________ and ______________ payments associated with the purchase of the same equipment.

9. Corporate lessors may be generally categorized as ______________ banks or their ______________, independent ______________ companies, ______________ leasing subsidiary companies of nonfinance companies, ______________ companies or their subsidiaries, ______________ banking firms, and subsidiaries of life or casualty ______________ companies.

10. Many banks and bank holding companies or their subsidiaries participate ______________ in leasing through ______________ relationships with independent and captive leasing companies. ______________ leasing or finance companies are generally ______________ of equipment manufacturers, and their primary purpose is to secure financing for the customers of the ______________ company. ______________ also may be involved in the ______________ financing of equipment other than that manufactured by their parent company.
11. Lease ___________ and financial ___________ can perform a useful service for both lessees and lessors in arranging ___________ leases. They can be especially helpful to a lessee by obtaining attractive ___________ from a legitimate investor and advising the lessee in ___________ and ___________ the transaction. While lease brokers and financial advisers typically represent ___________, they can be helpful to a(n) ___________ in finding solutions to negotiating issues. For its services as an intermediary, the broker or adviser receives a(n) ___________ commission. The amount of the remuneration depends on the ___________ and ___________ of the deal to the lessor in the prevailing economic ___________.

12. The ___________ lease provides the lessee with ___________ benefits and the lessor with ___________ benefits. The lease is treated as a(n) ___________ sheet item and protects the lessee’s ___________ of acquiring the residual value of the leased equipment at the termination of the lease.
SHORT ANSWER QUESTIONS

Refer to Chapter 27, pages 883–916 in Financial Management and Analysis.

1. Explain how leasing works.

2. What is the ultimate form of lease financing? Why is it the ultimate form?
3. Why lease?

4. What are the accounting practices for leases?

**PROBLEMS**

Refer to Chapter 27, pages 883–914 in *Financial Management and Analysis*.

1. The Xhaust Company is considering the acquisition of a machine that costs $150,000 if bought today. The company can buy or lease the machine. If Xhaust buys the machine, the machine would be depreciated as a 3-year
MACRS asset and is expected to have a salvage value of $5,000 at the end of the 5-year useful life. If leased, the payments are $35,000 each year for four years, payable at the beginning of each year. The marginal tax rate for Xhaust is 30% and the cost of capital is 12%. Assume that the lease is a net lease, that any tax benefits are realized in the year of the expense, and that there is no investment tax credit.

a. Calculate the depreciation for each year in the case of the purchase of this machine.

b. Calculate the direct cash flows from leasing initially and for each of the five years.
c. Calculate the adjusted discount rate.

d. Calculate the value of the lease.

e. Calculate the amortization of the equivalent loan.
Project Financing

1. ______________ financing is a debt obligation that is backed by the ______________ of an asset or credit support provided by a third party. The key in an asset ______________ is to remove the assets (i.e., loans and receivables) from the ______________ sheet of an entity. The special purpose ______________ (______________) is the entity that acquires the ______________ and sells the ______________ to purchase the assets.

2. Structured finance is used by ______________ to fund major projects. A benefit to using structured finance is that the lenders look to the cash ______________ from the project being financed rather than the corporation or ______________ seeking funding. This financing technique is called ______________ financing and uses the ______________ to accomplish its financing objectives.
3. While a(n) ______________ may be willing to look initially to the cash ______________ of a project as the source of funds for ______________ of the loan, the lender must also feel comfortable that the loan will in fact be ______________ on a(n) ______________-case basis. This may involve undertakings or direct or indirect ______________ by third parties who are motivated in some way to provide such guarantees.

4. The ______________ party in a project is its promoter or ______________. A project may have one or several ______________. The motivation of ______________ companies acting as sponsors is to profit in some way from the ______________ or ______________ of the project. The motivation of ______________ companies for sponsoring a project may be simply to make a(n) ______________ from selling the product produced by the project. In many instances, the motivation for the project is to provide ______________ or ______________ of a sponsor’s basic product or to ensure a source of supply vital to the sponsor’s business.

5. The ultimate goal in project financing is to arrange ______________ for a project which will benefit the ______________ and at the same not affect the ______________ standing or ______________ sheet. One way this can be accomplished is by using the credit of a(n) ______________ party to support the transaction. Such a party then becomes a sponsor. However, projects are rarely financed ______________ on their own merits without credit support.
6. Project ______________ regard a project as acceptable only after the plant or facility has been in ______________ for a sufficient period of ______________ to ensure that the plant will in fact ______________ the product or service at the price, in the ______________, and to the standards assumed in the financial ______________ that formed the basis for the financing. This ______________ risk period may run from a few months to several years.

7. Project financing can sometimes be used to improve the ______________ on the capital ______________ in a project by ______________ the investment to a greater extent than would be possible in a straight ______________ financing of the project. This can be accomplished by locating other ______________ interested in getting the project built, and shifting some of the ______________ coverage to such parties through ______________ or ______________ guarantees.

8. ______________ benefits from any applicable tax credits, ______________ deductions, ______________ deductions, ______________ deductions, ______________ and development tax deductions, ______________-received credits, ______________ tax credits, ______________ gains, and noncapital start-up expenses are very significant considerations in the investment, ______________ service, and cash flow of most project financings. Care must be used in structuring project financing to make sure that these tax ______________ are used.
9. When a project financing is housed in a(n) ______________ entity that does not have ______________ to shelter, it is important to structure the project financing so that any tax benefits can be ______________ to parties currently in a position to ______________ such tax benefits. For U.S. federal income tax purposes, ______________ control is required for tax ______________, except in the case of certain ______________ subsidiaries, in which ______________ control may require consolidation.

**SHORT ANSWER QUESTIONS**

Refer to Chapter 28, pages 917–930 in *Financial Management and Analysis*.

1. Why is project financing appealing?
2. What are the credit exposures in a project financing?

3. What are some causes of project failures?
4. What is nonrecourse borrowing?

5. What are some of the incentives and disincentives of project financing?
FILL IN THE BLANKS

Refer to Chapter 29, pages 933–967 in Financial Management and Analysis.

1. Budgeting is mapping out the sources and uses of funds for future periods requiring both ________ analysis, including ________, and ________. ________ analysis includes both ________ and ________ analysis to develop forecasts of future ________ and ________. ________ techniques are used as a measurement device but instead of using accounting to ________ what has happened, in budgeting, firms use accounting to ________ what we expect to happen in the future.

2. A(n) ________ advantage is the advantage one firm has over others in terms of the cost of ________ or ________ goods or services. A(n) ________ advantage is the advantage one firm has over another because of the structure of the markets (input and output
markets) in which they both operate. Only through having some type of advantage can a firm __________ in something and get __________ back in ____________.

3. A(n) ____________ of gaining a competitive or comparative advantage is consistent with ____________ shareholder wealth. This is because projects with ____________ value arise when the firm has a competitive or comparative advantage over other firms. A strategy is the direction a firm takes to meet its _____________. A(n) ____________ plan is how a firm intends to go in that direction. In ____________ management, a strategic investment plan includes policies to seek out possible investment ____________.

4. ____________ forecasts are an important part of financial planning. ____________ forecasts can result in shortages of ____________, inadequate short-term ____________ arrangements, and so on. If a firm’s sales forecast ____________ its mark, either ____________ or ____________ sales, there are many potential ____________.

5. To predict ____________ flows, we must forecast sales that are uncertain because they are affected by future ____________, ____________, and ____________ conditions. Nevertheless, we can usually assign meaningful degrees of ____________ to our forecasts. We forecast ____________ in one of the following ways:
6. The experience of a firm’s management and their ____________ with the firm’s ____________, ____________, and ____________ make them reliable forecasters of ____________ sales. The firm’s own managers should have the ____________ to predict the market for the goods and services and to ____________ the costs of producing and marketing them. But there are potential ____________ in using management forecasts. These forecasts may ____________ the firm to ____________ more resources, such as a larger capital budget and additional personnel, to that manager.

7. ____________ is an important element in planning for both the ____________-term and the ____________-term. But forecasts are made by ____________. Forecasters tend to be ____________, which usually results in ____________ than deserved forecasts of ____________ sales. In addition, people tend to focus on what worked in the ____________, so past successes carry more ____________ in the developing forecasts than an analysis of the future. One way to avoid this is to make managers ____________ for their forecasts, ____________ accurate forecasts and ____________ those that are way off the mark.
8. In ____________, we bring together analyses of ____________ flows, projected ____________ statements, and projected ____________ sheets. The ____________ flow analyses are ____________ important although generation of the ____________ statement and ____________ sheet is needed. Most firms extend or receive ____________, so cash flows and net income do not ____________.

9. A(n) ____________ balance sheet is a(n) ____________ balance sheet for a(n) ____________ period that summarizes assets, liabilities, and equity. A pro forma ____________ statement is the projected ____________ statement for a future period that summarizes ____________ and ____________. Together, both projections help identify a firm’s ____________ and ____________ needs.

10. The ____________ of accounts method starts with the ____________ budget. Before putting together the ____________ income statement and balance sheet, we need to see how the various ____________, ____________, and ____________ accounts change from month to month, based on the information provided in the cash budget. The ____________ method uses historical relationships between ____________ and each of the other ____________ statement accounts and between ____________ and each of the ____________ sheet accounts.
SHORT ANSWER QUESTIONS

Refer to Chapter 29, pages 933–967 in Financial Management and Analysis.

1. Why is financial planning important?

2. What is the purpose of the budgeting process?
3. Explain forecasting with regression analysis.

4. How can the analysis of cash flows evaluate the performance of a firm?
5. What are the techniques used for cash flow analysis and forecasting?

PROBLEMS

Refer to Chapter 29, pages 933–967 in Financial Management and Analysis.

1. The financial manager of DoReMi Company has prepared the following pro forma balance sheet for next month:

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and Equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Accounts payable</td>
</tr>
<tr>
<td>$500</td>
<td>$525</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>Long-term debt</td>
</tr>
<tr>
<td>300</td>
<td>575</td>
</tr>
<tr>
<td>Inventory</td>
<td>Common equity</td>
</tr>
<tr>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Plant and equipment</td>
<td>Total liabilities and equity</td>
</tr>
<tr>
<td>400</td>
<td>$1,500</td>
</tr>
<tr>
<td>Total assets</td>
<td></td>
</tr>
<tr>
<td>$1,500</td>
<td></td>
</tr>
</tbody>
</table>

After preparing this budget, the financial manager knows that DoReMi must maintain a current ratio of 4 and a debt-to-equity ratio less than 2 at all times. How might the accounts be adjusted so that these ratios are achieved in the quickest and most correct manner? Propose an
alternative pro forma balance sheet that satisfies this constraint. How does the adjustment alter DoReMi’s risk?

2. Consider the Tomato Company’s sales for the peak summer months:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>$12,000</td>
</tr>
<tr>
<td>August</td>
<td>$20,000</td>
</tr>
<tr>
<td>September</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Eighty percent of Tomato’s sales are for credit. Eighty percent of all credit sales are paid the following month and the remainder are paid two months after the sale. Estimate Tomato’s cash flow from these sales.
3. Suppose a firm had the following assets at the end of 2000:

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>$200,000</td>
</tr>
<tr>
<td>Plant assets</td>
<td>$500,000</td>
</tr>
<tr>
<td>Total assets</td>
<td>$700,000</td>
</tr>
</tbody>
</table>

If the firm had sales of $1 million, use the percentage of sales method with 2000 as the base year. What are the predicted current assets and plant assets for the firm for 2001, if sales are forecasted to be $1,400,000?
Part Two
Solutions
CHAPTER 1

Introduction to Financial Management and Analysis

FILL IN THE BLANKS

Answers

1. Finance; financial management, investments, financial institutions; financial management

2. Investment decisions, financing decisions; costs, benefits; risk

3. financial analysis; divisions (or departments), product lines, creditworthiness, competition

4. Sole proprietorship, partnership, corporation; corporation, sole proprietorships; general, limited, corporation

5. articles of incorporation; bylaws; shareholders; board of directors; publicly-held, closely-held; Securities and Exchange Commission (SEC)

6. Proprietorships’, partnerships’, corporation; double taxation

7. limited liability company, partnership, corporation; tax, liable; joint venture; partnership, corporation

8. shareholders’, price; a share of stock, shares outstanding; present value; efficient market, abnormal; risk
9. Accounting; Economic; economic

10. agent; principal; monitoring costs, bonding costs, residual loss; long; stock options, restricted stock grants

**SHORT ANSWER QUESTIONS**

**Answers**

1. No, small investors should invest in the stock market only if they are willing and able to accept more risk for the possibility of a higher return. The investor should not expect to earn a return greater than what will compensate for the risk being borne.

2. Economic profits should be the most important to the shareholder. When they are greater than zero, the shareholder is receiving adequate compensation for the investment’s risk. Accounting profits may or may not compensate the shareholder since they are accounting measures and do not always reflect the risk of the investment.

3. Performance shares do not require managers to make any personal investment. The shares of stock under this plan are awards and tied to some measure of short-term accounting profits. A restricted options plan, in particular a premium-priced option, is valuable only if the price of the stock increases above its current level. This encourages managers to maximize the share price, hence, shareholder wealth.

4. Because research shows that stock markets are efficient and the information is now public, your broker should inform you that the news of the new medication has already been impounded in the price of the stock and while you cannot expect to earn abnormal returns based on this information, you are likely to earn the appropriate return to compensate for the risk associated with the investment.

5. a Because the business is a partnership, the owners’ shares of the profits and losses are proportionate to what each invested. Thus for Annie, $50,000 divided by the sum of $50,000 and $25,000 = 0.667 or 2/3 of the business. For Alice, $25,000 divided by the sum of
$50,000 and $25,000 = 0.333 or 1/3 of the business. With taxable income of $12,000, Annie will declare $8,000 and Alice will declare $4,000.

b. Because both partners are jointly and severally liable for the debts of the business, creditors can recover any debt that remains after the sale of the assets by either or both partners. The assets of the firm can be sold for $30,000 and the debt amounts to $50,000, so there is $20,000 still owed to the creditors. The creditors may receive some of the $20,000 from each partner or all of the $20,000 from either partner, whoever has sufficient assets.

c. If the business had been a limited partnership, then Alice could lose only her initial investment of $25,000. She would not be held liable for any other debts. Annie would likewise lose her initial investment of $50,000 and would be liable for the $20,000 due to the creditors after the assets are sold.

d. If the business had been a corporation, then the creditors would have received the $30,000 from the sale of the assets. However, Annie and Alice would not be personally liable for the remaining $20,000 due to the creditors (unless one of them had signed a note personally guaranteeing repayment of any responsibility. This often happens when there are few owners of a corporation). In general, owners of a corporation have limited liability to the extent of the amount invested in the corporation.
FILL IN THE BLANKS

Answers
1. security; securities market; money market, capital market, derivative; Money market; Capital market

2. Commercial paper; Treasury bill; Negotiable, commercial banks

3. Common stock; Shareholders; no; dividends; Preferred

4. principal (or face value, or par value, or maturity value); interest payments; notes; Municipal; federal; General obligation; Revenue; over-the-counter, exchanges

5. primary, secondary; private placements, underwriting

6. Exchanges; over-the-counter; privately; banks, the government; registered; Securities and Exchange

7. New York Stock Exchange; American Stock Exchange; regional, New York Stock Exchange; NASDAQ; National Market System; second; 30, 500

8. efficient, Weak, abnormal; semistrong; semistrong; Strong, insider
SHORT ANSWER QUESTIONS

Answers

1. Common stock does not have a maturity nor does it have to pay a dividend; and common shareholders are least priority in case the firm is liquidated. Bonds have a maturity date and pay an interest rate that is generally permanent. Unlike shareholders, bondholders are included among the first that are paid in the event that the firm is liquidated.

2. Because common stock does not have a maturity and the stockholders are not guaranteed to receive a dividend, they are called residual owners of the firm. For this lack of guaranteed dividend, they have the right to elect the board of directors.

Preferred stock is more expensive than common stock and it, too, has no maturity. Preferred stockholders are guaranteed to receive dividends and have priority over common stockholders in the ownership of the firm. Unlike the common stockholders, they usually do not have voting rights.

3. Both types of bonds are municipal bonds and are free from federal taxation (i.e., the interest earned on them is free from taxation). General obligation bonds are backed by the taxing power of the issuer, whereas revenue bonds are backed by the proceeds of a specific project.

4. It all depends on a variety of factors such as the investment goals, liquidity preferences, and risk aversion of the investor. One type of investment instrument is not necessarily better than bonds or vice versa. However, there are times when one is preferred to the other in the midst of a particular business cycle, hence investors should diversify their portfolios by having a combination of stocks and bonds. If an investor is a risk taker, she or he may want only high-risk stocks. If an investor is risk averse, she or he may diversify to minimize nonsystematic risk. Further, if the investor is in a high tax bracket, bonds are more attractive than stocks that pay dividends because the interest income is not taxed at the federal rate. Likewise, an investor in a lower tax bracket may prefer dividends as they are taxed at a lower rate. Also, the need for liquidity plays a role as stocks are highly liquid and bonds have longer maturities than stocks.
5. The exchanges are a physical location where securities are traded. The over-the-counter market is not a physical location but a computerized network.
FILL IN THE BLANKS

Answers

1. Federal Reserve System, central; monetary, loanable

2. Supply, demand, interest, borrow, interest, investing; demand, investment; supply

3. Electronic, e-cash, cybercash, digicash, electronically, Federal Reserve; cash, credit cards, checks; transaction

4. Financial institutions, financial, assets; broker, dealer, underwriting, investment portfolios

5. procuring, advice, strategies, restructuring, acquisitions

6. regulated, supervised, federal, state; legislation, Financial Services Modernization, Gramm-Leach-Bliley; underwriting, selling

7. primary, newly, securities, raise; issuer; distribute, investment bankers

8. Underwriting, Securities and Exchange; securities, registration, financial
9. good; need, pay, lend, compensated; interest rate; greater, higher, lower, lower

10. secondary, price; interest, price; face, yield, coupon

11. creditworthiness, Moody’s, Standard & Poor’s, Fitch; high grade; triple A; investment, noninvestment, high, junk

12. embedded, bondholder, issuer; call; retire; put; sell; convertible

13. yield, expectations, pure, liquidity, preferred habitat; segmentation

**SHORT ANSWER QUESTIONS**

**Answers**

1. Financial intermediaries can raise capital by issuing financial claims against themselves that investors purchase. The company uses the money raised to invest and technically, the investors are investing by indirect means through the financial intermediary. The investments offered provide the investor with a range of diversified investments that have various maturity dates at reduced costs.

2. There are several types of deposit institutions: commercial banks, savings and loan associations or thrifts, mutual savings banks, and credit unions.

   - Commercial banks: corporations owned by investors that lend to businesses and offer a multitude of basic financial services
   - Savings and loan associations: institutions owned by depositors that concentrate on offering home mortgage loans
   - Mutual savings banks: institutions owned by depositors that provide loans to the local community
   - Credit unions: nonprofit associations owned by depositors that make personal loans to members

3. There are a number of nondeposit financial institutions that hold financial assets:

   - Trust companies: act as trustee based on the terms of a contract
 ■ Investment companies: invest in pools of assets with finances raised from the sale of stock
 ■ Pension funds: Manage workers’ retirement accumulation in stocks and bonds
 ■ Insurers: provide a range of protection polices for the investor

4. There are many interest rates in any economy, called a structure of interest rates, and they are determined by many factors. Traditionally Treasury securities’ interest rates serve as the benchmark of interest rates. The risk premium is the interest rate on a non-Treasury security and it factors in any other risks an investor may bear by buying it. These other risks include creditworthiness, option provisions, demand in the market (liquidity), the length to maturity, and tax consequences.

5. The theoretical interest rates or yields that the U.S. Treasury would pay for bonds with differing maturities are Treasury spot rates. Spot rates are also known as forward rates and some believe them to be the market’s consensus of future interest rates. In this market consensus, the market prices expectations of future interest rates into the existing interest rates of investments with differing maturities. Understanding forward rates is helpful for hedging because it facilitates the use of options in order to avoid an unfavorable future interest rate.

6. The term structure of interest rates relates the yield on a bond to its maturity; the yield curve is the graph of this relationship that extends it over different maturities. The graph of the term structure can have the following shapes: a normal or upward-sloping curve, indicating the yield rises steadily as maturity increases; a downward-sloping or inverted yield curve, where yields decline as maturity increases; and a flat yield curve.
FILL IN THE BLANKS

Answers
1. futures, buy, sell, underlying; futures; settlement

2. economic, hedge, risk; Futures, exchanges, agricultural, industrial; stock, interest, currency

3. Clearinghouse, guaranteeing; Counterparty, settlement; futures

4. deposit, minimum; initial; price, fluctuates, position; market, marking, market, marking, market

5. buying, long; sale, short; buyer, profit, increases, seller, profit, decreases

6. writer, buyer, sell, price, period; premium; exercised; expiration

7. any, expiration, American; expiration, European; before, specified, Bermuda

8. intrinsic; time; economic, exercised

9. swap, periodic; dollar, notional principal; Swaps, nonfinance, interest, currency, commodity; risk, return, forward
SHORT ANSWER QUESTIONS

Answers

1. There are a variety of derivative instruments including futures contracts, forward contracts, option contracts, swap agreements, and cap and floor agreements. Derivative instruments are investment products that help firms to hedge against certain risks that are uninsurable. The value of the derivative comes from the basis of the contract.

2. A futures contract offers liquidation opportunities prior to the settlement date. This is achieved by the holder taking what is called an offsetting position in the same contract. The holder may also liquidate a futures contract on the settlement date. The purchaser of a futures contract receives the underlying item at the agreed-upon price. The seller liquidates the position by delivering the underlying at the agreed-upon price.

3. Forward contracts are nonstandardized, therefore terms for each contract are decided between the buyer and seller. Clearinghouses and secondary markets do not exist for forwards, therefore they are traded over-the-counter. Both futures and forward contracts provide delivery terms, however, futures contracts are not supposed to be settled by delivery as are forward contracts. Futures contracts are marked-to-market at the end of each trading day, meaning that the accounts are adjusted according to the daily closing prices. Further, this means futures accounts are allowed to have varying cash flows in and out according to price fluctuation. A forward does not have to be marked-to-market, this implies account cash flows do not vary. Finally, unlike investors in futures, investors in a forwards face credit risk exposure, or counterparty risk, since a party may default on the obligation especially since there is no clearinghouse or secondary market.

4. With an option, the buyer has the right but not the obligation to transact and the option writer must perform. In the case of a futures contract, both buyer and seller are obligated to perform. However, a futures buyer does not pay the seller to accept the obligation, while an
option buyer pays the seller an option price. The risks and rewards for the two contracts differ accordingly: Buyers of futures contracts realize a dollar-for-dollar gain (loss) when the price of the futures contract increases (decreases), and vice versa for sellers of futures contracts. Options do not have this. The most that the buyer of an option can lose is the option price at the same time they maintain all the benefits. The writer’s profit is the option price, however the writer assumes much downside risk. Savvy investors use futures to protect against symmetric risk and options to protect against asymmetric risk.

5. Swaps are multiple packages of forward contracts. Because forward contracts do not have a long maturity, investors who need a longer maturity can find it in a swap. Also, swaps are convenient as the pay-off for the bundle of forward contracts is negotiated together and not separately. Further, swaps have become quite liquid and there is more of a demand for them in the market.

PROBLEMS

Answers

1. The futures price of Asset X increases to $135. Alex, the buyer of the futures contract, could then sell the futures contract and realize a profit of $35 ($135 minus the futures price of $100). Effectively, at the settlement date he has agreed to buy Asset X for $100 but can sell Asset X for $135. Adrienne, the seller of the futures contract, will realize a loss of $35. If the futures price falls to $50 and Adrienne buys the contract, she realizes a profit of $50 because she agreed to sell Asset X for $100 and now can buy it for $50. Alex would realize a loss of $50. Thus, if the futures price decreases, the buyer of the futures contract realizes a loss while the seller of a futures contract realizes a profit.

2. Because it is an American call option, it may be exercised at any time up to and including the expiration date. Lydia can decide to buy from the writer of this option one unit of Asset X, for which she will pay a price of $75. If it is not beneficial for her to exercise the option, she will not. Whether the option is exercised or not, the $3 paid for the option will be kept by the option writer. If Lydia buys a put option, then she would be able to sell Asset X to the option writer for a price of $75. The maximum amount Lydia can lose is the option price. The
maximum profit that the option writer can realize is the option price. Lydia has substantial upside return potential, while the option writer has substantial downside risk. There are no margin requirements for Lydia once the option price has been paid in full. Because the option price is the maximum amount Lydia can lose, no matter how adverse the price movement of the underlying, there is no need for margin. Because the writer of an option has agreed to accept all of the risk and none of the reward of the position in the underlying, the writer is generally required to put up the option price received as margin. In addition, as price changes occur that adversely affect the writer’s position, the writer is required to deposit additional margin because the position is marked to market.

3. The profit and loss from the strategy will depend on the price of Asset X at the expiration date. A number of outcomes are possible.

■ If the price of Asset X at the expiration date is less than $40 (the option price), then the investor will not exercise the option. It would be foolish to pay the option writer $60 when Asset X can be purchased in the market at a lower price. In this case, the option buyer loses the entire option price of $2. Notice, however, that this is the maximum loss that the option buyer will realize, regardless of how low Asset X’s price declines.

■ If Asset X’s price is equal to $40 at the expiration date, there is again no economic value in exercising the option. As in the case where the price is less than $40, the buyer of the call option will lose the entire option price, $2.

■ If Asset X’s price is more than $40 but less than $42 at the expiration date, the option buyer will exercise the option. By exercising, the option buyer can purchase Asset X for $40 (the exercise price) and sell it in the market for the higher price. Suppose, for example, that Asset X’s price is $41 at the expiration date. The buyer of the call option will realize a $1 gain by exercising the option. Of course, the cost of purchasing the call option was $2, so $1 is lost on this position. By failing to exercise the option, the investor loses $2 instead of only $1.

■ If Asset X’s price at the expiration date is equal to $42, the investor will exercise the option. In this case, the investor breaks even, realizing a gain of $2 that offsets the cost of the option, $2.

■ If Asset X’s price at the expiration date is more than $42, the investor will exercise the option and realize a profit. For example, if the price is $50, exercising the option will generate a profit on Asset X
of $10. Reducing this gain by the cost of the option ($2), the investor will realize a net profit from this position of $8.

4. The intrinsic value is $110 – 100 = $10. That is, an option buyer exercising the option and simultaneously selling the underlying asset would realize $110 from the sale of the underlying, which would be covered by acquiring the underlying from the option writer for $100, thereby netting a $10 gain. This option is “in the money.” When the exercise price of a call option exceeds the current price of the underlying, the call option is out-of-the money and has no intrinsic value. If the exercise price is equal to the current price it is at-the-money and also has no intrinsic value (0).

For a put option, the intrinsic value is equal to the amount by which the current price of the underlying is below the exercise price: $100 – 90 = $10. The buyer of the put option who exercises the put option and simultaneously sells the underlying will net $10 by exercising. The asset will be sold to the writer for $100 and purchased in the market for $90. For the put option, it would be: in-the-money when the price of the underlying is less than exercise price, out-of-the money when the current price exceeds the exercise price, and at-the-money when the exercise price is equal to the current price.

5. Consider a corn farmer and a canning company that uses the corn in the operation of its business. The concern of the farmer is that the price of corn will decline, thereby forcing him (or her) to sell his corn at a lower price. The concern of the canning company is that the price of corn will increase, resulting in a rise in its production costs. Consider first the farmer; suppose the corn will be available at a time when the farmer can sell a corn futures contract to deliver corn for $X per bushel. The number of bushels expected to be sold will determine how many bushels of corn the farmer will seek to deliver. By selling futures, the farmer has locked in a price of $X per bushel. Consequently, even if the price of corn is $X – 2 per bushel, the farmer will receive $X per bushel. If instead, the price of corn is $X + 2 per bushel, the farmer has given up the opportunity to benefit from a higher price because he has agreed to accept $X per bushel.

Now let’s look at the canner. By buying a corn futures contract, the canner can assure that the price at which it must purchase corn will be no higher than $X per bushel. So, if corn increases to $X + 2 per bushel, the canner only needs to pay $X per bushel. In contrast, if the price of corn decreases to $X – 2 per bushel, the canner gave up the opportunity to benefit from a lower cost for corn.
FILL IN THE BLANKS

Answers
1. Congress, legislation, Internal Revenue Code; Internal Revenue Service (IRS), interprets, adds, implements; IRS, providing, processing, collecting, explaining, rulings

2. income tax, 1909, simple, complex; analyst, today, future; after, performance, changing

3. marginal, defines, bracket, dollar; average, ratio, paid; progressive, average, higher; investment, financing, taxable, marginal

4. shareholders, dividends, twice, corporate, shareholders’, corporation, third; triple, dividends-received; recipient, dividends, dividend, taxable; dividends-received, increases, return, investing

5. accelerated, straight-line; depreciation, rate, physical, effect, income; uniformity, depreciation, taxpayers, calculations, accelerated, shorter

6. capital gain, realized, sold, paid; treatment, lower, tax

7. Investment, ITC, stimulate, reducing, computed; ITC, reinstated, Congress, spending; credits, deductions, reduce, deduction, indirectly

8. net operating loss, deductions, income; back, preceding, forward, future, reduce; back, forward
9. worldwide, income; Nonresident, seat, management, corporate; tax, no, minimal; havens

**SHORT ANSWER QUESTIONS**

**Answers**

1. The following are the main kinds of taxes:

   - Income taxes are taxes based on the amount of income earned.
   - Employment taxes are also based on wage and salary income and paid by both the employee and employer for Social Security, Medicare, and retirement.
   - Excise taxes are a simple way of augmenting revenue by charging tax on certain commodities such as alcoholic beverages, tobacco products, telephone service, and gasoline.
   - Import and export taxes, also known as tariffs, are taxes from trading with foreign countries.

2. Investors receive a tax break on dividend income. Because of this, investors require a lower return on these types of securities which means the cost of capital is lower for the firm that issued the securities. A firm’s dividend income is not taxed, whereas interest income is taxed like any other income. Dividends paid by a firm are not deductible, whereas interest paid by a firm is fully deductible. The tax treatment of dividends and interest influences the financial decision-making because of its affect on the cost of capital.

3. The modified accelerated cost recovery system (MACRS), has four features:

   - The depreciation rate used each year is either 150% or 200% of the straight-line rate, depending on the type of property, applied against the undepreciated cost of the asset.
   - The salvage value of the asset is ignored, so the depreciable cost is the original cost and the asset’s value is depreciated to zero.
   - A half-year of depreciation is taken in the year the asset is acquired, no matter whether it is owned for one day or 365 days.
The depreciation method is switched to the straight-line method when straight-line depreciation produces a higher depreciation expense than the accelerated method.

Because the MACRS is an accelerated method, depreciation expenses are greater sooner, thus reducing taxable income and tax rates when compared to straight-line. Straight-line depreciation is acceptable in cases where firms may not be able to make the best use of quicker depreciation that is offered by MACRS. Some companies use both methods, MACRS for tax purposes and straight-line for financial reporting purposes. This results in a difference in taxable income and may create deferred tax liabilities.

4. Taxes are of great concern because tax rates change often and the financial analyst needs to consider this dynamic tax environment when making an evaluation of a firm’s future cash flows. Understanding foreign and domestic tax rates provides more accurate analyses and insight into the corporation’s decision making process. Along with taxes, depreciation rates are very important to consider, despite the fact that they are not a cash flow. Depreciation still influences a firm’s taxes by reducing taxable income, which is a cash flow.

PROBLEMS

Answers

1. a. Using straight-line depreciation method: The depreciation allowance is $56,000/7 = $8,000 per year. Recall that only half can be taken the first year with the remainder taken at the end, so the depreciation schedule is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$4,000</td>
</tr>
<tr>
<td>2–7</td>
<td>$8,000</td>
</tr>
<tr>
<td>8</td>
<td>$4,000</td>
</tr>
</tbody>
</table>
b. Using MACRS depreciation method, the depreciation schedule is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$56,000(0.1429) = $8,002.40</td>
</tr>
<tr>
<td>2</td>
<td>$56,000(0.2449) = 13,714.40</td>
</tr>
<tr>
<td>3</td>
<td>$56,000(0.1749) = 9,794.40</td>
</tr>
<tr>
<td>4</td>
<td>$56,000(0.1249) = 6,994.40</td>
</tr>
<tr>
<td>5</td>
<td>$56,000(0.0893) = 5,000.80</td>
</tr>
<tr>
<td>6</td>
<td>$56,000(0.0892) = 4,995.20</td>
</tr>
<tr>
<td>7</td>
<td>$56,000(0.0893) = 5,000.80</td>
</tr>
<tr>
<td>8</td>
<td>$56,000(0.0446) = 2,497.60</td>
</tr>
</tbody>
</table>

2. Depreciation tax shield is the product of the depreciation expense and the tax rate:

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation Expense</th>
<th>Depreciation Tax Shield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$8,002.40</td>
<td>$2,400.72</td>
</tr>
<tr>
<td>2</td>
<td>13,714.40</td>
<td>4,114.32</td>
</tr>
<tr>
<td>3</td>
<td>9,794.40</td>
<td>2,938.32</td>
</tr>
<tr>
<td>4</td>
<td>6,994.40</td>
<td>2,098.32</td>
</tr>
<tr>
<td>5</td>
<td>5,000.80</td>
<td>1,500.24</td>
</tr>
<tr>
<td>6</td>
<td>4,995.20</td>
<td>1,498.56</td>
</tr>
<tr>
<td>7</td>
<td>5,000.80</td>
<td>1,500.24</td>
</tr>
<tr>
<td>8</td>
<td>2,497.60</td>
<td>749.28</td>
</tr>
<tr>
<td>Total</td>
<td>$56,000.00</td>
<td>$16,800.00</td>
</tr>
</tbody>
</table>

3. Income from operations: $4,000,000
   plus 20% of dividend income: 100,000
   Taxable income $4,100,000
   Tax liability = Taxable income × Tax rate = $4,100,000 (0.35)
   = $1,435,000
4. Application of net operating loss to prior years’ taxable income results in a refund of $507,500:

<table>
<thead>
<tr>
<th>Years</th>
<th>Refigured Taxable Income</th>
<th>Refigured Tax</th>
<th>Refund of Prior Taxes Paid</th>
<th>Amount of Loss Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>1999</td>
<td>0</td>
<td>0</td>
<td>245,000</td>
<td>700,000</td>
</tr>
<tr>
<td>2000</td>
<td>0</td>
<td>0</td>
<td>175,000</td>
<td>500,000</td>
</tr>
<tr>
<td>2001</td>
<td>0</td>
<td>0</td>
<td>87,500</td>
<td>250,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$507,500</td>
<td>$1,450,000</td>
</tr>
</tbody>
</table>

Total refund is $270,000.

$550,000 may be carried over to future taxable income because a total of $1,450,000 of the $2,000,000 loss is applied against 1999, 2000, and 2001 taxable income.
FILL IN THE BLANKS

Answers

1. Financial, operating, financing, investment; information, investors, creditors, assess, earnings, cash, earnings

2. data, financial, management, generally accepted accounting principles, GAAP; balance, condition, position, assets, liabilities, equity, fiscal, historical

3. balance, assets, future, inflows, liabilities, creditors, outflows, equity, shareholders’, stockholders’, ownership

4. Liabilities, current, long-term, deferred; operating, one; Accounts, accrued, current portion, short-term; Long-term, beyond; notes, bonds, capital lease, pension

5. Equity, interest; common, preferred; book value, equity; sum, retained, common, preferred, historical

6. Preferred, preferred, stock, balance sheet; remainder, common; common, paid-in, retained

7. income, summary, revenues, expenses; profit, loss, operating, financing
8. cash flows, cash, operating, investment, financing; cash flows, operating, investing, financing; selling, assets, issuing, securities, operations

9. operations, indirectly; investing, financing; investing, investments, disposal, acquisitions, divestitures; financing, sale, repurchase, stock, issuing, retirement, debt, payment, dividends

10. equity, shareholders’, equity; balance, income, analyst, equity; balance, number, shareholders’ equity, exercise, options, repurchased

**SHORT ANSWER QUESTIONS**

**Answers**

1. The financial statements are created based on assumptions that affect the use and interpretation of financial data:

   - Transactions are recorded at historical cost so values reported in statements are not market or replacement values.
   - The dollar is the unit of measure.
   - The statements are recorded for specified periods of time such as fiscal year or quarter. Fiscal year end is usually chosen to coincide with the firm’s lowest amount of operating cycle activity.
   - Accrual accounting and the matching principle are used to prepare statements. This means income and revenues are matched in timing such that income is recorded in the period in which it is earned and expenses are reported in the period in which they are incurred.
   - Firms are expected to always be a going concern.
   - Full disclosure requires providing more information than what is reported on the financial statements.
   - Statements are to be prepared and interpreted conservatively.

2. The two major categories of assets are current assets and noncurrent assets. Current assets are those assets that will be used or converted to cash in one year or one operating cycle and noncurrent assets are assets such as plant assets, intangibles, and investments.

3. Intangible assets are long-term investments and are the current value of nonphysical assets. Examples of intangible assets are:
A patent that gives the exclusive right to produce and sell a particular asset
A copyright that gives the exclusive right to publish and sell a literary, artistic, or musical composition
Goodwill that is created when one company buys another company at a premium

4. Four different labels are applied to the number of shares of a corporation on a balance sheet:

- The number of shares authorized by shareholders
- The number of shares issued and sold, which can be less than those authorized by shareholders
- The number of shares currently outstanding, which can be less than the number of shares issued if the corporation has repurchased some of its issued stock or has sold less than what is authorized
- The number of shares of treasury stock, that is, repurchased stock

5. Through the analysis of individual cash flows, investors and creditors can examine the following characteristics of a business:

- Whether financing is internally or externally generated
- Whether the firm is able to cover all debt obligations
- Whether the firm is able to afford expansion
- Whether the firm is able to pay dividends
- Whether the firm has financial flexibility

PROBLEMS

Answers

1.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$15,000</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>$34,000</td>
</tr>
<tr>
<td>Inventory</td>
<td>27,500</td>
</tr>
<tr>
<td>Notes payable</td>
<td>3,000</td>
</tr>
<tr>
<td>Gross plant and equipment</td>
<td>50,000</td>
</tr>
<tr>
<td>Long-term debt</td>
<td>26,000</td>
</tr>
<tr>
<td>Accumulated depreciation</td>
<td>17,500</td>
</tr>
<tr>
<td>Common equity</td>
<td>12,000</td>
</tr>
<tr>
<td>Net plant and equipment</td>
<td>32,500</td>
</tr>
<tr>
<td>Total assets</td>
<td>$75,000</td>
</tr>
<tr>
<td>Total liabilities and equity</td>
<td>$75,000</td>
</tr>
</tbody>
</table>
Solution requires using the following relationships:

- Total assets = Total liabilities and equity
- Gross plant and equipment – Accumulated depreciation = Net plant and equipment
- Current assets + Net plant and equipment = Total assets
- Current liabilities + Notes payable + Long-term debt + Common equity = Total liabilities and equity

2. Earnings before taxes $45,000
   Less: taxes (30% of $45,000) 13,500
   Net income $31,500
   Preferred stock dividends 20,000
   Earnings available for common shareholders $11,500
   Common stock dividends (40% of $11,500) 4,600
   Retained earnings $6,900


<table>
<thead>
<tr>
<th>Cash flow from operations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net income</td>
<td>$64,000</td>
</tr>
<tr>
<td>Increase in current assets</td>
<td>–22,000</td>
</tr>
<tr>
<td>Decrease in current liabilities</td>
<td>+30,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>+60,000</td>
</tr>
<tr>
<td>Net cash flow from operations</td>
<td>$152,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash flow from investing activities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase plant and equipment</td>
<td>–$58,000</td>
</tr>
<tr>
<td>Net cash flow from investing activities</td>
<td>–58,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash flow from financing activities</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue long-term debt</td>
<td>+15,000</td>
</tr>
<tr>
<td>Repurchase of common stock</td>
<td>–45,000</td>
</tr>
<tr>
<td>Dividends on common stock</td>
<td>–10,000</td>
</tr>
<tr>
<td>Net cash flow from financing activities</td>
<td>–40,000</td>
</tr>
</tbody>
</table>

| Net cash flow                      | $54,000|
CHAPTER 7

Mathematics of Finance

FILL IN THE BLANKS

Answers

1. time value, cash, different; future, valuable, today, invested, interest; compounding, discounting

2. lend, present; require, paid, future; future, present, interest; interest, use, length, time, risk, borrowed, repaid

3. basic, \( PV(1 + i)^N \), present, future, future, present; interest, compounding; interest, interest, interest

4. financial, patterns, cash, perpetuities, annuity, deferred; timing; Tables, present value, future value, present, annuity, future, annuity

5. series, cash, cash, sum, present, future; equal, periodic

6. perpetual, ordinary; ordinary, end; level, beginning, annuity due

7. deferred, equal, after, period; deferred, present, ordinary, discounted, earlier
SHORT ANSWER QUESTIONS

Answers

1. A dollar is worth less today than a dollar some time in the future if that dollar is invested such that it earns interest in the future. A dollar is worth more today than a dollar some time in the future if that dollar has no investment opportunity. If the dollar is not invested, no investment opportunities can come to pass. The value the dollar holds is in its liquidity, which gives the investor the flexibility to invest the dollar when a future opportunity arises.

2. The comparison of alternative financing or investment opportunities is difficult when interest rates do not have comparable terms. In order for comparisons to be done, the rates must be converted to a common unit. Two ways to convert interest rates stated over different time intervals into a common measure are to use the annual percentage rate (APR) and the effective annual interest rate (EAR). Annualizing the rates is an easy conversion and simplifies the comparison. The annualized rate is the stated rate of interest per compound period times the number of compounding periods in a year.

- The APR ignores compounding, thus understating the true annual rate of interest when the interest is compounded before the year’s end.
- The effective annual rate (EAR) is the true economic return for a given time period because it accounts for compounding of interest. This form is the most useful to compare interest rates.

CHAPTER 7 PROBLEMS

Answers

1. Given:

\[ r = 7.5\% \text{ or } 0.075 \]
\[ PV = $500 \]

Solve: \( FV \) for different values of \( t \)
a. $500(1 + 0.075)^1 = $500(1.0750) = $537.50
b. $500(1 + 0.075)^5 = $500(1.4356) = $717.80
c. $500(1 + 0.075)^{10} = $500(2.0610) = $1,030.50

2. Given:

\[ r = 7.5\% \text{ or } 0.075 \]
\[ FV = $500 \]

Solve: PV for different values of \( t \)

a. $500\left(\frac{1}{1 + 0.075}\right)^1 = $500(0.9302) = $465.10
b. $500\left(\frac{1}{1 + 0.075}\right)^5 = $500(0.6966) = $348.30
c. $500\left(\frac{1}{1 + 0.075}\right)^{10} = $500(0.4852) = $242.60

3. Given:

\[ r = 4.5\% \text{ or } 0.045 \]
\[ PV = $1,000 \]

Solve: FV for a variety of different interest scenarios

a. $1,000(1 + 0.045)^3 = $1,000(1.1412) = $1,141.20
b. Total interest earned = $1,141.20 – 1,000 = $141.20
c. If Natalie would have withdrawn all her interest each year, she would have earned $1,000 \times 0.045 = $45 interest each year. For the three years, she would have earned 3 \times $45 = $135.

4. Since growth rate = annual interest rate = average annual return, use the basic valuation equation and solve for the rate that doubles every dollar he invests.
5. Given:

\[ r = 5\% \text{ or } 0.05 \]
\[ PV = $4,000 \]
\[ FV = $4,000 + 2,000 = $6,000 \]

\[ FV = PV(i + r)^t \Leftrightarrow $6,000 = $4,000(1 + 0.05)^t \Leftrightarrow \frac{3}{2} = (1.05)^t \]

\[ \Rightarrow \frac{\ln(3/2)}{\ln(1.05)} = t \Rightarrow t = 8.31 \text{ years} \]

6. To accurately compare these quotes, convert them all to EAR.

Bank A: EAR = \((1 + \frac{0.145}{1})^1 - 1 = 14.5\% \) because it is already compounded annually.

Bank B: EAR = \((1 + \frac{0.14}{12})^{12} - 1 = 14.93\% \)

Friend: EAR = \(e^{0.1375} - 1 = 14.74\% \)

Bank A provides the better rate.

7. APR = \(2.9\% \times 12 \text{ months} = 34.8\% \)

\[ \text{EAR} = (1 + \frac{0.348}{12})^{12} - 1 = 40.92\% \]

Because the customer is actually paying 40.92% on unpaid balances, it might be in the customer’s best interest to transfer the balance to a credit card charging a lower interest rate or to pay off the credit card altogether and ask for a lower interest rate.
8. Given:

\[ r = 10\% \]
\[ CF_0 = 150 \]
\[ CF_1 = 300 \]
\[ CF_2 = 225 \]
\[ CF_3 = 410 \]

Solve: \( FV \) at end of third period

\[
FV = 150(1+0.10)^3 + 300(1+0.10)^2 + 225(1+0.10)^1 + 410(1+0.10)^0 \\
= 199.65 + 363 + 247.50 + 410 \\
= 1,220.15
\]

9. Given:

\[ CF_1 = 2,500 \]
\[ CF_2 = 3,000 \]
\[ CF_3 = 5,000 \]
\[ CF_4 = -2,500 \]
\[ r = 12\% \]

Solve: \( PV \) as of the end of period 0

\[
PV = \frac{2,500}{(1 + 0.12)^1} + \frac{3,000}{(1 + 0.12)^2} + \frac{5,000}{(1 + 0.12)^3} - \frac{2,500}{(1 + 0.12)^4} \\
= 2,232.14 + 2,391.58 + 3,558.90 - 1,588.76 \\
= 6,593.86
\]

10. Given:

\[ CF = 2,400,000 \]
\[ T = 20 \]
\[ r = 10\% \]

Solve: \( PV \) of annuity due

\[
PV = 2,400,000 + 2,400,000 \sum_{t=1}^{19} \frac{1}{(1 + 0.10)^t} \\
= 2,400,000 + 2,400,000(8.3649) \\
= 2,400,000 + 20,075,760 = 22,475,760
\]
11. Given:

\[ CF = \$20,000 \]
\[ T = 4 \text{ (deferred 8 years)} \]
\[ r = 7\% \]

Solve: PV of deferred annuity

\[
PV = 20,000 \left( \sum_{t=1}^{4} \frac{1}{(1 + 0.07)^t} \right) \left( \frac{1}{1 + 0.07^8} \right)
\]
\[
= 20,000(3.3872)(0.5820)
\]
\[
= 39,427.01
\]
Principles of Asset Valuation and Investment Returns

FILL IN THE BLANKS

Answers

1. financial, good, bad; good, increase, bad, won’t; good, bad, benefits, outweigh, costs; best, financial, financed

2. discount, capitalization, translate, present; discount, pay, right; return, requires, price, expected; single, series, series, perpetual, present, amount, timing, discount

3. averse, risk; higher, uncertain; Buyers, sellers, buy, sell, profitable; over-, under-; balance, equilibrium

4. price, highest; restrictions, buying, selling; limit, costs, highest

5. inverse, value, discount, higher, discount, lower, value, lower, discount, higher, value

6. return, benefit; change, value, appreciation, depreciation, flow, dividend, interest, both, flow, value

7. return, yield; return, yield, annual, average; return, internal, IRR; average, geometric, arithmetic, compounding
8. discount, cost, future, internal; internal, inflows, same, internal

9. effective, compounding; reinvested, different, modified internal, MIRR

**SHORT ANSWER QUESTIONS**

**Answers**

1. The reason for the inverse relation between the discount rate applied to future cash flows from an investment and the value of the investment today can be explained mathematically taking into consideration the basic valuation formula for future value and present value. When the present value is calculated, the discount rate assumes its position in the denominator of the formula with the future value in the numerator. The larger the discount rate, the larger the denominator, which in turn results in a smaller value after dividing the numerator by the denominator, hence a smaller present value. The smaller the discount rate, the smaller the denominator, which in turn results in a larger value after dividing the numerator by the denominator, hence a larger present value. For a direct application of this question, see problem one in the Problems section.

2. The investor must consider his or her personal level of risk aversion which is represented by the discount rate. Risk averse investors avoid risky investments regardless of the chance of receiving higher returns. Timing and frequency of future cash flows also are important. Taken with the discount rate, they will influence the decision on whether to make the investment. If potential investments have similar risks and cash flows, then increased frequency of cash flows indicates the preferred investment. When investments have dissimilar risks, then the present value of each investment should be examined in order to choose the preferred investment.

3. The average annual return is the geometric average annual return. Unlike the arithmetic annual return, the geometric average annual return includes compounding when calculating the rate of return. The arithmetic average annual return calculates a flat constant return rate because it does not incorporate the interest on interest that is earned. The preferred annual return is the one that incorporates compounding, hence the geometric average allows for more precise assessment.
PROBLEMS

Answers

1. While the answer is intuitive, the step-by-step solutions should clarify the mathematics of the problem:

Using the 5% discount rate: \( PV = \frac{500}{(1 + 0.05)^1} = 476.19 \)

Using the 6% discount rate: \( PV = \frac{500}{(1 + 0.06)^1} = 471.70 \)

Note: Compare the denominators. Because 1.05 is less than 1.06, this indicates that the result from dividing the future value by 1.05 will yield a higher value than dividing by 1.06. This higher value translates into a higher present value, or up-front cost that Karen must pay for the investment. Depending on Karen’s available funds that she now has to invest, she is better off investing at the higher discount rate because she will be required to pay less for it up front than if she chooses the lower rate. Knowledge of the actual future value and actual discount rates are unnecessary as long as one knows the same future value is being divided by two discount rates, one larger than the other.

2. This investment involves perpetual cash flows. Therefore,

\[
P V = \frac{1,500}{0.10} = 15,000
\]

- If the investor pays more than $15,000, then less than 10% is earned.
- If the investor pays less than $15,000, then more than 10% is earned.
- If the investor pays $15,000, the investor earns 10%.

3. Given:

\[
PV = 3,000 \\
FV = 5,500
\]
Solve: The average annual return on the investment, \( i \)
Using a financial calculator: \( i = 16.36\% \)
Or

\[
5,500 = 3,000(1 + i)^4
\]

\[
i = \left( \frac{5,500}{3,000} \right)^{\frac{1}{4}} - 1 = 16.36\% 
\]

4. a. Given:
\[
P V = 100,000
\]
\[
C F_1 = 20,000
\]
\[
C F_2 = 40,000
\]
\[
C F_3 = 25,000
\]
\[
C F_4 = 35,000
\]

Solve: \( i \)
Using a financial calculator, \( i = 7.31\% \).

b.

\[
P V = \frac{20,000}{(1 + 0.10)} + \frac{40,000}{(1 + 0.10)^2} + \frac{25,000}{(1 + 0.10)^3} + \frac{35,000}{(1 + 0.10)^4}
\]

\[
= 135,758.17
\]

5. a. \( F V = 25,000(1 + 0.08) + 27,000(1 + 0.12) + 31,050(1 + 0.15) \)

Or \( F V = ((25,000(1.08))(1.12))(1.15)) \)

\( F V = 34,776 \) at the end of the third year.

b. \( i = \left( \frac{34,776}{25,000} \right)^{\frac{1}{3}} - 1 = 11.63\% \) per year
CHAPTER 9

Valuation of Securities and Options

FILL IN THE BLANKS

Answers

1. common, ownership; Shares, perpetual, maturity; Owners, right, dividends, guaranteed; dividends, constant, constant

2. Notes, bonds, interest, semiannually, principal, face; percentage; constant, straight, zero, maturity

3. Dividend Valuation, DVM, value, stock, dividend, constant, constant; value, share, dividend, difference, required, return, growth, dividends; required, return, stock, dividend, capital; growth, dividend, lower, greater, greater, less, reinvest, lower

4. dividends, constant, value, present, dividends, period, perpetuity; required, return, RRR, compensate, time value, uncertainty, future, flows

5. Opportunity, earned, alternative, similar; minimum, required, return, discount, time value, risk; dividend, price, grow, capital; capital, taxes, taxes, capital, sold

6. bonds, value, coupon, yield; coupon, yield, more, maturity, premium; coupon, yield, less, discount; coupon, valued
7. right, buy, sell; not, stock, exchange, traded; buy, call; buy, exercise, strike, expiration; sell, put

8. convertible, stock, investor; straight, without, stock; Callable, issuer, buy, investor, price, call, prior, convertible, callable

**SHORT ANSWER QUESTIONS**

**Answers**

1. If a bond’s present value is greater than its maturity value, it sells at a premium because investors will pay more for a bond if it pays more than the going rate for bonds of similar risk. If the bond’s present value is equal to its maturity value, then the bond sells at par. If the bond sells below its maturity value, it is trading at a discount because investors are not going to pay the maturity value for a bond that pays less than the going rate.

2. All three types of securities are valued by the present value of all future cash flows expected to be received. With shares of common stock, the value is equal to the present value of all dividends expected to be received from that share. As mentioned previously, common stock has no maturity so the value is the present value of an infinite stream of dividends. One catch is that the dividends are neither fixed nor guaranteed. Thus, the value of preferred stock is likewise the present value of all future dividends and the dividends are guaranteed. The value of a debt security is the present value of the sum of the present value of the interest payments and the present value of the maturity value.

3. The factors that affect the time value of an option are the value of the underlying asset, the exercise price, the time value of money, the expected volatility in the value of the underlying asset, and the time to maturity.

4. The Dividend Valuation Model is a formula that values a share of stock that either pays a constant dividend or that pays dividends that grow at a constant rate. The model states that the value of a share of stock is equal to the ratio of next period’s dividend to the difference between the required rate of return and the growth rate of dividends.
It is useful and flexible, especially for dividends that have changing rates over time. Its meaning is intuitive—as the current dividend increases, the value of the stock increases, and in turn, if uncertainty increases, then the discount rate increases, which decreases the value of the stock.

5. The yield-to-maturity differs from the yield-to-call in that the number of periods for which the cash flows are discounted back is the number of periods to the expected call date and the call price of the bond is discounted back instead of the face value of the bond.

**PROBLEMS**

**Answers**

1. The price of the bond will increase because the cash flows (coupon payments) are discounted at a lower rate. This increases the present value which is evident in the increased price of the bond.

2. Yes. According to the option, the investor has one month to decide to purchase 1,000 shares of XYZ Company for $30 per share plus the option cost, which translates into $1.50 more per share. Therefore the cost to the investor is $31.50 per share. Because the current price is $1 higher than the option price, the investor could exercise this option and then sell the shares in the open market for a profit of $1 per share. The investor can exercise the option at any time up until and including the expiration date. Therefore if the price of the stock falls, the option will not be exercised and the investor will lose his $1,500. If the investor thinks the stock will rise and wants more than $1 per share profit, he should exercise the option immediately and hold the stock until it rises to what he considers an acceptable level.

3. ABC preferred stock → \( r = \frac{\text{dividend}}{\text{price}} = \frac{3.45}{35} = 9.86\% \)

Because the return on this investment is less than the required 10%, the investment would not be made.
4.

\[
\text{Price} = 11 \sum_{t=1}^{3} \frac{1}{(1.08)^t} + 125\left(\frac{1}{(1.08)^3}\right) \\
= 28.35 + 99.23 = 127.58
\]

This investment should only be taken if the investors required rate of return is less than 8\%. The current price is $130, which is greater than the price at which it will be called, $127.58, so the investor will not receive the 8\% annual return on the investment.

5. The cash flows are as follows:

\[
\begin{align*}
D_1 &= D_0(1 + 0.02) = 2.25(1.02) = 2.30 \\
D_2 &= D_1(1 + 0.02) = 2.30(1.02) = 2.35 \\
D_3 &= D_2(1 + 0.02) = 2.35(1.02) = 2.39 \\
D_4 &= 2.39 \\
D_5 &= 2.39
\end{align*}
\]

Since the third year begins the perpetuity:

\[
\text{Price} = \frac{2.39}{0.16} = 14.94
\]

Therefore, the price per share for the stock that has this particular cash flow of dividends is:

\[
\text{Price} = \frac{2.30}{1.16} + \frac{2.35}{(1.16)^2} + \frac{2.39}{(1.16)^3} + \frac{14.94}{(1.16)^3} = 17.25
\]

6. The bond pays $60 every six months for ten periods. It will pay $1,000 at maturity. The effective annual yield is 14\% so the appropriate semiannual rate to discount the cash flows is 7\%.

\[
\text{Price} = 60 \sum_{t=1}^{10} \frac{1}{(1.07)^t} + 1000 \frac{1}{(1.07)^{10}} \\
= 456.53 + 508.40 = 964.93
\]
Because the investor is holding the bond to maturity, the average annual yield is the yield to maturity on the bond, which is 14%.

7. Assume the interest is paid at the end of the year, then:

Return = \frac{\text{Ending price} - \text{Beginning price} + \text{Interest}}{\text{Beginning price}}
\begin{align*}
= \frac{1,037.50 - 1,000 + 93.75}{1,000} \\
= 13.125\%
\end{align*}

Coupon yield = \frac{\text{Interest}}{\text{Price}} = \frac{93.75}{1,000} = 9.375\%

Capital yield = \frac{1,037.50 - 1,000}{1,000} = 3.75\%

8. The entire yield is the capital yield: $1,000 = $738.75(1 + r)^{15}$
Solving algebraically for the rate:
\[ r = \frac{\sqrt[15]{$1,000$}}{$638.75$} - 1 = 5.76\% \]

9. The round trip transactions cost of $10.99 \times 2$ must be considered in the return calculation:

Return = \frac{\text{Sell price} - \text{Buy price}}{\text{Buy price}}
\begin{align*}
= \frac{(1,000 \times 8.625 - 10.99) - (1,000 \times 5 + 10.99)}{(1,000 \times 5 + 10.99)} \\
= \frac{8,614.01 - 5,010.99}{5,010.99} \\
= 71.9\%
\end{align*}

10.
\[ $1,080 = \sum_{t=1}^{8} \frac{50}{(1 + r)^t} + \frac{1,000 + 100}{(1 + r)^8} \]
Using a financial calculator: \( r = 4.82\% \) for six months. To find the effective annual yield to call:

\[
\text{EAR} = (1 + \text{Interest rate per period})^{\text{periods per year}} - 1
\]
\[
= (1.0482)^2 - 1
\]
\[
= 9.87\%
\]
FILL IN THE BLANKS

Answers

1. uncertainty, knows, tax, demand, economy, interest; risk, uncertainty; Uncertainty, knowing; Risk, uncertainty, greater, uncertainty, greater, risk

2. Cash, sales, operating, financial; Sales, uncertainty, units, good, price; Operating, variable, fixed; Financial, financing

3. debt, interest, principal, payments, bondholders, owners; cash, debt, default, credit; default, debt

4. Reinvestment, reinvesting; yields, reinvest, interest, bond, return; yield, coupon, longer, more, more, reinvest; yield, time, maturity, greater, more, value

5. Interest, sensitivity, value, interest; Market, rate, discount, present, discount

6. Purchasing, price level; borrows, long, coupon, increases, benefits, increase, creditor, cheaper

7. Currency, domestic, foreign, value, future; Currency, cash, currency
8. Risk, dislike; averse, avoid; neutral; neutral, compensation, risk; preference, affinity

9. Diversification, vary, same, same; returns, correlated; tendency; returns, positively, same, negatively, opposite; uncorrelated, no

10. Risk, add, unsystematic, company; Risk, assets, market, systematic

11. William Sharpe, return, risk, assets; capital, pricing, CAPM; CAPM, return, asset, return, risk-free, risk; return, compensation, value, premium, compensation, risk; diversified, risk, assets, nondiversifiable, market, systematic

12. CAPM, risk, return, arbitrage, model, APM, Stephen Ross; APM, asset, identical, different, identically; returns, compensate, risk, risk, economic, company; theoretical, pricing, factor

**SHORT ANSWER QUESTIONS**

**Answers**

1. The degree of operating leverage (DOL) is the ratio of the percentage change in operating cash flows to the percentage change in units sold. The degree of financial leverage (DFL) is the ratio of the percentage change in cash flows to the owners to the percentage change in operating cash flows. The degree of total leverage (DTL) is the product of DOL and DFL. DTL measures the sensitivity of the cash flows to owners to changes in unit sales.

   The degree of operating leverage measures the sensitivity of operating cash flows to changes in sales and the degree of financial leverage measures the sensitivity of owners’ cash flows to changes in operating cash flows. The combination is the degree of total leverage.

2. Default may result from many types of failures. Some examples are:

   - Failure to make interest or principal payments
   - Failure to make sinking fund payments
   - Failure to meet conditions of the loan
   - Bankruptcy
Financial managers are concerned about their own default because if there is a perception of lack of creditworthiness, then the firm’s cost of capital increases. Likewise, if the managers invest in another firm’s debt, they are risking their firm’s funds. Default risk is comprised of sales risk, operating risk, and financial risk.

3. Prepayment risk and call risk are related to reinvestment risk. The rule to remember is that the greater the risk (i.e., cash flows), the greater the return.

- Prepayment risk is associated with loans that have a schedule for the repayment of principal with the right to repay without penalty prior to the end of the loan. The risk comes in when the interest rate falls below that of the loan; then the investor is paying more for the loan than initially contracted.
- Call risk is the risk that an issuer will call an investment product that has a callable option. Investors are compensated for this risk with a premium. However if the issue is called, then the investor must find another investment mechanism.

4. If an investor plans to hold a bond until its maturity, then the value is stable despite the changing interest rates. However, if the investor does not want to hold the bond to maturity, then the value is directly affected by the changing interest rates. As interest rates fall, bond values rise and vice versa, so if an investor plans to get rid of a bond, it needs to be done during times of low interest rates.

For a specific maturity and if the rate on the coupon is relatively great, then the bond’s value is not subject to much change in the yield because the greater cash flows are not as affected by the discount rate. However if the bond has a longer maturity, then the bond’s value is more affected.

5. Expected returns are a measure of future returns without delineating all the possible outcomes. The more the possible outcomes (range), the greater the risk. The standard deviation is a measure of the dispersion of risk which indicates the likelihood of all possible outcomes. The variance is the square of the standard deviation and has the same meaning as standard deviation. It is often referred to as the volatility.
PROBLEMS

Answers

1. a. DOL at 10,000 units = \[
\frac{10,000(1,500 - 30)}{10,000(1,500 - 30) - 175,000}
\] = 1.01

b. DFL at 10,000 units = \[
\frac{10,000(1,500 - 30) - 175,000}{10,000(1,500 - 30) - 175,000 - 65,000}
\] = 1.00

c. DTL at 10,000 units = DOL \times DFL
\quad = 1.01 \times 1.00 = 1.01

d. \( Q_{BE} = \frac{175,000 + 65,000}{(1,500 - 30)} = 164 \) units

e. The sales volume is increased by 5,000 units, which indicates a 50\% increase in units sold. Therefore, DTL \times 50\% = 1.01 \times 50\% = 50.5\% increase in the cash flows available to owners.

2. a. 

Investment 1: expected value = $1,075
Investment 2: expected value = $1,075

b. 

Investment 1: standard deviation = $278
Investment 2: standard deviation = $388

Investment 1:

<table>
<thead>
<tr>
<th>( p \times x )</th>
<th>( p(x - E(x))^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>213,906</td>
</tr>
<tr>
<td>400</td>
<td>14,063</td>
</tr>
<tr>
<td>175</td>
<td>115,719</td>
</tr>
</tbody>
</table>

\( E(x) = \frac{1,075}{343,688} \quad \sigma(x) = 586.25 \)
Investment 2:

<table>
<thead>
<tr>
<th>$p_n$</th>
<th>$x_n$</th>
<th>$p_n(x_n - E(x))^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$375$</td>
<td>45,156</td>
<td></td>
</tr>
<tr>
<td>$400$</td>
<td>14,063</td>
<td></td>
</tr>
<tr>
<td>$300^*$</td>
<td>16,633</td>
<td></td>
</tr>
</tbody>
</table>

$E(x) = \sum p_n x_n = 1,075$  
$\sigma(x) = $275.41

---

a. Actual value is rounded appropriately.

c. *Investment 1 is riskier.* Investment 1 provides the same expected return, but has a higher standard deviation than Investment 2.

3. a. $r_f = 6\%$  
   $r_m - r_f = 4\%$

<table>
<thead>
<tr>
<th>Security</th>
<th>Expected Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6% + 0.85(4%) = 9.4%</td>
</tr>
<tr>
<td>B</td>
<td>6% + 1.00(4%) = 10%</td>
</tr>
<tr>
<td>C</td>
<td>6% + 1.25(4%) = 11%</td>
</tr>
<tr>
<td>D</td>
<td>6% + 1.50(4%) = 12%</td>
</tr>
</tbody>
</table>

   b. $B_p = \frac{0.85 + 1.00 + 1.25 + 1.50}{4} = 1.15$

c. $r_p = \frac{0.094 + 0.10 + 0.11 + 0.12}{4} = 0.106$ or 10.6\%

4. a. The covariance between Investment 1 and 2:

   $E(x)_{inv1} = 0.15(0.18) + 0.30(0.50) + 0.55(0.40) = 0.397$

   $\sigma(x)_{inv1}$

   $= \sqrt{0.15(0.18 - 0.397)^2 + 0.30(0.50 - 0.397)^2 + 0.55(0.40 - 0.397)^2}$

   $= 0.1012$

   $E(x)_{inv2} = 0.15(0.25) + 0.30(0.45) + 0.55(0.30) = 0.3375$
\[ \sigma(x)_{\text{Inv2}} = \sqrt{0.15 (0.15 - 0.3375)^2 + 0.30 (0.45 - 0.3375)^2 + 0.55 (0.30 - 0.3375)^2} = 0.0992 \]

Covariance = \[ 0.15(0.18 - 0.397)(0.15 - 0.3375) + 0.30(0.50 - 0.397)(0.45 - 0.3375) + 0.55(0.40 - 0.397)(0.30 - 0.3375) = 0.0095 \]

b. The correlation coefficient = \[ \frac{\sigma_{1,2}}{\sigma_1 \sigma_2} = \frac{0.0095}{(0.1012)(0.0992)} = 0.9395. \]

c. Because the covariance is positive, the investment’s returns covary together in the same direction. The correlation coefficient, which is positive and close to 1, means that the two investments tend to go in the same direction at the same time together.
CHAPTER 11

The Cost of Capital

FILL IN THE BLANKS

Answers

1. cost, capital, funds; borrowed, cost, interest; equity, cost, return, appreciation, dividends; capital, required, return

2. structure, debt, preferred, common; optimum proportions, capital

3. cost, debt, dollar, marginal, rate, tax, taxable; interest, taxable, effective, lower

4. debt, stock, flotation; payments, lawyers, accountants, bankers; all-in-cost, up

5. cost, preferred, dollar, issuing, preferred; Preferred, maturity; maturity, perpetual preferred

6. cost, common, common, internally, externally; Internally, retained, externally, shares, common

7. Dividend Valuation, DVM, common, price, stock, present, future, dividends, discounted, required, return, equity; dividends, constant, future

8. Capital Asset Pricing, CAPM, diversified, market; compensated, time, money, risk; compensation, time, money, risk premium, market, beta.
9. optimal capital, maximize, investment, marginal, capital, equal, benefit; optimal capital budget, expenditure, marginal, capital, internal, efficiency

**SHORT ANSWER QUESTIONS**

**Answers**

1. The cost of capital and the required rate of return are similar. The difference comes in from the perspective. Cost of capital is from the firm’s perspective as it is the amount the firm has to compensate investors in order to receive their money. Required rate of return is from the investor’s perspective as it represents the personal return rate they require in order to temporarily part with their money and invest it in the company. These are marginal concepts because they represent the incremental cost or return associated with raising or investing an additional dollar.

2. The cost of capital is determined in three steps:

   ■ Calculate the proportions of each source of capital to be used.
   ■ Calculate the cost of each source of capital.
   ■ Calculate the weighted average cost of capital using these two measures.

3. It is appropriate to use the DVM when companies have stable dividend policies. The CAPM relies on historical values for stock returns and market returns and should be reserved for only publicly traded firms. A pitfall of this model is often the lack of data and even if data is available, the past is not indicative of future earnings.
PROBLEMS

Answers

1. Yield on current debt:

\[ 900 = \sum_{t=1}^{10} \frac{35}{(1+r)^t} + \frac{1000}{(1+r)^{10}} \]

\[ r = 4.7813\% \]

Effective annual yield = \((1 + 0.047813)^2 - 1 = 9.79\% \)

After-tax effective yield: \( r^*_d = 9.79\%(1 - 0.30) = 6.85\% \)

2. Without flotation costs: \( r_p = \frac{1.05}{35} = 3.00\% \)

With flotation costs: \( r_p = \frac{1.05}{35(1 - 0.01)} = \frac{1.05}{34.65} = 3.03\% \)

3. Given:

\[ D_0 = 3.12 \]
\[ P = 65 \]
\[ g = 5\% \]

\[ r_e = \frac{3.12(1 + 0.05)}{65} + 5\% \]
\[ = 5.04\% + 5\% = 10.04\% \]

4. Given:

\[ r_f = 4\% \]
\[ r_m = 11\% \]
\[ B = 1.35 \]
\[ r_e = 4\% + 1.35(11\% - 4\%) = 4\% + 9.45\% = 13.45\% \]

5. Estimation of the cost of capital for Sutton, Inc.:

Given:

- \( r_d = 8\% \)
- \( D_p = $2.00 \)
- \( P^p = $30 \)
- \( P = $25 \)
- \( D_1 = $1.50 \)
- \( g = 5\% \)
- \( t = 40\% \)

Solve: Cost of capital \((r_w)\) for alternative financing proportions

Calculation of costs of sources of funds:

Cost of debt

\[ r_d^* = 0.08(1 - 0.40) = 0.08(0.6) = 0.048 \]

Cost of preferred equity

\[ r_p = \frac{$2.00}{$30.00} = 0.0667 \]

Cost of common equity

\[ r_e = \left( \frac{$1.50}{$25.00} \right) + 0.05 = 0.06 + 0.05 = 0.11 \]

Financing arrangement #1:

\[ r_w = [0.30(0.048)] + [0.10(0.0667)] + [0.60(0.11)] = 0.0144 + 0.00667 + 0.066 = 0.087 \text{ or } 8.7\% \]

Financing arrangement #2:

\[ r_w = [0.50(0.048)] + [0.25(0.0667)] + [0.25(0.11)] = 0.024 + 0.016675 + 0.0275 = 0.0682 \text{ or } 6.82\% \]
FILL IN THE BLANKS

Answers

1. objective, wealth; investment, value; invest, tangible, intangible, income, cash, reinvest, pay

2. Capital, assets, notes, bonds, stock, short-term; capital, projects; factors, estimate, future, change, uncertainty, future

3. risk, sales, operating; Sales, uncertainty, sold, price, operating, uncertainty, operating, mix, operating; business, discount, return, capital, required, cost

4. budgeting, identifying, selecting, long, benefits, one; budgeting, ongoing; budgeting, strategy, objectives

5. length, risk, dependence; economic, useful, length, benefits; risk, nature; dependence, independent, mutually exclusive, contingent, complementary

6. difference, with, without, incremental; change, components, operating, investment, expenditures, acquire, disposing

7. simplest, outflow, acquired, inflow, outflow, economic; revenues, expenditures, taxes, working; operating
8. depreciation, depreciation tax-shield; outflow, inflow; accelerated, straight-line; accelerated, larger, sooner, straight-line

9. Salvage, not, depreciation; guess, asset, worth, useful; Salvage, dispose

**SHORT ANSWER QUESTIONS**

**Answers**

1. The five stages of the capital budgeting process are:
   - **Stage 1:** Investment screening and selection. A project’s cash flows are screened and selected according to their ability to fulfill corporate strategy.
   - **Stage 2:** Capital budget proposal. A capital budget is proposed for the selected projects.
   - **Stage 3:** Budgeting approval and authorization. Projects that are approved are included in the capital budget. More analysis is conducted prior to making expenditures.
   - **Stage 4:** Project tracking. Projects that are approved are tracked during the life of the project.
   - **Stage 5:** Postcompletion audit. Projects that are approved are audited from time to time in order to review if they still comply with corporate strategy.

2. The use of current assets are usually the focus of short-term investment decisions and don’t necessarily entail long-term cash flow projections. Current assets are cash, marketable securities, accounts receivable, and inventory. With long-term investment decisions, cash flow projections are necessary as there is a concern for the time value of money and the day-to-day operating needs of the firm. A firm needs both current and long-term assets in order to function even during down times.

3. A firm must consider future cash flows and how these cash flows influence the assets already utilized by the firm. New projects may or may not adversely affect the current assets in place. Often, firms can take on additional projects if they already have the necessary assets in place. When decisions are made, capital rationing is a concern as a
company may not be able to financially take on all the projects it wants.

- An independent project is as the name implies, a project that does not rely on another project. Hence their cash flows are unrelated.
- Mutually exclusive projects are projects in which the cash flows affect each other. In other words, the firm can either do one project or the other, but not both.
- Contingent projects rely on the acceptance of another project.
- Complementary projects are projects that positively influence other projects.

4. Cash flows from investments come from asset acquisition, asset disposition, taxes, and operations. All these cash flows include costs of assets, expenditures in the utilization and disposal of the assets, and the effect of taxes.

**PROBLEMS**

**Answers**

1. Asset acquisition cash flow for Year 0 = ($10,000) for the cost of the asset.
Operating Cash Flows for Year 1 through Year 5 = $5,500 each year.
Asset disposition cash flow = $0 as there is no salvage value.

<table>
<thead>
<tr>
<th>Operating Cash Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in revenues</td>
</tr>
<tr>
<td>Less change in expenses</td>
</tr>
<tr>
<td>Change in before-tax cash flow</td>
</tr>
<tr>
<td>Less change in depreciation</td>
</tr>
<tr>
<td>Change in taxable income</td>
</tr>
<tr>
<td>Less change in taxes</td>
</tr>
<tr>
<td>Change in net income</td>
</tr>
<tr>
<td>Plus change in depreciation</td>
</tr>
<tr>
<td>Change in after-tax cash flow</td>
</tr>
</tbody>
</table>
2. Asset acquisition cash flow for Year 0 = ($49,000) for the cost of the asset. Operating Cash Flows for Year 1 through Year 7 = $5,500 each year. Asset disposition cash flow = $7,500.

   Operating Cash Flows
   
   Change in revenues $18,000
   Less change in expenses $5,000
   Change in before-tax cash flow $13,000
   Less change in depreciation $7,000
   Change in taxable income $6,000
   Less change in taxes $1,500 ⇒ 25% of $6,000
   Change in net income $4,500
   Plus change in depreciation $7,000
   Change in after-tax cash flow $11,500

   Asset Disposition
   
   Cash inflow from sale of cookie press $10,000
   Tax on sale of press $2,500
   Net cash flow from asset disposition $7,500

3. Asset acquisition cash flow for Year 0 = ($30,000) for the asset. Operating Cash Flows for Year 1 through Year 7 = $3,300 each year. Asset disposition cash flow = $5,500.

   Asset Acquisition
   
   Cost of equipment $(20,000)
   Installation (8,000)
   Spare parts inventory (2,000)
   Initial investment outlay $(30,000)

   Operating Cash Flows
   
   Change in revenues $0
   Less change in expenses $3,000
   Change in before-tax cash flow $3,000
   Less change in depreciation $4,000 ⇒ $28,000/7
   Change in taxable income $(1,000)
   Less change in taxes $300 ⇒ tax savings
   Change in net income $(700)
   Plus change in depreciation $4,000
   Change in after-tax cash flow $3,300
Asset Disposition

Salvage value $5,000
Tax on salvage value –1,500
Net cash flow from asset disposition $5,500
FILL IN THE BLANKS

Answers

1. cost, pay, finance; cost, explicit, interest, implicit, price, common, return, suppliers, capital, value, risk; uncertain, greater

2. payback, length, money; initial, outflow, inflows, initial, outflow; payback, payoff, recovery

3. discounted payback, pay, original, discounted, payback, longer, discounted, cash, discounted

4. Net present, NPV, expected; net, difference, change; changes, inflows, investment, outflows, NPV, difference, inflows, outflows

5. NPV, future, time value, risk, future; NPV, maximize; NPV, determine, changes, profitability

6. investment, NPV, NPV, discount; investment, graphical, NPV, discount; NPV, range, discount

7. profitability index, PI, operating, inflows, investment, outflows; PI, benefit-cost, benefit, cost; PI

8. internal rate, IRR, discount, future, zero, IRR, discount, NPV, $0; IRR, yield; mutually exclusive, IRR, not
SHORT ANSWER QUESTIONS

Answers

1. The six capital budgeting techniques are:

- Payback period
- Discounted payback period
- Net present value (NPV)
- Profitability index (PI)
- Internal rate of return (IRR)
- Modified internal rate of return (MIRR)

When evaluating investment projects, the ones chosen should always maximize owner wealth. To determine if they will maximize shareholder wealth or not, cash flows, and their uncertainty from each investment should be estimated.

2. Payback and discounted payback periods:

- The sooner the payback, the better.

Net present value:

- NPV > 0 indicates the investment increases shareholder wealth—accept the project.
- NPV < 0 indicates the investment decreases shareholder wealth—reject the project.
- NPV = 0 indicates the investment does nothing to change shareholder wealth—indifferent about the project.

Profitability index:

- PI > 1 indicates the investment returns more—accept the project.
- PI < 1 indicates the investment returns less—reject the project
- PI = 1 indicates the investment returns nothing extra but loses nothing—indifferent about the project.

Internal rate of return:

- IRR > cost of capital indicates the investment is expected to return more—accept the project.
■ IRR < cost of capital indicates the investment is expected to return less—reject the project.
■ IRR = cost of capital indicates the investment is expected to return what is required—indifferent about the project.

Modified internal rate of return:

■ MIRR > cost of capital indicates the investment is expected to return more—accept the project.
■ MIRR < cost of capital indicates the investment is expected to return less—reject the project.
■ MIRR = cost of capital indicates the investment is expected to return what is required—indifferent about accepting or rejecting the project.

3. The profitability index is a good evaluation technique. It considers a variety of factors such as all cash flows, the time value of money, the risk associated with these, and capital rationing. However, the PI is not foolproof. If projects require differing amounts to be invested at different times, then the PI may not coincide with NPV. Also, mutually exclusive projects are not comparable using PI.

4. In a sense, the IRR is the discount rate that breaks even. It makes the present value of all expected future cash flows equal to zero assuming these cash flows are reinvested at the same IRR each time. The MIRR technique is much more realistic because it assumes that the reinvested rates vary. A drawback to IRR and MIRR is that while they consider all cash flows and their timing, they do not directly take risk into account. Risk is indirectly accounted for when using the measures in the actual act of discounting. Selection of IRR and MIRR should be taken cautiously as capital rationing and status (dependence, independence, mutual exclusivity) of a project influence the selection.

5. When selecting the appropriate techniques, it is important to remember that discounted cash flows are preferred to the nondiscounted cash flow techniques although they may not necessarily be appropriate for all situations (although they are appropriate for most). The goal is to always maximize shareholder wealth.

■ If projects are independent and capital rationing is of no concern, then any of the discounted cash flow techniques are appropriate.
Recall that for mutually exclusive projects, the NPV method leads to investing in projects that maximize wealth and if the capital budget is limited, the NPV and PI methods should be used.

If the projects are so constrained that they are mutually exclusive, cost the same amount to start, and have similar risk, then use either NPV or MIRR.

If projects are mutually exclusive with different risks and scales, then NPV should be used over MIRR. If capital rationing is necessary, then the NPV or PI are appropriate.

Overall, NPV should guide project selection; in particular, NPV of the entire capital budget is the real concern.

In practice, more than one technique is used in order to give a more rounded view of the project. As mentioned above, discounted cash flow techniques (NPV, IRR, PI) are used as a primary method and payback period is used as a secondary method. IRR with NPV is being used more frequently.

**PROBLEMS**

**Answers**

1. You are the manager and are considering the following two projects for investment:

<table>
<thead>
<tr>
<th></th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project A</td>
<td>($10,000)</td>
<td>$3,000</td>
<td>$7,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Project B</td>
<td>($5,000)</td>
<td>$3,000</td>
<td>$4,000</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

a. Project A takes two years in order to regain the initial investment of $10,000.

Project B takes two years in order to regain the initial investment of $5,000.
b. **Discounted Cash Flows**

<table>
<thead>
<tr>
<th>Year</th>
<th>Project A</th>
<th>Project B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$3,000[1/(1 + 1/10)] = $2,727</td>
<td>$3,000[1/(1 + 1/10)] = $2,727</td>
</tr>
<tr>
<td>2</td>
<td>$7,000[1/(1 + 1/10)^2] = $5,785</td>
<td>$4,000[1/(1 + 1/10)^2] = $3,306</td>
</tr>
<tr>
<td>3</td>
<td>$9,000[1/(1 + 1/10)^3] = $6,762</td>
<td>$5,000[1/(1 + 1/10)^3] = $3.757</td>
</tr>
</tbody>
</table>

Project A takes three years in order to regain the initial investment of $10,000.
Project B takes two years in order to regain the initial investment of $5,000.

As a manager, you like the fact that the initial outlay for project B will be paid back quickly, however, this does not necessarily indicate that project B is the best project. If the required return or cost of capital was higher than 10%, then the discounted cash flow would have been a lesser amount and it would take longer to recoup the initial outlays for both investments.

c. NPV for project A = $2,727 + $5,785 + $6,762 = $15,274
   NPV for project B = $2,727 + $3,306 + $3,757 = $9,790

Both projects produce positive NPV, which is desirable of all projects.

d. $PI$ for project A = \[
\frac{PV \text{ cash inflows}}{PV \text{ cash outflows}} = 1.5274
\]

   $PI$ for project B = \[
\frac{PV \text{ cash inflows}}{PV \text{ cash outflows}} = \frac{$9,790}{$5,000} = 1.958
\]

The $PI$s indicate that for project A, for every $1 outflow, there is approximately $1.53 inflow and for project B, for every $1 outflow, there is approximately $1.96 inflow. It is necessary for cash inflow to be greater than cash outflow in order for a project to be considered.

e. IRR for project A =

\[
\frac{$3,000}{(1 + IRR)} + \frac{$4,000}{(1 + IRR)^2} + \frac{$5,000}{(1 + IRR)^3} - \frac{$10,000}{(1 + IRR)^3} = 0
\]
Using a calculator or trial and error, IRR for project A = 33.24%.

IRR for project B =

\[
\frac{\$3,000}{(1 + \text{IRR})} + \frac{\$4,000}{(1 + \text{IRR})^2} + \frac{\$5,000}{(1 + \text{IRR})^3} - \$5,000 = 0
\]

Using a calculator or trial and error, IRR for project B = 54.05%.

The IRR indicates the discount rate that would generate an NPV of $0. It also reflects the assumption that cash flows are reinvested at the IRR rate. These rates are not necessarily realistic as investments that produce those types of returns would have to be very risky.

f. For project A:

\[
FV = \$3,000(1.10)^2 + \$7,000(1.10) + \$9,000(1.10)^0 = \$20,330
\]

\[
PV = \$10,000
\]

\[
FV = PV(1 + \text{MIRR})^t
\]

\[
\$20,330 = \$10,000(1 + \text{MIRR})^3
\]

\[
(1 + \text{MIRR})^3 = 2.033
\]

\[
\text{MIRR} = \frac{\sqrt[3]{2.033} - 1}{3} = 26.68\%
\]

For project B:

\[
FV = \$3,000(1.10)^2 + \$4,000(1.10) + \$5,000(1.10)^0 = \$13,330
\]

\[
PV = \$5,000
\]

\[
FV = PV(1 + \text{MIRR})^t
\]

\[
\$13,330 = \$5,000(1 + \text{MIRR})^3
\]

\[
(1 + \text{MIRR})^3 = 2.666
\]

\[
\text{MIRR} = \frac{\sqrt[3]{2.666} - 1}{3} = 38.66\%
\]
The MIRRs reflect a more realistic rate of reinvestment of cash flows. While these rates are high, they are not as high as IRR. Still, in today’s market, while these types of investments with these returns are possible, they would indicate risky investments.

g. If both projects are independent, then both should be undertaken because they both have positive NPVs. This means they will both increase the value of the firm.

h. If the projects are mutually exclusive, then project A should be undertaken because it increases the value of the firm more than project B. In particular, project A increases the value of the firm by $5,274 whereas project B only increases the value of the firm by $4,790.
CHAPTER 14

Capital Budgeting and Risk

FILL IN THE BLANKS

Answers

1. investment, industry; economic, market, taxes, interest, international

2. uncertainty, future, evaluating; opportunity, earn, same, risk; return, capital, additional, compensate, risk

3. risk, projects, total, standalone; assets, standalone, relevant; portfolio, returns, correlated; addition, portfolio, risk, portfolio

4. statistical, risk, project's, range, standard deviation, coefficient, variation; dispersion, greater, uncertainty

5. sensitivity, change, reestimating, scenarios; Sensitivity, scenario, what-if, outcomes, one

6. Simulation, two, more, same; computer, probability, outcomes, probability, variable, change; simulations, internal rates, frequency, return

7. option pricing, real, real options, ROV, beyond, net present value, supplemented, options; options, abandon, exercised, expand, defer, future; strategic, revised, strategic

8. valuation, Black-Scholes; Black-Scholes, five, valuation; sensitive, difficult, volatility, two, strategic, volatility, value, cost, capital, static
9. certainty, certain, equivalent, risky; certainty, approach, risk, separates, value, risk, period’s, risk, preferences, incorporated; net present, interpreted, reliable, period’s

10. single, capital, risks; applying, discounted, budgeting, rejection, over-discounting, acceptance, underdiscounted

**SHORT ANSWER QUESTIONS**

**Answers**

1. The range is a statistical measure that represents the distance between the two extreme outcomes of the probability distribution and is calculated as the difference between the best and the worst (largest and smallest) possible outcomes. The wider the range, the further apart are the two extreme possible outcomes, therefore implying increase in risk.

   The standard deviation measures each possible outcome’s deviation from the expected value and the likelihood the outcome will occur. The larger the standard deviation, the greater the dispersion and, hence, the greater the risk.

   Comparison is not feasible between standard deviations of different projects’ cash flows if they have different expected values, thus the coefficient of variation translates the standard deviation of different probability distributions into a comparable measure. The coefficient of variation for a probability distribution is the ratio of its standard deviation to its expected value.

2. Sensitivity analysis illustrates the effects of changes in assumptions by changing one factor at a time. While this is helpful when isolating one factor, it is not very realistic when trying to view the effects of many factors changing during the life of a project. If the change of more than one variable at a time is desired, then simulation analysis is the analysis to use.

   Simulation analysis is more realistic than sensitivity analysis because it projects for many variables simultaneously. This method should only be used with a computer as it is computationally expensive. Simulation analysis examines a project’s total risk with generations of multiple scenarios. This is useful for the project, but not useful for the owner’s portfolio, meaning that simulation analysis does not take into account the toll of the project’s risk on the portfo-
When studying a project’s risk, its effect on the total risk of the other projects and the firm as a whole is necessary.

3. Financial leverage is debt obligation carried by the firm. In particular, it is the structured interest and principal payments that the firm must pay. The more debt a firm carries, the more financial leverage it has. Thus, the firm carries more risk because these debt obligations must be met. However, given the hierarchy of payoffs, if a firm is liquidated, debt holders receive their portion prior to equity holders. Therefore, debt financing increases the firm’s risk of equity but for the debt holding investor, it is a less risky investment compared to the equity holder.

4. When a firm wants to take on a new project for which it has no experience, the best way for that firm to gauge risk is to find a firm that is a pure play. A pure play is a firm whose only line of business is the one of interest to the firm looking to take on a similar project. In this manner, the firm can use the pure play firm as a model for how they might implement the project and assess the project’s risk. The assessment of risk is a proxy from the pure play firm. The investigating firm may use the pure play firm’s market beta in order to estimate the project’s risk.

5. The cost of capital is the amount the firm must pay creditors and investors in order to receive their investment in the company. In other words, it is how much the investors require in order to forgo use of their cash. Therefore the investors require adequate compensation for the time value of money and the probability of receiving these cash flows from the firm. To estimate the cost of capital, the cost of debt, preferred stock, and common stock are weighted and added to yield the weighted average cost of capital (WACC). This gives management an overall picture of their total costs to investors in order to receive their investment based on the risk of the project and investors’ risk aversion level.
**PROBLEMS**

**Answers**

1. 

\[ B_{\text{asset}} = B_{\text{equity}} \left[ \frac{1}{1 + (1 - \text{marginal tax rate}) \text{debt}} \right] = 1.05 \]

(This is the beta to be used for the estimate of the project risk.)

Required rate of return = Risk free rate + \(B\) (market risk premium)

\[ = 5.5 + 1.05(12) \]

\[ = 18.1\% \]

Because ABC’s cost of capital is 15% and the required rate of return on this project is 18.1%, ABC should invest in this project. If the required rate of return were equal to the cost of capital, then ABC would technically break even and if the required rate of return for this project were less than the cost of capital, ABC would not invest in the project as it would not cover cost of capital.

2. a. The cash flow range for each project are:

\[ R_A = \text{Best possible outcome} - \text{Worst possible outcome} \]

\[ = $1,300 - $800 = $400 \]

\[ R_B = \text{Best possible outcome} - \text{Worst possible outcome} \]

\[ = $3,000 - $1,500 = $1,500 \]

b. The expected cash flows for each project are:

\[ E(x_A) = \sum_{n=1}^{N} x_n p_n \]

\[ = 0.25($1,300) + 0.40($1,500) + 0.35($800) \]

\[ = $1,205 \]
c. The standard deviation of the possible cash flows for each project are:

\[ \sigma(x_A) = \sqrt{\sum_{n=1}^{N} p_n[x_n - E(x)]^2} \]
\[ = \sqrt{0.25(1,300 - 1,205)^2 + 0.40(1,500 - 1,205)^2 + 0.35(1,300 - 1,205)^2} \]
\[ = \sqrt{40,225} = 200.56 \]

\[ \sigma(x_B) = \sqrt{\sum_{n=1}^{N} p_n[x_n - E(x)]^2} \]
\[ = \sqrt{0.30(3,000 - 1,325)^2 + 0.25(-1,000 - 1,325)^2 + 0.45(1,500 - 1,325)^2} \]
\[ = \sqrt{2,296,875} = 1,485.56 \]

d. 

Coefficient of variation for Project A = \( \frac{\text{Standard deviation}}{\text{Expected value}} \)
\[ = \frac{200.56}{1,205} = 0.16644 \]

Coefficient of variation for Project B = \( \frac{\text{Standard deviation}}{\text{Expected value}} \)
\[ = \frac{1,485.56}{1,325} = 1.1212 \]

e. Using NPV analysis:

\[ NPV_A = 1,205 \sum_{t=1}^{5} \frac{1}{(1.13)^t} - 2,000 = 2,238 \]
Because the projects are mutually exclusive, Project B should be chosen. Note the higher expected return for the higher expected risk that Project B carries (see NPV, standard deviation, and coefficient of variation).

f.

\[
\text{NPV}_B = \sum_{t=1}^{5} \frac{1}{(1.18)^t} - $1,000 = $3,144
\]

\[
\text{NPV}_{B1} = \sum_{t=1}^{5} \frac{1}{(1.19)^t} - $1,000 = $3,051
\]

\[
\text{NPV}_{B2} = \sum_{t=1}^{5} \frac{1}{(1.18)^t} - $1,800 = $2,344
\]

\[
\text{NPV}_{B3} = \sum_{t=1}^{5} \frac{1}{(1.18)^t} - $1,000 = $2,127
\]

\[
\text{NPV}_{B4} = \sum_{t=1}^{5} \frac{1}{(1.19)^t} - $1,800 = $1,258
\]
FILL IN THE BLANKS

Answers

1. loan, principal, end, intervals; lender, bondholder, interest; interest, end; fixed, variable, floating

2. property, secured, security, collateral; ability, payments, unsecured, debenture

3. Term, borrower, creditor, creditor, bank, insurance, finance; Term, maturity, fixed, fixed, demand

4. registered, bearer; registered, records, interest, principal, registered; bearer, possession, certificate, payment; interest, bearer, coupon, cashes

5. conversion, exchange, security, common stock; bondholder, attractive; price, increases

6. analyze, rate, default, rating; Moody’s Investors, Standard & Poor’s, Fitch; credit, cost, marketability; restricted, minimum; risk, greater, default, credit, greater, greater

7. rating, high, low, high; investment-grade, prime, A, B; Noninvestment-grade, B, speculative, high-yield, junk.
8. Rating, credit, character, capacity, collateral, covenants; Character, ethical, quality; Capacity, repay; assets, value, quality; Covenants, terms, conditions

9. funds, bond, lowest, retire, fall; highest, lowest, sell; debt; derivative, synthetically, fixed, floating, interest, currency, commodity, stock index

SHORT ANSWER QUESTIONS

Answers

1. On debt obligations, the interest rate is calculated by the interest rate reset formula which makes use of the floating rate. The floating rate is found by adding the reference rate that is specified in the contract, and the quoted margin that is fixed over the debt's term. These rates do have collars, meaning that they have maximums and minimums.

2. Term loans are repaid in installments either monthly, quarterly, semi-annually, or annually according to an amortized schedule.

   An interest-only loan means just that, no principal payments are made until the end of the term. What is paid according to a schedule are the interest payments. This kind of loan is also called a bullet loan because the last payment that includes the principal is a killer.

3. Both are debt obligations, also called certificates of indebtedness. They obligate the borrower to repay the amount borrowed, with interest, in a scheduled fashion. The difference between the two is that a bond has an indenture agreement indicating the rights and obligations of the borrower while a note does not. The indenture agreements also provide for a trustee to oversee the borrowing for the benefit of the bondholder. The note is a less formal agreement.

4. The basic features a bond issue are:

   ■ Denomination: par, face, or maturity value (i.e., the amount of the debt)
   ■ Term to maturity: the length of the life of the bond
   ■ Interest: the amount of the coupon paid per year
   ■ Security: some bonds are backed by collateral, others aren’t
■ Seniority: there is a seniority ranking
■ Retirement: through the use of trust funds, call, and put options
■ Convertibility: also use call and put options

5. A bond issuer may retire debt by either calling it before it reaches its maturity date or paying off a portion of it by buying it back from the bondholder. The process of retiring the debt through repurchase may either happen with individual investors or in the market place.

Bonds are retired before maturity date if the current interest on the debt is lower than the debt they are paying. This means that they can get debt at a cheaper price than what they are now paying for it. Bonds may also be retired in order to improve the firm’s debt rating. If the firm has too many bonds or too many bonds that are low grade, then retiring some of that debt will lessen their default rate. The issuer could also retire debt because they may not be receiving adequate tax deductions or they may need to generate funds.

6. A convertible bond has a provision built in so that the bondholder may exchange the bond issue for shares of stock. A warrant is the right to buy the common stock at the exercise price. It gives the bondholder the opportunity to buy the shares of stock and maintain possession of the bond. Detachable warrants may be separated from the debt and traded.

PROBLEMS

Answers

1. Zero-coupon bonds would have more of a change in price because they are subject to more interest rate risk. A zero-coupon bond’s entire cash flow is not received until maturity. Therefore, for the length of that maturity, its value is influenced by interest rate movements. The greater the coupon rate, the higher the price, which is calculated from cash flows that are received earlier and at regular intervals, than the zero-coupon bond. Therefore, the 8% coupon bond would not be as influenced by the interest rate changes and thus has less interest rate risk than the zero-coupon bond.

Likewise, because the 8% coupon bond has more frequent cash flows, this in turn means that it has greater reinvestment risk than the zero-coupon bond. The investor must find adequate investments fre-
sequently to reinvest the 8% coupon’s interest payments, but the inves-
tor has to find an alternative investment for the zero-coupon payoff just once.

2. a. The conversion price of the bond is the ratio of the face value of the bond to the price of a share of the common stock.

\[
\text{Conversion price} = \frac{\$1,000}{45} = \$22.22
\]

b. The bond’s market conversion price is the market value of the stock times the number of shares that can be exchanged.

\[
\text{Market conversion price} = \$35 \times 45 = \$1,575
\]

c. The effective conversion price is the price that is paid for each share of common stock when the bond is converted.

\[
\text{Effective conversion price} = \frac{\$1,575}{45} = \$35
\]

d. If the investor converts the bond into the shares, she or he will receive stock worth $1,575. However if the investor accepts the call, she will receive $1,800. The investor should accept the call. She would only convert the shares if the call price of the bond was less than $1,575.

3. a. If the current market price is $33 and the warrant entitles you to pay only $20 a share, you should be willing to pay $13 (the differ-
ence) for the warrant.

b. Because there are five years until expiration, this will make the war-
rant more valuable as the stock has several years to increase in value. In essence, you will be paying a lower market value for the stock because of the warrant option.

4. a. The semiannual interest payments are: \(5\% \times 12\text{ million} = \$600,000\). There will be 16 payments in eight years and the matur-
ity value of $12 million will be received in the 16th period so the market value of the bonds is the present value of the expected future cash flows:
b. If KLH calls the bonds, it will pay 5% above the initial $20 million, which equals $12,600,000. If it buys the bonds on the open market, the premium on these bonds is tax deductible: $15,014,664.49 − 12,000,000 = $3,014,661.49 and it will cost the company $12,000,000 = $14,260,996.12 after taxes. Therefore, it would cost KLH $2,260,996.12 + $12,000,000 = $14,260,996.12 to buy the bonds on the open market.

KLH should exercise the call. It would only cost the firm $12,600,000 versus buying the bonds on the open market for $14,260,996.12. If the bonds were callable at a higher price (for example: $125), this would turn the tables and make it more cost effective for KLH to purchase bonds on the open market (because in this case the call would cost KLH $15,000,000).

5. a. The present value of the bond is $875 and the future value in two years is $1,000. There are no other payments made because it is a zero-coupon bond, so the interest rate is:

\[
1,000 = 875(1 + r)^2
\]

\[
r = \sqrt[2]{\frac{1,000}{875}} - 1
\]

\[
r = 6.9\%
\]

b. The deductible interest expense per year is:

For year 1 = 0.069 × $875 = $60.38

For year 2 = 0.069($875 + $60.38) = $64.54
FILL IN THE BLANKS

Answers

1. stock; common, preferred; shares, certificates; shareholders, stockholders; return, dividends, cash

2. common; liability, shares, ownership, classified, voting, buy

3. shares, authorized; not; issued, actually, fewer, authorized; left, outstanding, issued; retired, treasury

4. Common, elect, directors, vote, merger, authorize, vote, amendments; classes, votes, percentages; controlling, retain

5. Cumulative, minority; cumulative, accumulate, pile, seats, governance, smaller

6. one, entire; classified, staggered; advantage, continuity; experienced, one year

7. additional, common, rights, rights, existing, maintain, holding

8. directors, dividend, obligation; cash; shares, property

9. reinvest, shares, dividend, DRP, shareholders, dividends, additional, cash; additional, outstanding, issued
10. split; divides, existing, more, portion, same; reverse, raises, reducing

11. dividend, decision, cash; no, growth, payout, low regular, periodic; Irrelevance, Bird, Tax-Preference, Signaling, Agency

12. repurchasing, cash, taxes; Cash, ordinary; repurchase, capital, price; higher, gains, lower

**SHORT ANSWER QUESTIONS**

**Answers**

1. Shareholders do not actually purchase a piece of the company per se, instead they buy the right to future income and are allowed to be involved in the firm’s activities and decision making.

2. Preferred stockholders are given preference over common stockholders. This means that the company must give income to the preferred shareholders before the common shareholders. The same is true of dividends. Also, while dividends are not guaranteed to common shareholders, they are to preferred shareholders. Common shareholders have voting rights, whereas preferred shareholders do not. However, only when firms halt dividend payment, can preferred shareholders receive some temporary voting rights.

3. Common equity is created through residual ownership in a firm. This residual ownership is created by issuing shares of stock, protecting and maintaining of the firms earnings, and reinvesting of earnings back into the firm, meeting creditor obligations, and paying any required dividends to preferred shareholders. Any remaining earnings may either be kept by the firm or paid out to common shareholders in the form of dividends.

4. A publicly held corporation is one whose shares of stock are traded in financial markets. Publicly held firms are subject to scrutiny and must meet the disclosure requirements set forth by the SEC. Because of this scrutiny and disclosure, public firms can raise outside capital easier than other types of firms because they are fairly transparent.

   A privately held corporation is one whose shares are not traded in financial markets. If a private firm has less than 500 shareholders...
or less than $3 million of assets, registering with the SEC is optional. In general, a private firm is not required to disclose any information to the public or to the SEC. A private corporation can issue stock to a select few. These types of privately held firms are also called closely held firms. Ownership and management is selective, which also means that the shareholders in these firms are not well diversified as they are but a few holding much of one company. Because transparency is lacking with these firms, raising capital is difficult.

5. Reasons a company would pay a stock dividend:

■ As a signal of information, such as to reveal good news about the firm’s future prospects and not have to spend cash to do so.
■ To reduce the price of the stock. Overvalued stocks are subject to higher costs and the payment of a dividend reduces the price of the stock, on average, by the amount of the dividend.

6. The board of directors makes the dividend payment decisions.

Dividend Date Time Line:

■ Declaration date: The day the board of directors meets and decides on the dividend.
■ Record date: The date specified by the board such that any shareholders who are on record as owning shares on this date are eligible to receive the dividend.
■ Ex-dividend date: The date, established by the financial markets as four business days prior to the record date, that determines who receives the dividend (whoever purchased and held on to the shares prior to this date) and who does not (whoever buys the shares on or after this date).
■ Payment date: The date the dividend checks are mailed.

7. Reasons for a reverse stock split:

■ To raise the price to improve trading and reduce investors’ transaction costs for trading in the stock, especially in light of flat commissions which assess the same fees no matter the price of the stock. So theoretically, an investor could pay more for the transaction fees than for the actual stock purchased.
■ To raise the price up from a penny stock because penny stocks are viewed negatively.
■ As a way to privatize a firm.
8. Reasons a company would repurchase its own stock:

- To inexpensively distribute cash to shareholders. Shareholders benefit from the tax treatment of capital gains over dividends.
- To reduce the number of shares outstanding in order to improve earnings per share.
- To reduce the equity in order to readjust the debt-to-equity ratio. This means that the firm has greater financial leverage, which increases the value of the firm.
- To creatively and painlessly reduce total dividend payments. The reduction in shares implies a total dividend reduction because the same amount of dividends per share can be paid but for fewer shares.
- To minimize agency costs by reducing any cash the management can consume as perquisites.
- To put the firm on a diet. Sometimes firms become too large and unmanageable. When cash is paid out, the value of the firm is reduced.
- To maximize shareholder wealth. If the firm has no profitable investment opportunities, then it is better to pay funds to the shareholders than to invest in negative NPV projects.

A company would repurchase its own stock using the following methods:

- A tender offer
- Open-market purchases
- A targeted share repurchase

**PROBLEMS**

**Answers**

1. a. Dividends per share = \[
\frac{\text{Common stock dividends}}{\text{Number of common shares outstanding}}
\]
   
   = \[
\frac{\$550,000}{1,300,000}
\]
   
   = $0.42
b. Dividends payout = \( \frac{\text{Common stock dividends}}{\text{Available earnings}} \)
\[= \frac{550,000}{2,400,000} = 0.23 = 23\% \]

2. a. Market value = Price per share \( \times \) Number of shares owned
\[= 275 \times 300 = 82,500 \]

b. After the 3 for 1 stock split, the number of stocks you own has tripled to 900 shares. However the price per share then adjusts accordingly and is approximately $91.67 per share. The market value is still the same: $275/3 \times 900 = 82,500.

After the 15% stock dividend, you own 300 \( \times \) 1.15 = 345 shares. The market value of your investment is still $82,500 as now the shares are worth $275/1.15 = $239.13 per share.

3. Under the ordinary voting procedure, you may cast some or all 500 votes for Ms. W. because one share equals one vote. Under the cumulative voting procedure, you may cast some or all of 500 \( \times \) 4 = 2000 votes for Ms. W.
FILL IN THE BLANKS

Answers

1. preferred; Preferred, income, common; preferred, common; priority, preferred

2. preferred; preferred, first, common; dividends, cash, shares; preferred, quarterly, fixed, floating

3. Fixed, percentage, fixed; variable, adjustable-rate, quarterly, reset; perpetual, collar; issuer, costs, limited, investor, return, lower

4. auction, periodically; Remarketed, agent, tendered, offering; investor, resets, auction, remarked

5. cumulative, dividend, before, common; noncumulative, not, forgotten, future; cumulative; arrearage, arrears; cumulative

6. conversion, conversion, common, preferred, common; price, ratio, value, common; preferred, premium

7. Callable, buy, shareholder; price; price, set, change, schedule; greater, stated

8. obligation, bondholders, creditors, assurance, sinking; trustee, funds, retire, sinking; preferred, dividend
9. features, package; attractive, cost; issuer, call, investor, conversion; returns, risk, flexibility, costs

**SHORT ANSWER QUESTIONS**

**Answers**

1. No longer are only common shareholders allowed to share in the earnings of a firm. Participating preferred stock allows preferred shareholders to share as well. The sharing of earnings is conducted one of two ways, either in addition to the already stated preferred dividend or it can fluctuate along with the dividend for the common stock.

   There are very few participating preferred stock issues because:

   ■ Originally created as a substitute for debt, preferred stock was initially used by firms in failing health. Therefore the cash in hand, by way of dividend, is better than taking a chance on a sick firm’s future earnings that may never materialize.

   ■ If a firm has participating preferred stock, it reduces the benefits to common shareholders because regardless of firm health, common shareholders are always the last to receive anything. However in good times, while the common shareholder is still the last to receive, there is at least more to receive after obligations (bondholders and preferred shareholders) are paid.

2. Convertible preferred stock and mandatory preferred stock both give the shareholder the right to exchange the preferred shares for common shares. Convertible preferred stock can convert at a predetermined rate of exchange while mandatory preferred stock must convert within a specified period of time.

   The issuer’s perspective on mandatory convertible preferred is that it is beneficial because the firm is freed from its requirement to pay preferred dividends. For the investor, the time limitation on conversion is a cost as the preferred shareholder forfeits the dividend in place of a less profitable and fixed investment.

3. Yes, there are contingent voting rights attached to preferred stock. This means that the right to vote is invoked only when dividends have not been paid for some time. However, this right to vote is very limited.
4. To convert preferred stock into common stock requires investors to consider:

- The uncertainty of the common stock dividend
- The certainty of the preferred dividend
- The unlimited common stock price appreciation
- The limited preferred stock price appreciation

5. Advantages to issuing preferred stock:

- To raise capital in outside markets
- To maintain voting concentration for common shareholders
- Preferred is cheaper and less risky
- Preferred dividends are not taxes

Disadvantages to issuing preferred stock:

- Preferred stockholders have a claim on income and assets.
- Preferred shares have historically been issued by unhealthy firms.

**PROBLEMS**

**Answers**

1. Dividend for one year = \(1,100,000 \times 100 \times 8\% = 8,800,000\)

   Arrearage after four years = \(8,800,000 \times 4 = 35,200,000\)

2. Conversion value = \(500 \times 25 \times \text{Market price of common share} \)

   Conversion value = \(500 \times 25 \times 30 = 375,000\)

3. Dividends per share = 0.0975($80) = $7.80 per share, per year

   Total dividends = \(7.80(3,000,000/80) = 292,500\) per year
FILL IN THE BLANKS

Answers

1. debt, finance, capital; capital, equity, equity

2. Interest, financial; Financial, decisions, creditors; not

3. debt, equity, creditors; equity, debt, share, return, earnings

4. risk, standard, coefficient; larger, standard, coefficient, greater

5. rate, capitalization, discount, future, value; capitalization, future; uncertain, less, greater

6. premium, discount, income, discount, earnings, interest, free; greater, debt, greater, risk

7. tax shield; marginal, expense; marginal, interest, value

8. exceed, operating; taxes, loss, loss; loss, previous, income

9. limited, assets, debt, risky, creditors, unprofitable; conflict, shareholders’, creditors’

10. bankruptcy, direct, indirect; Direct, accounting; indirect, difficult
SOLUTIONS

SHORT ANSWER QUESTIONS

Answers

1. Debt financing is can be more attractive than equity financing because of the interest and principal payments that are required. These steady streams of obligated cash flow (principal and interest payments) indicate the firm is able to maintain these payments as they are guaranteed obligations. All the interest paid is tax deductible. With equity financing, the cash flows (dividends) are neither guaranteed nor tax deductible.

2. Debt ratios differ across industries because the different industries use financial leverage differently. Some industries are prone to financial distress more than others and this is reflected in their ratios. Also, some industries receive tax benefits and are able to capitalize on that which improves their ratios.

   Debt ratios differ within industries since firms within the industry may not be uniform. Also, since subsidiaries financials are subsumed into the parent’s financials, the capital structure of the combined may differ from the components. Firms may use differing methods to calculate the ratios, hence the lack of similarity between firms in an industry.

3. The leverage effect is the use of financial leverage. Debt financing requires that principal and interest payments be paid: These payments are not optional. So, if earnings are inadequate, then the firm is obligated to cover these payments through other means and sources of capital. Firms may sell off assets, take on more debt, or issue secondary shares of stock in order to raise the funds to meet the debt payments.

4. The tax shield reduces the net income which is taxable income. Therefore, the value of the firm is being subsidized by the tax shield. The greater the debt, the greater the tax shield deducted from income.

5. The relationship between financial distress and capital structure is of a spiral nature. The more debt a firm takes on, the more of a tax shield they receive. However, the more debt the firm takes on, the less likely it becomes that it will be able to service the debt. When this happens, the firm expends other measures not to default on the debt and hence gets deeper into debt. Eventually the firm goes into financial distress followed by bankruptcy. Factors to be considered are:
■ Causes to increase debt financing
■ Business risk
■ Sales risk
■ Operating risk

6. When making capital structure decisions, financial managers must consider the following factors and ask themselves a multitude of questions:

■ Taxes: Can they benefit? How? Is there enough debt in the mix?
■ Risks: What types? Can they be removed or at least minimized?
■ Type of assets: Do they produce? Can they be liquidated? Is there enough equity in the mix?
■ Financial slack: Is it present? Does the firm need more or less?

PROBLEMS

Answers

1. Firm Z

Debt ratio = $34,000
$50,000 = 0.68

Debt-to-assets = $34,000
$84,000 = 0.405

Firm Z’s debt ratio of 0.68 means that it finances its assets using $0.68 of debt for every $1 of equity. Likewise, Firm Z’s debt-to-assets ratio means that 40.5% of its assets are financed with debt or alternatively, 40.5 cents of every $1 of assets is financed with debt.

2. Calculation of the capitalization rate for levered Firm Z, with no taxes:

Given:

\[ r_e \text{ (unlevered)} = 0.09 \text{ or } 9\% \]
\[ r_d \text{ (risk free debt)} = 0.05 \text{ or } 5\% \]
\[ t_c = 0\% \text{ (no corporate taxes)} \]

Solve: cost of equity \( r_e \) for levered firms:
Firm Z:

\[ r_e = 0.09 + \left[ (0.09 - 0.05) \left( \frac{34,000}{50,000} \right) \right] \]

\[ = 0.09 + 0.04(0.68) \]

\[ = 0.09 + 0.0272 \]

\[ = 0.117 \text{ or } 11.7\% \]

3. Corporate taxes \((t_c = 25\%)\)

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
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<tr>
<td>Earnings before interest</td>
<td>$200,000</td>
<td>$200,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Interest</td>
<td>0</td>
<td>50,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Earnings after interest</td>
<td>$200,000</td>
<td>$150,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Tax (25%)</td>
<td>50,000</td>
<td>37,500</td>
<td>25,000</td>
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<tr>
<td>Earnings after taxes</td>
<td>$150,000</td>
<td>$112,500</td>
<td>$75,000</td>
</tr>
<tr>
<td>Number of shares</td>
<td>(\pm 1,000,000)</td>
<td>(\pm 500,000)</td>
<td>(\pm 10,000)</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>$0.15</td>
<td>$0.225</td>
<td>$7.50</td>
</tr>
</tbody>
</table>

Distribution of earnings:

- Earnings to shareholders: $150,000, $112,500, $75,000
- Earnings to bondholders: 0, 50,000, 100,000
- Earnings to government: $50,000, $37,500, $25,000

Total earnings: $200,000, $200,000, $200,000

4. Calculation of the present value of interest tax shields for different marginal corporate tax rates:

Given:

\[ D = \$100,000 \]

\[ r_d = 0.12 \text{ or } 12\% \]

Solve: PVITS (present value of interest tax shield) for various tax rates on corporate income

\[ \text{PVITS} = t_c D = 0.12(\$100,000) = \$12,000 \]
CHAPTER 19
Management of Cash and Marketable Securities

FILL IN THE BLANKS

Answers

1. operating, generate, assets, risk, current, working; benefits; current, circulating

2. operating; current; manufacture, sell, collect; net, credit; longer, larger

3. out, purchases; into, pay, purchase; cash, cashlike; management, inflows, outflows, cash

4. uncertainty; precautionary, needs, balance; precaution, degree, predict

5. sell, borrow; transaction; transaction, commissions, selling, borrowing, inventory

6. incoming, lockbox, banks, checks, electronic, concentration; clearinghouse; reduce, Federal Reserve; correspondent

7. slowing; controlled, minimizing, immediate, remote, owed, not, increasing, float
8. immediately; certificates, commercial, Eurodollar, Treasury; safety, risks, default, purchasing, interest, reinvestment, liquidity

**SHORT ANSWER QUESTIONS**

**Answers**

1. Firms invest in both short-term and long-term assets for the same reason: to maximize owners’ wealth. For short-term or current assets, cash flow consideration is a high priority. For long-term assets, both cash flows and the time value of money are priorities. The investment in short-term assets is influenced by many factors. They are:

   - Business type
   - Product being created
   - Operating cycle
   - Industry practices
   - Customs
   - Traditions
   - Uncertainty inherent in the business

2. Cash forecasting is exploring the need for cash by investigating short-term estimates, in particular, the method for generating the cash, the quantity needed, and the time frame for getting the cash. In order to fully understand the process, knowledge of the operating cycle and net operating cycle are important. The operating cycle is the time it takes to make cash out of cash. The net operating cycle is the time it takes to make cash from cash plus the time payments are delayed on purchases necessary for production. The net operating cycle is a gauge for the cash to be generated. If the net operating cycle is short, then less cash on hand is needed as cash is generated fairly quickly. The opposite is true for longer net operating cycles.

3. Firms hold cash in order to meet the daily transactions from operations. Each firm must decide how much cash should be held on hand and how it should be administered.

4. The amount or cash balances held depends on the types and sizes of the transactions. Transactions for a grocery store are different from an auto manufacturer. The cash amount also depends on the firm’s
operating cycle. During slow times, more cash is needed than during peak periods of production.

Uninvested cash is not earning interest. This is called a holding cost and it is an opportunity cost because the cash could be earning money elsewhere.

5. A lockbox system is a system in which customers can send payments directly to a post office box controlled by the firm’s bank, bypassing the firm’s processing department. The lockbox system reduces mail float and processing float.

**PROBLEMS**

**Answers**

1. a. The average cash balance of the firm, assuming it lets the cash balance drop to zero before cash infusion, is $200,000 ($400,000/2). The holding cost is the lost revenue from investing this cash in short-term securities at 7%. Therefore, the holding cost is:

\[
\text{Holding cost} = 0.07(\$200,000) = \$14,000
\]

b. The firm needs $1 million each month, so it uses $12 million in a year. The transaction cost is the cost per transaction \(\times\) the number of transactions in a year. If the firm needs $12 million in a year’s time, and each cash infusion is for $400,000, the number of transactions is 30($12,000,000/$400,000). Therefore the transactions costs are:

\[
\text{Transactions cost} = \$100 \times 30 = \$3,000
\]

c. The cost per transaction is $100, the total demand for cash is $12 million, and the opportunity cost for holding the cash is 7%.

\[
Q^* = \sqrt{\frac{2($100)($12,000,000)}{0.07}} = \$187,164.02
\]

Therefore a cash infusion of $185,164 would minimize the costs associated with cash.
2. 
   a. The return point is the point at which a new cash infusion should be 
      made. The opportunity cost per day is $0.07/365 = 0.00019.

   \[
   \text{Return point} = \text{Lower limit} + 3 \sqrt{\frac{0.75(\text{Cost per transaction})(\text{Variance of daily cash flows})}{\text{Opportunity cost per day}}} \\
   = \left( \$500,000 + 3 \sqrt{\frac{0.75(\$100)(\$75,000)}{0.00019}} \right) \\
   = \$503,093.54
   \]

   Therefore, P&R will need a new cash infusion at $503,094.

   b. If cash balances exceed the upper limit, the difference between the 
      cash balance and the return point should be invested in marketable 
      securities. Using the Miller-Orr model to calculate the upper limit:

   \[
   \text{Upper limit} = \text{Lower limit} + 3 \times \sqrt{\frac{0.75(\text{Cost per transaction})(\text{Variance of daily cash flows})}{\text{Opportunity cost per day}}} \\
   = \left( \$500,000 + 3 \times \sqrt{\frac{0.75(\$100)(\$75,000)}{0.00019}} \right) \\
   = \$509,280.63
   \]

   Therefore P&R will invest in marketable securities when there is 
   cash in excess of $509,281.

3. The lockbox system will free $250,000/day × 3 days = $750,000 that 
   the firm may invest at 10%. The benefit from this is an additional 
   amount of income of 0.10 × $750,000 = $75,000. The wire transfers 
   will cost the firm $9,000. This is netted with the processing cost sav- 
   ings, so the additional cost is $9,000 − $5,000 = $4,000. The net ben- 
   efit to the firm is $75,000 − $4,000 = $71,000. Because this is greater 
   than the cost of the lockbox ($35,000), the system is worthwhile.

4. The order quantity that will minimize total costs for Jewelz is the eco- 
   nomic order quantity:
\[ Q^* = \sqrt{\frac{2 \text{(Cost per transaction})(\text{Total demand})}{\text{Carrying cost per unit}}} \]

\[ = \sqrt{\frac{2(\$190)(400,000)}{\$7}} \]

\[ = 4,659.86 = 4,660 \text{ stones} \]

Therefore Jewelz is not ordering the optimal amount to minimize its total cost.
CHAPTER 20

Management of Receivables and Inventory

FILL IN THE BLANKS

Answers

1. current, receivable, inventory, operation; inventory, goods, type, nature

2. credit, sales; credit, financial, marketing; sales, services; benefit, profit

3. carrying, holding, opportunity, investment; opportunity, return, opportunity; invested, sales

4. credit, interest; Annualizing, comparable

5. Credit, maximum, payment, discount, discount; discounts, customers, sales, payment, receivable

6. Collection, delinquent; reminders, severe, collection; aggressive, lost

7. Monitoring, receivable, ratios, aging; ratios, receivable; Aging, long, collection

8. credit, benefits, credit, cost; maximizes; uncertain; forecasting, experience
9. Subsidiary, owned, credit, collection; captive, finance, products; sales, loans

10. Inventory; Inventory, sale; factors; investing, insufficient; inventory, little

11. Monitoring, ratios; inventory, inventory; days; sales; demand, production, purchasing; inventory

**SHORT ANSWER QUESTIONS**

**Answers**

1. The extension of credit means that customers are allowed to pay for goods and services at a later date after purchase. This type of action creates accounts receivable as the provider of the goods or service is waiting to receive payment. This is also called trade credit which is an informal credit arrangement created in order to increase sales.

2. If a customer pays in full on the purchase date or within the discount period, the customer gets a discount from the invoice price. If the invoice is paid after the discount period, the customer must pay full price. In a sense, this is borrowing because the customer is borrowing the discounted price amount for the price of the discount. For example, if trade credit terms read 5/15, net 30, this means 5% reduction off the invoice if it is paid within 15 days of the purchase, thereafter, the full price is due by the 30th day after purchase. In a sense, if the invoice is $100, then the customer is borrowing $95 for $5. Costs related to granting credit are the cost of the discount, carrying costs (of accounts receivable), administration and collection costs, and risk of default by customers.

3. The following factors must be considered when extending credit:

   ■ The price elasticity of your goods and services
   ■ The probability of bad debts
   ■ Timing of customer’s payments

4. The factors that influence the creditworthiness of a firm are capacity, character, collateral, and conditions. Prior experience with customers,
previously assigned credit ratings, consumer reports, and financial condition all underlie these factors. In order for a firm to be deemed creditworthy, they must have high ratings and evidence of the four Cs.

5. Reasons to hold inventory:

- Need inventory to meet sales
- Need for staggering stages of produced goods
- Hold on to speculative inventory
- To satisfy contractual arrangements

6. The Economic Order Quantity (EOQ) model determines the quantity of inventory to order to minimize total inventory costs (carrying costs + ordering costs). The Economic Order Quantity model makes the following assumptions: (1) Inventory is received instantaneously; (2) inventory is steadily used; and (3) inventory shortages must be avoided.

The Just-in-Time Inventory (JIT) model is used to cut down on inventory costs by reducing inventory on hand and by coordinating the supply of raw materials with the production and marketing of the goods. The purpose of JIT is to carry no inventory or as little as possible without interfering with production and sales.

**PROBLEMS**

**Answers**

1. 

   a. If Retton’s customers do not take the discount pay on the 60th day, they are, in effect, borrowing the money for $60 - 20 = 40$ days. The discount: \[ r = \frac{2}{98} = 2.041\% \] and there are \[ \frac{365}{40} = 9.125 \] periods in a year. Therefore, the effective annual rate is:

   \[
   EAR = (1.02041)^{9.125} - 1 = 20.25\%
   \]

   If Retton makes the proposed change, the customers will now be paying $3 to borrow $97 for 45 days if they do not take the discount and pay on the 60th day. This makes the discount rate \[ r = \frac{4}{96} = 4.167\% \] and there are \[ \frac{365}{45} = 8.11 \] periods in a year, so the effective annual rate is \[ EAR = (1.03093)^{8.11} - 1 = 39.25\% \].
b. The cost to Retton of any discount is equal to the discount percentage times the credit sales using the discount (Retton has not changed its contribution margin).

Credit sales using discount = Sales × (% using discount)
= $500,000 × 0.6 = $300,000

Cost of discount = $300,000 × (0.02) = $6,000

Credit sales using discount = $800,000 × (0.75) = $600,000

Cost of discount = $600,000 × (0.04) = $24,000

The net cost to Retton of the change in the discount is therefore:

$24,000 – $6,000 = $18,000.

c. The carrying cost of the receivables is the opportunity cost of Retton’s investment in the accounts receivable. Retton’s investment is the variable cost of its accounts receivable.

Accounts receivable = ACP × Average daily sales
= 40 × $500,000/365 = $41,795

If the contribution margin is 25%, Retton’s variable cost ratio is 75%, so its investment in accounts receivable is 0.75 × $41,795 = $41,096. So the cost of carrying the receivables is 0.12 × $41,096 = $4,932.

Under the proposed credit terms, Retton’s accounts receivables will be equal to 30 × 800,000/365 = $65,753. Its investment in the accounts receivable is 0.75 × 65,753 = $49,315. So the cost of carrying the receivables is 0.12 × $49,315 = $5,918. The change in the cost is therefore $5,918 – $4,932 = $986.

d. A cost benefit analysis must be done. One benefit is the increased profit due to the increased sales:

Benefit from extending credit = (Contribution margin) × (Change in sales)
= 0.25($300,000) = $75,000

A cost is the increase in carrying costs of $986. So the firm enjoys the net benefits of $75,000 – $986 = $74,014. The new credit terms will cost the firm an additional $18,000 in discounts but because the benefits outweigh the costs, Retton should make the change.
CHAPTER 21

Management of Short-Term Financing

FILL IN THE BLANKS

Answers

1. cash, receivable, securities; working, profit; Working, permanent, continual, operations, temporary, difference

2. effective, financing, direct, indirect; funds, compounding

3. Trade, goods, services; Trade, future; seller’s, sales; customer’s, purchase; seller, receivables, customer, payable

4. payable, purchases; payable, receivable; minimize, credit, sales

5. uniform; customer, better; cost, discount, delayed; beyond, lowers

6. Secured, asset; assets, collateral; collateral, funds; current, marketable, receivable, inventory

7. receivable, secured; receivable, assignment, factoring, securitizing; securitization, short-, intermediate-

8. receivables, receivable, collateral; cash, promissory; amount

9. receivable, collateral, sell, factor; receivables; credit, credit, collecting
10. repurchase, repo; price, date; collateralized, security; repo; overnight, term

**SHORT ANSWER QUESTIONS**

**Answers**

1. The costs of borrowing are interest rates and fees. The different types of interest rates and fees are:

   - Annual percentage rate is the annualized cost of financing without compounding interest.
   - Effective annual rate is the annualized cost of financing with compounding interest.
   - A single payment loan is a loan in which everything—principal and interest—is paid at the end of the term.
   - A discount loan is a loan for only a portion of the total amount needed by the borrower because the interest is paid in the beginning prior to disbursing the loan.
   - Add-on-interest is the traditional idea of a loan in which a portion of the principal and interest is paid each period and interest is compounded.
   - Compensating balance is when a specific balance is required at all times.
   - A loan origination fee is a fee charged by the lender to perform credit checks and for legal fees in order to process the loan.
   - A commitment fee is a fee charged by the lender for the opportunity to use readily available loanable funds.

2. Secured and unsecured financing indicates the existence of collateral in order to guarantee repayment. Often creditworthy customers may be allowed unsecured financing if the lender is satisfied with the customer's ability to pay. If a customer is not creditworthy, then the lender will ask for collateral prior to granting a secured loan.

3. The longer the credit period, the lower the cost of trade credit. This is almost counter-intuitive. However, if one contemplates that the customer/borrower maintains the money that is due to the lender, then the effective annual cost is lowered. The shorter the time the customer/borrower has the money, the higher the effective annual cost
because the customer is, in a sense, not spreading the costs out over a longer period of time.

4. There is no doubt that waiting to pay reduces the cost of trade credit (see the answer to short answer question 3), however if the customer waits too long, then costly penalties can be charged. These penalties range from paying insurance, license fees, late fees, taxes, and bad credit fees.

5. A high turnover is good news if the borrower is reimbursing the sellers in a timely fashion. This establishes goodwill and the sellers will appreciate the prompt payment. High turnover can be bad news if discounts are overlooked as bills are being paid prior to their due date. In this case, the borrower is overpaying the seller twofold—once by paying in a timely manner, and again by paying the discount as a premium. It is as if the borrower is paying for the privilege to pay early.

Low turnover may be good news, as payments are not made too quickly. Granted, discounts cannot be taken advantage of, but the lower effective cost of trade is a benefit. Low turnover can be bad news if payments aren’t made in a timely enough fashion and the penalties listed in the answer to short answer question 4 are invoked.

6. The types of financing arrangements:

A single payment loan:

■ is the simplest short-term financing arrangement.
■ utilizes interest rates that are fixed or floating.

A line of credit:

■ is flexible because a bank makes the funds available.
■ has a fixed interest rate.
■ charges a firm a cost regardless of use.
■ has covenants.

A revolving credit agreement:

■ is similar to a line of credit.
■ is for two to three years.
■ allows the borrower to use the credit repeatedly.
■ charges a commitment fee, or compensating balance, and interest.
■ has a floating interest rate.
A letter of credit:

- can be either cancelable or committed by the bank.
- charges the borrower a commitment fee and interest.
- has a fixed interest rate.

There are other loan mechanisms that are sold in the financial markets. They are commercial paper and bankers’ acceptances.

Commercial paper:

- comes in large denominations.
- is unsecured.
- is backed by a line of credit from a bank.
- has interest rates that vary.

Bankers’ acceptances:

- commit a bank to make payment at maturity if the issuer defaults.
- are used in international trade.
- have maturities of less than 270 days.
- cost a commitment fee and a commission of the interest rate if the issuer defaults.
- have a discount interest rate.

PROBLEMS

Answers

1. The effective annual rate of each alternative must be determined.

   a. The interest charged by Bank A is 16%/4 = 4%, so 0.04 × $100,000 = $4,000. The compensating balance is 0.17 × $100,000 = $17,000. Deducting the compensating balance and the loan origination fee from the face value of the loan leaves CZ with $100,000 – $17,000 – $1,000 = $82,000 of usable funds. The three-month interest rate is then ($4,000 + $1,000)/$82,000 = 6.10%. There are three four-month periods in one year so EAR = (1.061)^3 = 19.44%.
b. The interest charged by Bank B is 20%/3 = 6.67%, so 0.0667 \times 100,000 = 6,670. The compensating balance is 0.10 \times 100,000 = 10,000. Because the loan is a discount loan, the interest is deducted at the beginning of the loan. Deducting the interest and the compensating balance from the face value of the loan leaves CZ with $100,000 – $10,000 – $6,670 = $83,330 of usable funds. The three-month interest rate is $6,670/83,330 = 8.00%. There are four three-month periods in one year so \text{EAR} = (1.08)^4 = 36.05%.

c. The interest charged by Bank C is 24%/12 = 2%, so 0.02 \times 100,000 = 2,000. Because there is no loan origination fee and no compensating balance requirement, CZ has full use of $100,000. The one-month interest rate is $2,000/$100,000 = 2%. There are 12 months in one year so the \text{EAR} is (1.02)^{12} – 1 = 26.82%.

d. If CZ uses the trade credit, it will forgo $3 in order to borrow $97 for 35 days. The 35-day interest charge is $3/$97 = 3.09%. There are 10.4 35-day periods in one year, the \text{EAR} = (1.0309)^{10.4} – 1 = 37.23%.

The order of cheapest source to most expensive is: Bank A, Bank C, Bank B, Trade Credit.

2. Safe-T paid $9,700,000 – $9,500,000 = $200,000 to use $9,500,000 for 30 days. The 30-day interest rate is $200,000/$9,500,000 = 2.11%. There are 12.2 30-day periods in one year so the effective annual cost is (1.0211)^{12.2} – 1 = 29.01%.

3. The interest on the loan is 0.11 \times 1,000,000 = $110,000. The warehouse fee is 0.035 \times 1,000,000 = $35,000. Deducting the fee from the proceeds of the loan, Rustee will have $1,000,000 – $35,000 = $965,000 in usable funds. The effective annual cost is ($110,000 + 35,000)/$965,000 = 15.03%.

4. The five-month interest rate is ($250,000 – $237,500)/$237,500 = 5.26%. There are 2.4 five-month periods in a year so the \text{EAR} = (1.0526)^{2.4} – 1 = 13.09%.

5. We’re #1 charges 40 basis points above prime or 4.4% APR. This is a monthly rate of 4.4/12 = 0.37%. There are no other fees so the effective annual rate is (1.0037)^{12} – 1 = 4.5%.

We’re #2 charges 30 basis points above the prime rate or 4.3% APR. This is a monthly rate of 4.3/12 = 0.36%. The interest fee for
the month is then $0.0036 \times 640,000 = $2,304$. They also charge a fee up front of $0.02 \times $800,000 = $16,000$. Chips will save $4,000 in credit processing costs, however if we assume that these are saved up front, we can net these savings with the fee charged and get $16,000 – $4,000 = $12,000$. Chips will have usable proceeds from the loan of $640,000 – $12,000 = $628,000$. The effective monthly cost of the loan is $(2,304 + 12,000)/$628,000 = 2.28\%$. The EAR = $(1.0228)^{12} – 1 = 31.07\%$.

We’re #1’s terms are least costly for Bags-O-Chips.
Financial Ratio Analysis

FILL IN THE BLANKS

Answers

1. ratio, ratio, comparison; constructed, characteristic; combinations, statements

2. investment, benefits, investment; assets, power, operating; equity, income, equity

3. return, profit, turnover, Du Pont; components, why, performance

4. Liquidity, short, cash; cash, liquid, current; Current, working, day-to-day

5. operating; operating, cash, services, cash; longer, operating, greater, working

6. profit, income, sales; income, dollar; gross, production; gross, sales

7. Activity, assets, inventory, receivable; inventory, goods, services; receivable, credit; total asset, value, sales

8. risk, debt, equity; leverage, risk; leverage, component, coverage

9. Interest, interest-covered, burdens; interest, debt; greater, better, interest
10. Common-size, statement; common-size, balance, income; calculate, benchmark; balance, assets; income, sales

**SHORT ANSWER QUESTIONS**

**Answers**

1. The most basic way of presenting financial information is in ratio format. Ratio analysis can be used to analyze the overall picture of a firm and compare across firms. Ratios are classified according to the characteristic they are measuring:

   ■ A coverage ratio measures “coverage” of financial obligations.
   ■ A return ratio measures net benefit from an investment.
   ■ A turnover ratio measures the functionality of a firm’s assets.
   ■ A component percentage is the ratio comparing one amount in a financial statement to the total of the amounts.

2. Five aspects of operating performance that should be analyzed for overall viability of the firm are:

   ■ Return on investment
   ■ Liquidity
   ■ Profitability
   ■ Activity
   ■ Financial leverage

   It is important to know whether or not the firm is functioning to its best capacity and if assets are being used properly in order to obtain the goal of maximizing shareholder wealth.

3. The Du Pont system measures the source of performance. It does so by decomposing return ratios into components that identify which area is responsible for the performance.

4. Book value is an accounting measure and involves past values. It does not capture the dynamic value as seen by the market and what an investor is likely to pay. Because the two measures are different by nature, book value and market value are not highly correlated.
5. Financial ratio analysis tells a partial story based on book values. It does not necessarily tell the entire story. There are many limitations of ratio analysis and this needs to be considered when attempting to analyze a firm. Other concerns arise with the methods and data used in forecasting and in the selection of the correct benchmark. Keep in mind that accounting data can be unreliable and can only tell so much.

**PROBLEMS**

**Answers**

1. Recall, data from financials are assumed to be × $100,000. Overall, we can see that Wang is struggling to recover after bankruptcy.

   a. Current ratio = \( \frac{425,000}{381,000} \) = 1.12 times

   b. Quick ratio = \( \frac{401,000}{381,000} \) = 1.05 times

   c. Inventory turnover = \( \frac{656,000}{24,000} \) = 27.33 times

   d. Total asset turnover = \( \frac{946,000}{859,000} \) = 1.10 times

   e. Gross profit margin = \( \frac{946,000 - 656,000}{946,000} \) = 30.7%

   f. Operating profit margin = \( \frac{-63,000}{946,000} \) = -6.66%

   g. Net profit margin = \( \frac{-58,000}{946,000} \) = -6.13%
h. Debt-to-assets ratio = \( \frac{494,000}{859,000} = 57.61\% \)

i. Debt-to-equity ratio = \( \frac{494,000}{366,000} = 135\% \)

j. Return on assets (basic earning power) = \( -\frac{63,000}{859,000} = -7.33\% \)

k. Return on equity = \( -\frac{58,000}{366,000} = -15.8\% \)

l. Average day’s cost of goods sold = \( \frac{656,000}{365 \text{ days}} = $1,797 \text{ per day} \)

\[
\text{Number of days of inventory} = \frac{24,000}{1,797 \text{ per day}} = 13.36 \text{ days}
\]

m. Assuming all sales on credit:

\[
\text{Credit sales per day} = \frac{946,000}{365 \text{ days}} = $2,592 \text{ per day}
\]

\[
\text{Number of days credit} = \frac{182,000}{2,592} = 70.22 \text{ days}
\]

n. Assuming all purchases on credit:

\[
\text{Average days purchases} = \frac{656,000 - 134,000}{365 \text{ days}} = $1,430 \text{ per day}
\]

\[
\text{Number of days of purchases} = \frac{381,000}{1,430} = 266.43 \text{ days}
\]

o. Operating cycle = 13.36 days + 70.22 days = 83.58 days
p. Net operating cycle = 83.58 – 266.43 days = –182.85 days

2. The industry ratios:

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Industry Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>2 times</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>1 times</td>
</tr>
<tr>
<td>Number of days of credit</td>
<td>90 days</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>35 times</td>
</tr>
<tr>
<td>Total asset turnover</td>
<td>3 times</td>
</tr>
<tr>
<td>Debt-to-equity ratio</td>
<td>45%</td>
</tr>
<tr>
<td>Operating profit margin</td>
<td>10%</td>
</tr>
<tr>
<td>Net profit margin</td>
<td>7%</td>
</tr>
<tr>
<td>Return on assets</td>
<td>9%</td>
</tr>
<tr>
<td>Return on equity</td>
<td>11%</td>
</tr>
</tbody>
</table>

Wang’s ratios:

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>1.12 times</td>
</tr>
<tr>
<td>Quick ratio</td>
<td>1.05 times</td>
</tr>
<tr>
<td>Number of days of credit</td>
<td>30 days</td>
</tr>
<tr>
<td>Inventory turnover</td>
<td>27.33 times</td>
</tr>
<tr>
<td>Total asset turnover</td>
<td>1.10 times</td>
</tr>
<tr>
<td>Debt-to-equity ratio</td>
<td>135.0%</td>
</tr>
<tr>
<td>Operating profit margin</td>
<td>–6.66%</td>
</tr>
<tr>
<td>Net profit margin</td>
<td>–6.13%</td>
</tr>
<tr>
<td>Return on assets</td>
<td>–7.33%</td>
</tr>
<tr>
<td>Return on equity</td>
<td>–15.8%</td>
</tr>
</tbody>
</table>

All in all, Wang is still struggling to emerge from bankruptcy. The current ratio and the quick ratios do show that Wang can cover current obligations. However, that is about all they can do until they can regain their financial footing. They do have fewer number of days of credit, which implies that they want to receive customer payments sooner, and while extending credit does increase sales, Wang might be able to lengthen the number of days after it gets in better shape. Currently, the cash flow from accounts receivable is in demand by the company. Wang is carrying entirely too much debt and turnover is too slow relative to the industry. They have negative profit margins and returns indicating they are losing money. Management needs to take a hard look at what it can do to improve the firms financial health or else it may want to consider filing for Chapter 22 (Chapter 11 for the second time).
FILL IN THE BLANKS

Answers

1. prices; future, forecasted, stock; stock, over, under

2. Forecasting; historical, current, earnings, dividends; value

3. operations, operating, EBIT; overall, net income, less; common shareholder’s, preferred

4. amount, dollar; income, share, market; EPS, common, outstanding

5. Basic; Diluted, dilutive; earnings, restate

6. future, cash, prices; publicly, analysts; providers, forecasts

7. consensus, average; surprise, actual, forecasted, forecasted

8. Consensus, individual, explaining, momentum, torpedo; growth, current, next

9. future, previous, autoregressive; time, historical, adjusted; statistical, previously

10. earnings; price-earnings, P/E; price, earnings; stock, earnings; inverse, yield, E/P
SHORT ANSWER QUESTIONS

Answers

1. The market price of a share of stock is dictated by the price paid for it. The price is the reflection of investors’ beliefs concerning the future stream of cash flows.

2. Earnings management is when financial information is manipulated (through accounting methods, inventory methods, depreciation methods, and timing) so the financials look better than they actually are. In other words, earnings management attempts to paint a rosier picture of a firm that may have something to hide or else just wants to outshine its competitors. The financial analyst must be very familiar with the business practices and their methods in order to provide accurate information to investors.

3. The relationship between earnings and stock price is as follows:

■ Stock prices rise or fall in response to an announcement of unexpected good or poor earnings.
■ Accounting earnings are correlated more with long-term stock returns than short-term stock returns.

The source of this relationship is unclear. Some believe that the strong relationship is because earnings are not managed and others believe reported earnings drive stock price.

4. Earnings per share is influenced by the changing number of common shares outstanding. Changes in shares outstanding occur because of:

■ Timing: Since the number of shares outstanding changes constantly, this movement is highly dynamic compared to the net income that is earned over the same time. So for any given company, it may show a variety of EPS measures throughout the year because the number of shares is constantly in flux, however the EPS measures are calculated at specified intervals.
■ Dilutive securities: The existence of convertible securities such as convertible preferred stock, employee stock options, convertible bonds, and warrants are exercised at different times thus changing the number of shares that influence the denominator of the EPS ratio.
The changing number of common shares outstanding is the cause for the multiple forms of EPS:

- Basic earnings per share (BPS) are earnings minus preferred dividends, divided by the average number of shares outstanding.
- Diluted earnings per share (DPS) are earnings minus preferred dividends, divided by the number of shares outstanding considering all dilutive securities.

5. The accuracy of EPS forecasts depends completely upon the validity of the data, the quantity of data (meaning the number of years’ worth of data) and the type of statistical method. Often the data used in forecasting EPS are historical EPS of the company, however, the EPS measures must be recalculated based on the adjustments in accounting policy. Forecasting based on trends of EPS can be precarious and is model dependent, and the results should be interpreted with extreme caution. There is conflicting literature concerning the value of financial analysts’ forecasts. Some hold that analyst forecasts are not any better than the currently used statistical models and others say they are better because analysts can process the current information and apply human reasoning. The point is that the accuracy of the forecast is only as good as the data, the model, and the modeler, which leaves much room for doubt and mistakes. Don’t kill the analysts, they are only human.

PROBLEMS

Answers

1. Finding the earnings per share (EPS) for the end of the year:

   \[
   \text{Earnings per share} = \frac{\text{Earnings available to common stockholders}}{\text{Number of common shares outstanding}}
   \]

   \[
   \text{EPS} = \frac{$6.5 \text{ million}}{1.87 \text{ million}} = $3.48 \text{ per share}
   \]

   This is a rough measure as it does not consider time. If time is considered, then the estimate for EPS changes.
Q1 = 1.5 million shares outstanding, Q2 = Q3 = Q4 = 1.87 million shares, then

\[
\text{EPS} = \frac{\$6.5 \text{ million}}{0.25(1.5 \text{ million shares}) + 0.75(1.87 \text{ million})} = \frac{\$6.5 \text{ million}}{1,777,500 \text{ shares outstanding}} = \$3.67 \text{ per share}
\]

2. a. Dividend Payout Ratio

\[
\frac{\text{Dividends}}{\text{Earnings available to common shareholders}} = \frac{\$0.30}{\$1.80} = 16.7\%
\]

b. P/E ratio \( = \frac{\text{Market price per share}}{\text{Earnings per share}} = \frac{\$28.50}{\$1.80} = 15.83\)

c. Investors base their purchase decisions on expected future earnings, not on past earnings. The P/E ratio indicates how much investors are willing to pay for each dollar of current earnings per share. It does not take future earnings into account, but investors do. It can be shown that sometimes investors are too optimistic and have paid for overvalued stock.

3. BPS \( = \frac{\text{Earnings available to common shareholders} - \text{Preferred dividends}}{\text{Number of shares outstanding}}\)

DPS \( = \frac{\text{Earnings available to common shareholders} - \text{Preferred dividends}}{\text{Number of shares outstanding including all dilutive securities}}\)

Because there is no specific method of timing, weighted measures are not used.

\[
\text{BPS} = \frac{\$4,355 \text{ million}}{1,300 \text{ million shares outstanding}} = \$3.35 \text{ per share}
\]
4. a. Forecast error = \frac{Actual\ EPS - Consensus\ EPS}{Actual\ EPS} = \frac{$1.82 - $1.95}{$1.82} = -7.14\%

b. The forecast error is \(-7.14\%\), meaning that the actual was 7.14\% lower than the forecasted. The market will react negatively to the worse-than-expected earnings and the stock price should decrease accordingly.
CHAPTER 24

Cash Flow Analysis

FILL IN THE BLANKS

Answers

1. Cash, valuation, value, future; past, current, dividends, expenditure, financing

2. measuring, into, out; cash, size, demands, working

3. nondiscretionary, discretionary; statement, flexibility, decisions, health

4. no, calculating; measure, methods, calculate

5. net free, NFCF; earnings, less; expenditures, maintenance, expansion, working

6. Net, unconstrained; creditor’s, ability, debt; shareholder’s, reinvested

7. capital expenditures, capital expenditures; flexibility, capital; larger, greater

8. debt, debt, debt; ability, debt, credit

9. information, condition; Healthy, unhealthy, operations, declining; unhealthy, more
SHORT ANSWER QUESTIONS

Answers

1. There is no uniform definition of cash flow, so it must always be discussed in context. Cash flow can be the total amount of cash flowing into and out of the company during a period. It can be the net of those cash flows. Some ways to measure cash flow are:

- Add noncash expenses to net income
- Calculate earnings before interest, taxes, depreciation, and amortization
- Use the statement of cash flows

2. The direct method of reporting cash flow is reporting all cash inflows and outflows. The indirect method begins with net income and makes adjustments for depreciation, noncash expenses, and changes in working capital. Of the two, the direct method is the most computationally expensive.

3. Examining the cash flows from operations, investments, and financing activities, an analyst can gauge the activities of the firm. Please refer to Exhibit 24.1 on page 802 of Financial Management and Analysis for more detail.

4. Michael Jensen developed the theory of free cash flow which is the cash flow left over after the company funds all positive NPV projects. In other words, free cash flow is the cash flow of the firm, less capital expenditures necessary to stay in business and grow at the expected rate. Free cash flow reveals how firms actually get rid of their excess cash. This can be done through dividend payments to shareholders, retirement of debt, repurchase of stock, and the like. If free cash flow is not purged, the firm holding the free cash flow could become a takeover target by a firm that needs free cash flow.

5. An analysis of cash flows can reveal a more accurate picture of a firm’s health and operations. The analysis reveals:

- The sources of financing for the company’s capital spending
- The company’s dependence on borrowing
- The quality of earnings
Answers

1. Although there are several variations on how to calculate the various free cash flows, the method that is applied to this problem can be found on page 808 of *Financial Management and Analysis*. The purpose of choosing this method is to keep the calculations simple.

<table>
<thead>
<tr>
<th>Free Cash Flows</th>
<th>In Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>$21</td>
</tr>
<tr>
<td>Depreciation and amortization</td>
<td>$4</td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>($15)</td>
</tr>
<tr>
<td>Free cash flow</td>
<td>$10</td>
</tr>
<tr>
<td>Interest</td>
<td>($2)</td>
</tr>
<tr>
<td>Taxes</td>
<td>($7)</td>
</tr>
<tr>
<td>Net free cash flow</td>
<td>$1</td>
</tr>
<tr>
<td>Cash dividends</td>
<td>($2)</td>
</tr>
<tr>
<td>Net cash flow</td>
<td>($1)</td>
</tr>
</tbody>
</table>
FILL IN THE BLANKS

Answers

1. domestic; financing, investment, international, domestic; financial, global

2. protectionism; Agreement, Tariffs, barriers; International Monetary, IMF; European, economic; American, Trade, NAFTA, goods

3. multinational, countries; multinational, borders; domestic, markets, production, resources, hurdles, technology

4. currencies; exchange, currency; exchange, currency, value; exchange-rate, adversely

5. loses, depreciated, devalued; gains, appreciated, revalued

6. no, price, same; one, currencies, price; purchasing power, PPP

7. Income, indirect, central, corporate; sales, business

8. subsidiaries; intercompany, transfer; congruence, multinational; taxes, income, import
9. Globalization, integration; internal, national, external; domestic, foreign; domestic, domiciled, traded

10. segmented, integrated; segmented, not; integrated, no; neither, mildly, mildly

11. bond, foreign, Euromarket; underwritten, simultaneously, outside, unregistered; Eurobond

12. cost, international, domestic, international; foreign, repatriation, political; restrictions, capital

**SHORT ANSWER QUESTIONS**

**Answers**

1. As the global community gets smaller and more easily accessible, firms should participate in the international market for the sake of survival, competition, and increasing profits. Because everything today is more global, a firm in isolation will have trouble competing. If firms cannot compete, they do not survive. The goal of the firm is to maximize shareholder wealth and with the advent of computers and advanced telecommunications, this can be done through worldwide expansion in friendly markets.

2. Free trade is the ability of countries to trade with one another without being constrained. Free trade promotes specialization which makes production more efficient and increases output. This in turn increases competition which translates into product variety and lower prices for the consumer. Free trade benefits countries that have a comparative or competitive advantage, however it hurts those that don’t.

3. Corporate income tax is based on a percentage of income earned. The rate can vary within the country, such as in the United States where there are tax brackets, and it can vary between countries. If a company has foreign branches and/or subsidiaries, it is customary for resident corporations to be taxed by the main country on the entire worldwide income. Some countries repatriate taxes, meaning they return some of the taxes back to the country in which the subsidiary resides. If a company is a nonresident corporation, then that company
only pays taxes on the income earned within the country. Some countries have tax treaties that allow for negotiation of tax treatments.

4. There is no set global definition of taxable income, therefore it varies from country to country. Nonresident corporations and expatriates often must obtain an accountant in the foreign country and one in their home country in order to fully determine taxable income because there are multiple methods in dealing with some of the accounting data. Such items that are treated differently are depreciation, inventory, the deductibility of interest expense, and inflation of expenses.

5. When a corporation issues equity outside of its domestic market and it is traded in the foreign market, it is an international depository receipt (IDR). Banks issue IDRs as proof of ownership and hold them in trust for the owner. A benefit to the IDR is that the issuer is released from foreign regulatory issuing requirements.

The American depository receipt (ADR), is the U.S. version of the IDR. Characteristics of ADRs are:

- They are denominated in U.S. dollars.
- They pay dividends.
- They do not grant the holder voting rights or any rights that give authority in the company.

PROBLEMS

Answers

1. A Venezuelan bolivar is worth $0.000626 U.S.
   An Australian dollar is worth $0.64 U.S.
   a. There are $0.64/$0.0006 = 1,066.67 Venezuelan bolivars per Australian dollar
   b. There are $0.0006/$0.64 = 0.0009375 Australian dollars per Venezuelan bolivars

2. Consider, $10,000 (35,000 ARS):

   In terms of AR: Return = \( \frac{43,750 - 35,000}{35,000} = 25\% \)
In terms of US$: Return = \frac{12,500 - 10,000}{10,000} = 25\%

a. Return = \frac{875 - 10,000}{10,000} = -91.25\%

b. Return = \frac{21,875 - 10,000}{10,000} = 1.19\%

3. a. Transfer price = $30

<table>
<thead>
<tr>
<th></th>
<th>U.S. Parent Company Alone</th>
<th>Subsidiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$6,000,000</td>
<td>$38,000,000</td>
</tr>
<tr>
<td>Variable manufacturing costs</td>
<td>$4,000,000</td>
<td>$9,000,000</td>
</tr>
<tr>
<td>Fixed manufacturing costs</td>
<td>$3,000,000</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Taxable income</td>
<td>($1,000,000)</td>
<td>$23,000,000</td>
</tr>
<tr>
<td>Income taxes</td>
<td>0</td>
<td>$12,150,000</td>
</tr>
<tr>
<td>Net income after taxes</td>
<td>($1,000,000)</td>
<td>$14,850,000</td>
</tr>
</tbody>
</table>

Worldwide income taxes: $12,150,000

Worldwide net income after taxes: $13,150,000

b. Transfer price $50

<table>
<thead>
<tr>
<th></th>
<th>U.S. Parent Company Alone</th>
<th>Subsidiary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$10,000,000</td>
<td>$38,000,000</td>
</tr>
<tr>
<td>Variable manufacturing costs</td>
<td>$4,000,000</td>
<td>$13,000,000</td>
</tr>
<tr>
<td>Fixed manufacturing costs</td>
<td>$3,000,000</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Taxable income</td>
<td>$3,000,000</td>
<td>$23,000,000</td>
</tr>
<tr>
<td>Income taxes</td>
<td>$900,000</td>
<td>$10,350,000</td>
</tr>
<tr>
<td>Net income after taxes</td>
<td>$2,100,000</td>
<td>$12,650,000</td>
</tr>
</tbody>
</table>

Worldwide income taxes: $10,350,000

Worldwide net income after taxes: $14,750,000
CHAPTER 26

Borrowing via Structured Finance Transactions

FILL IN THE BLANKS

Answers

1. bond, loans, receivables; collateral, asset; finance, structured

2. structured, asset; bond, asset, funding; all-in-cost, lower

3. credit, asset; rating, ability, equity; loan; determinant, default, sell, loan

4. third, servicer, originator; payments, delinquencies, finance

5. Rating, servicer, servicer, credit; servicer, not, backup

6. structure, flows, payments, obligations; losses, rate; stress, risk, not, credit, credit

7. enhancement, fee, insurance, yield, credit; External, credit; Internal, senior; more, specific

8. easiest, insurance; insurance, guarantee; event; downgraded, downgraded

9. senior, internal, bond; several; yield, yields; lower, more, lower
10. Reserve, cash, spread; Cash; deposited, offset; spread, coupon, fee, expenses

**SHORT ANSWER QUESTIONS**

**Answers**

1. Structured finance refers to debt and related securities that are backed by collateral such as loans or receivables or third-party support. To make use of a structured financing, a lender would accumulate loans or receivables and use them as collateral for debt securities the lender would then issue. Therefore, the debt obligation that the lender issues is backed by the proposed incoming cash flows from the loans being paid into the lender or any accounts receivables.

2. The purposes for using structured financing are as follows:
   - Potential for reducing funding costs
   - To diversify funding sources
   - To accelerate earnings for financial reporting purposes
   - For regulated entities, potential relief from capital requirements
   - The tax treatment of sales to special purpose vehicles

3. A captive finance company is usually a subsidiary whose sole purpose is to provide financing to customers who buy the parent company’s products. Often the types of companies that utilize captive finance companies are manufacturers, however some retailers also will do this with what sounds like in-store-credit, however the outside credit provider is a captive finance company.

4. Credit rating agencies investigate:
   - The collateral’s credit quality
   - The quality of the seller/servicer
   - Cash flow stress and payment structure

   Verification of overall credit quality only comes after the rating agencies scrutinize the borrower’s ability to service the obligations and the borrower’s equity in the asset. Everything about the borrower comes under review from the servicing history to the financial condi-
tion of the borrower. If the borrower receives an acceptable rating, the borrower is free to obtain a structured financing; if not, then either the borrower must seek third-party credit help or give up on the structured financing.
FILL IN THE BLANKS

Answers

1. lease, lease, payments; lessor, lessee

2. Equipment, nontax, tax; Nontax, conditional sale, price, renewal; tax, lessor, lessee

3. advantage, leasing, lessees, conserves; borrows, equal; borrowing, equity, payment

4. payment, equipment, creditworthiness, economic; Leasing; delivery, installation; lease

5. standards, capital, liability, balance; operating, not; footnote, financial; capital, operating

6. cancelable, obsolescence; avoidance, cost; disposal, lessor; value, cost

7. covenants, restrictions, loan; true, Internal Revenue, true, loan

8. true, lower, superior; after-tax, superior; true, less, book, depreciation, interest

9. commercial, subsidiaries, leasing, captive, finance, investment, insurance
10. indirectly, working; Captive, subsidiaries, parent; Captives, lease

11. brokers, advisers, equipment; pricing, structuring, negotiating; lessees, lessor; brokerage; complexity, attractiveness, environment

12. synthetic, ownership, investor; off-balance, cost

**SHORT ANSWER QUESTIONS**

**Answers**

1. A typical leasing transaction works as follows: The lessee first decides all the particulars on the necessary equipment and the terms of delivery. Negotiations are made on the price and sales contract, including the lease agreement and the specifics. After signing of the lease, the equipment is delivered and paid for. When the term of the lease has concluded, the lessee may renew, buy the equipment outright, or return the equipment.

2. The leveraged form of a true lease of equipment is the ultimate form of lease financing. Its selling point (or leasing point) is the ability of the lessor to benefit from the tax treatment of depreciation while the lessee receives the lease at a lower cost.

3. Leasing is an alternative to purchasing, with benefits. Because it is similar to a debt obligation, the debt payments can be used by the lessee to conserve capital. Leasing is less expensive than purchasing, it preserves credit and avoids the risk of being saddled with obsolete equipment that will need to be disposed of. In general, leases are flexible for a variety of reasons, some of which are:

   - They are less restrictive.
   - They can be customized.
   - Financing is easily obtained.
   - Disclosure is unnecessary.
   - There is no maintenance.
   - There is less impact on cash flow.

4. There are two types of leases: operating leases and capital leases. Characteristics of operating leases are that there is no complete
transfer of ownership—the leased property is not capitalized, the lease is not reported on the balance sheet, lease payments are expensed, and they must be disclosed in the financial statements. A capital lease is leasing an asset but treating it as if it is purchased and financed over a designated period. Unlike operating leases, capital leases must be reported as a liability on the balance sheet. Further, there is a transfer of ownership and the lessee is allowed to receive the tax benefits of depreciation.

**PROBLEMS**

**Answers**

1. a. Depreciation amounts:

<table>
<thead>
<tr>
<th>Year</th>
<th>Depreciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$49,995</td>
</tr>
<tr>
<td>2</td>
<td>66,675</td>
</tr>
<tr>
<td>3</td>
<td>22,215</td>
</tr>
<tr>
<td>4</td>
<td>11,115</td>
</tr>
</tbody>
</table>

   b. Cost of the machine: $150,000
   Tax credit: 0
   Estimated pretax residual: $5,000 value after disposal costs
   Economic life of the machine: 5 years

<table>
<thead>
<tr>
<th>End of Year</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of machine</td>
<td>150,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lost tax credit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lease payment</td>
<td>(35,000)</td>
<td>(35,000)</td>
<td>(35,000)</td>
<td>(35,000)</td>
<td></td>
</tr>
<tr>
<td>Tax shield form lease payment$^a$</td>
<td>10,500</td>
<td>10,500</td>
<td>10,500</td>
<td>10,500</td>
<td></td>
</tr>
<tr>
<td>Lost depreciation tax shields$^b$</td>
<td>(14,999)</td>
<td>(20,003)</td>
<td>(6,665)</td>
<td>(3,335)</td>
<td></td>
</tr>
<tr>
<td>Lost residual value</td>
<td>(3,500)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>125,500</td>
<td>(39,499)</td>
<td>(44,503)</td>
<td>(31,165)</td>
<td>(6,835)</td>
</tr>
</tbody>
</table>

$^a$ Lease payment multiplied by the marginal tax rate.

$^b$ Depreciation for year multiplied by marginal tax rate.
c. Adjusted discount rate = \((1 - 0.30) \times (0.12) = 0.084 = 8.4\%\).

d. Value of the lease:

<table>
<thead>
<tr>
<th>End of Year</th>
<th>Net Cash Flow from Lease</th>
<th>Present Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$125,500</td>
<td>$125,500</td>
</tr>
<tr>
<td>1</td>
<td>$-39,499</td>
<td>$36,438</td>
</tr>
<tr>
<td>2</td>
<td>$-44,503</td>
<td>$37,873</td>
</tr>
<tr>
<td>3</td>
<td>$-31,165</td>
<td>$24,467</td>
</tr>
<tr>
<td>4</td>
<td>$-6,835</td>
<td>$4,950</td>
</tr>
</tbody>
</table>

Net present value of leasing cash flows $21,272

e. Loan amortization:

<table>
<thead>
<tr>
<th>Year</th>
<th>Loan Balance at Beginning of Year</th>
<th>Loan Payment</th>
<th>Interest (Beginning Loan Balance (\times 12%))</th>
<th>Reduction in Loan Principal</th>
<th>Loan Balance End of Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$150,000</td>
<td>$49,385</td>
<td>$18,000</td>
<td>$31,385</td>
<td>$118,615</td>
</tr>
<tr>
<td>1</td>
<td>118,615</td>
<td>$49,385</td>
<td>$14,234</td>
<td>$35,131</td>
<td>83,484</td>
</tr>
<tr>
<td>2</td>
<td>83,484</td>
<td>$49,385</td>
<td>$10,018</td>
<td>$39,367</td>
<td>44,117</td>
</tr>
<tr>
<td>3</td>
<td>44,117</td>
<td>$49,385</td>
<td>$5,294</td>
<td>$44,091\textsuperscript{a}</td>
<td>100\textsuperscript{a}</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Differences due to rounding, if three decimal places are maintained, the loan balance goes to zero.
FILL IN THE BLANKS

Answers

1. Structured, value; securitization, balance; vehicle, SPV, asset, securities

2. corporations, flow, corporations; project, SPV

3. lender, flows, repayment, paid, worst; guarantees

4. moving, sponsor; sponsors; construction, construction, operation, operating, profit; processing, distribution

5. loans, sponsor, credit, balance; third; independently

6. lenders, operation, time, produce, amounts, plan; startup

7. return, invested, leveraging, commercial; parties, debt, direct, indirect

8. Tax, depreciation, interest, depletion, research, dividends, foreign, capital, debt; benefits

9. new, taxes, transferred, use; 80%, consolidation, foreign, 50%
**SHORT ANSWER QUESTIONS**

**Answers**

1. Project financing is attractive when the balance sheet remains unaffected and does not influence the credit rating of the sponsoring party. Project financing allows for highly leveraged projects to take place when they wouldn’t otherwise.

2. There are varying credit exposures that arise throughout a project financing in the engineering and construction phase, startup phase, and operations phase.

   A variety of guarantees and business partners can be utilized though the life of the project financing in order to maintain the appropriate credit support.

3. Risks must be identified, evaluated, examined, and evaded during the project in order to avoid project failures. Some common causes for project failures include the following:
   - Delay in completion
   - Cost overrun
   - Technical failure
   - Financial failure
   - Uninsured losses
   - Increased price or material shortages
   - Technical obsolescence
   - Loss of competitive edge
   - Poor management
   - Actual value of security is too low

4. Nonrecourse borrowing by third parties is structured in ways so that the third party’s (or sponsor’s) credit standing and balance sheet are relatively unaffected. This is often done by using a third party’s credit rating or using multiple parties’ credit ratings. When multiple backers for a project all have good credit ratings, this secures the lender’s confidence that the project is viable and the risk for default is minimized. For the backers, the project risk is likewise minimized by sharing.
5. Benefits and incentives for project financings are:

- Availability of credit sources
- Availability of guarantees
- Better credit terms and interest costs
- Achieve higher leverage
- Meet legal requirements
- Regulatory problems avoided
- Segregated costs
- Financial statements unaffected until completion

Disincentives for project financing are:

- Complexity
- Complicated documentation
- Higher cost of borrowing funds
- Challenging negotiations with multiple parties
CHAPTER 29

Strategy and Financial Planning

FILL IN THE BLANKS

Answers

1. economic, forecasting, accounting; Economic, marketing, production, sales, costs; Accounting, summarize, project

2. comparative, producing, distributing; competitive; invest, more, return

3. strategy, maximizing; positive net present; objectives; strategic; financial, opportunities

4. Sales; Inaccurate, inventory, financing; misses, understating, overstating, problems

5. cash, economic, industry, market; uncertainty; sales, regression, market, opinions

6. familiarity, products, customers, competitors, future; expertise, evaluate; problems; persuade, allocate

7. Forecasting, short, long; people; optimistic, rosier, future; past, weight; responsible, rewarding, penalizing

8. budgeting, cash, income, balance; cash, most, income, balance; credit, coincide
9. pro forma, projected, future; income, income, revenues, expenses; investment, financing

10. analysis, cash; pro forma, asset, liability, equity; percent-of-sales, sales, income, sales, balance

**SHORT ANSWER QUESTIONS**

**Answers**

1. Financial planning is the allotment of resources to meet investment goals. Financial planning is important as it gives insight into the manager’s decisions as to their perception of market conditions and how the dynamic market conditions will affect the investing and financing decisions of the company.

2. The firm’s investment plans and financing plans mentioned in short answer question 1 are the firm’s budgeting process. Operational budgeting refers to short-term budgeting and long-run planning is long-term budgeting.

   Budgeting determines feasible investments based on the current ability to finance them. Budgets gauge current and past performance of departments, divisions, or individual managers.

3. Regression is a mathematical model fitting technique that fits a line graphically expressing the relationship between two units. Regression is used to forecast based on historical data. Forecasting errors are the difference between the forecasted value and the actual value.

4. Analysis of cash flows allows the tracking of cash inflows and outflows as a result of operating, investing, and financing activities. Cash inflows should be greater than cash outflows. A cash budget, which is a detailed statement of the cash flows expected in future periods, can help identify financing and investment needs.

5. There are many analyses and forecasting techniques for cash flows. Each one is subject to its own prescribed assumptions concerning a variety of factors such as the economic conditions, market conditions, and other factors affecting cash flows. Two methods mentioned in the text that help gauge uncertainty of cash flows are sensitivity analysis
and simulation analysis. Sensitivity analysis is the changing of one variable at a time and examining its effect on all the other components. When more than one variable is changed at a time, this involves simulation analysis.

**PROBLEMS**

**Answers**

1. DoReMi Company:

   Without adjustment:

   \[
   \text{Current ratio} = \frac{500 + 300 + 300}{525} = 2.10
   \]

   \[
   \text{Debt-to-equity ratio} = \frac{525 + 575}{525} = 2.75
   \]

   With adjustments:

   The cash account and, in turn, accounts payable, are the easiest and quickest to adjust. The other accounts can be altered accordingly and this should be taken into consideration for the long-term plan of the company. However in the interim, for the pro forma balance sheet for next month, the cash account can be easily reduced to adjust the current ratio, by the following amount:

   \[
   \text{With adjustment, current ratio} = \frac{500 - x + 300 + 300}{525 - x}
   \]

   \[
   = \frac{1,100 - x}{525 - x} = 4.0
   \]

   Using algebra to solve for \(x\), \(X = 333\). If DoReMi reduces cash by \$333\ (paying off \$333\ of short-term liabilities), the current ratio requirement is satisfied.
With adjustment to the cash account, the debt-to-equity ratio falls in line below 2 to 1.92.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and Equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>Accounts payable</td>
</tr>
<tr>
<td>$167</td>
<td>$192</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>Long-term debt</td>
</tr>
<tr>
<td>300</td>
<td>575</td>
</tr>
<tr>
<td>Inventory</td>
<td>Common equity</td>
</tr>
<tr>
<td>300</td>
<td>400</td>
</tr>
<tr>
<td>Plant and equipment</td>
<td>Total liabilities and equity</td>
</tr>
<tr>
<td>400</td>
<td>$1,167</td>
</tr>
<tr>
<td>Total assets</td>
<td></td>
</tr>
<tr>
<td>$1,167</td>
<td></td>
</tr>
</tbody>
</table>

The cash balance may be less than what is needed for transaction purposes, thus introducing the risk of not having sufficient cash on hand.

Other means of reducing the current ratio are to (1) reduce accounts receivable (by not extending as much credit or being more aggressive in collections), which risks hurting future sales; or (2) reduce levels of inventory, which risks not having sufficient inventory to meet demand.

In addition, the firm can borrow using long-term debt (increasing its financial leverage) to add to its current accounts, increasing its current ratio. But this increases the financial risk of the firm and may increase the cost of debt and equity.

2.

<table>
<thead>
<tr>
<th>Month</th>
<th>Sales</th>
<th>Collection of Month’s Sales</th>
<th>Collection on Previous Month’s Sales</th>
<th>Collection on Sales from Two Months Previous</th>
<th>Total Collections from July–Sept. Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>$12,000</td>
<td>$2,400</td>
<td>from June</td>
<td>from May</td>
<td>$2,400</td>
</tr>
<tr>
<td>August</td>
<td>$20,000</td>
<td>$4,000</td>
<td>$6,720</td>
<td>from June</td>
<td>$8,720</td>
</tr>
<tr>
<td>September</td>
<td>$15,000</td>
<td>$3,000</td>
<td>$11,200</td>
<td>$2,800</td>
<td>$17,000</td>
</tr>
</tbody>
</table>

3. The predicted current, plant, and total assets are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Base Year</th>
<th>As a % of Base Year Sales</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>$200,000</td>
<td>20%</td>
<td>$280,000</td>
</tr>
<tr>
<td>Plant assets</td>
<td>500,000</td>
<td>50%</td>
<td>700,000</td>
</tr>
<tr>
<td>Total assets</td>
<td>$700,000</td>
<td>70%</td>
<td>$980,000</td>
</tr>
</tbody>
</table>