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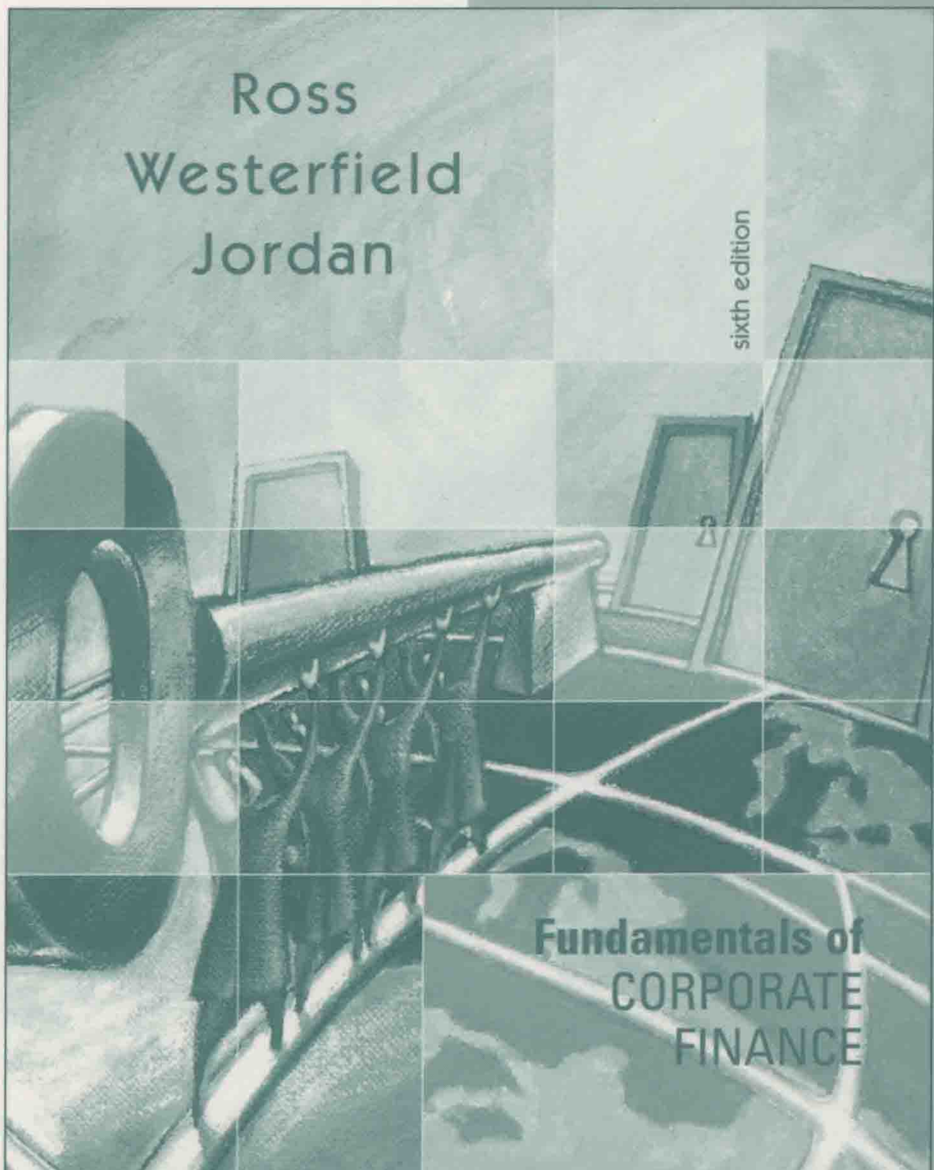

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Student Problem Manual

Fundamentals of Corporate Finance

Sixth Edition

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McGraw-Hill Higher Education

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FUNDAMENTALS OF CORPORATE FINANCE
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Published by McGraw-Hill/Irwin, an imprint of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, NY 10020.

2 3 4 5 6 7 8 9 0 QPD/QPD 0 9 8 7 6 5 4 3

ISBN 0-07-246976-5

www.mhhe.com

CONTENTS

CHAPTER 1

INTRODUCTION TO CORPORATE FINANCE

CONCEPTS FOR REVIEW

This chapter introduces several new concepts and terms that will be used throughout the text. Two ideas should be kept in mind while you are reading this chapter. First, although we provide a relatively narrow list of individuals we call **financial managers**, virtually *any* individual may, at some point, be charged with the responsibility for making financial decisions. Second, many of the principles and management techniques described in this text can be applied to decisions in other for-profit forms of organization, as well as not-for-profit organizations.

CHAPTER HIGHLIGHTS

Two major issues are addressed in this chapter: (1) What is corporate finance? and (2) What is the goal of the financial manager? The answers to these two questions require an understanding of the forms of business organization. We also explore the agency problem as it relates to financial decision-making and generates costs for securityholders.

I. CORPORATE FINANCE AND THE FINANCIAL MANAGER (p. 4)

What is Corporate Finance? (p. 4) The major decisions faced by financial managers are:

1. What long-term investments should be made?
2. What is the best way to raise funds in order to finance these investments?
3. How should the firm manage its short-term assets and liabilities?

The Financial Manager (p. 4) *Stockholders* of large corporations are generally not involved in day-to-day operations of the firm. *Managers* are employed to make decisions on behalf of the stockholders. Financial functions of the firm are generally shared by the *treasurer* and *controller*.

Financial Management Decisions (p. 4) The first decision is the *capital budgeting* decision, which encompasses planning and managing a firm's investments in long-term assets.

The second decision is the *capital structure* decision. Capital structure refers to the mix of long-term debt and equity utilized by the firm in order to finance its operations.

The third decision is the *working capital* decision. Since cash inflows and outflows do not generally coincide, cash flows must be managed by appropriate adjustments of current assets and current liabilities.

II. FORMS OF BUSINESS ORGANIZATION (p. 7)

A business may take one of many legal forms. These forms differ with respect to (1) the life of the business, (2) the ability of the business to obtain financing, and (3) the way in which the business is taxed.

<u>**Sole Proprietorship**</u> (p. 7) A *sole proprietorship* is owned by one person who keeps all the business' profits but has *unlimited liability* for its debts. The life span of the sole proprietorship is limited to that of the proprietor. The unlimited liability aspect makes capital harder to raise, and for tax purposes, no distinction is made between personal and business income.

<u>**Partnership**</u> (p. 7) A *partnership* has two or more owners, or partners. All partners in a *general partnership* share in gains or losses, and all have unlimited liability for debts incurred by the partnership. In a *limited partnership*, one or more general partners run the business, while one or more limited partners do not actively participate. The life of the business is limited to the partners' life spans - when a general partner dies, the partnership is terminated. The amount of equity financing available to the business is limited to the combined partners' personal wealth, and for tax purposes, no distinction is made between personal and business income.

<u>**Corporation**</u> (p. 8) A corporation is a distinct legal entity separate from its owners. The corporation can incur debts. The liability of the owners of the corporation for its debts is limited to the amount of money they have invested in the business. Formation of a corporation requires the preparation of *articles of incorporation* and *bylaws*. The shareholders of a corporation are its owners. Shareholders elect the *board of directors* who hire (and sometimes fire) the managers who operate the business for the shareholders.

The life of the corporation is not limited to the life of its owners. It is generally easier to raise capital because of the limited liability of the owners; however, earnings are subject to *double taxation*.

<u>**A Corporation by Another Name**</u> (p. 9) The corporate form of organization pervades the industrialized world, although names differ across countries. Table 1.1 lists several international variants.

III. THE GOAL OF FINANCIAL MANAGEMENT (p. 11)

Several possible goals might be followed by financial managers - survival, profit maximization, sales maximization, etc. None of those encompass the effects of management decisions on both risk and return.

Since stockholders buy common stock to derive a financial benefit, the decisions of financial managers, which are in the best interests of stockholders, are those decisions that increase the value of the stock. So, **the goal of financial management is to maximize the current price of the existing stock.**

<u>**A More General Goal**</u> (p. 12) The stock of a corporation represents the *owners' equity* in the firm. Thus, we can generalize and say that, regardless of the organizational form, **the goal of the financial managers is to maximize the value of the owners' equity in the firm.**

IV. THE AGENCY PROBLEM AND CONTROL OF THE CORPORATION (p. 12)

Although we have stated that corporate financial managers should adopt the goal of share price maximization, they do not always do so. There are inherent conflicts between managers' goals and those of the owners; managers sometimes choose to pursue their own goals at the expense of the owners.

Agency Relationships (p. 13) The relationship between stockholders and management is an *agency relationship*. Instead of managing the firm themselves, principals (shareholders) hire agents (managers) to do so. An *agency problem* exists whenever management goals differ from shareholder goals.

Management Goals (p. 13) Shareholders can encourage managers to perform in a manner consistent with shareholder interests by creating appropriate management incentive contracts and by monitoring management activity. The costs associated with reducing or eliminating these conflicts of interest are *agency costs*. Since agency problems are often costly to resolve, it is unlikely that every action taken by the corporation will be strictly in the best interests of the owners.

Do Managers Act in the Stockholders' Interests? (p. 13) The extent to which management actions are consistent with stockholder goals depends largely on (1) how managers are compensated and (2) the control of the firm.

Managerial compensation is often related to one or more measures of firm performance. Additionally, promotions and future job opportunities are often related to the manager's success in achieving stockholder goals.

Control mechanisms exist that tend to ensure that management will act in the shareholders' interest. Shareholders elect corporate directors who hire (and fire) management. Shareholders who are dissatisfied with existing management can attempt to remove management by means of a *proxy fight*. Corporate takeovers have been shown to result in the ouster of ineffective managers and directors.

Stakeholders (p. 16) Several parties besides stockholders and bondholders have an interest (or "stake") in the performance of the firm. Suppliers, employees, and customers, to name a few, are potentially affected by managerial decisions.

V. FINANCIAL MARKETS AND THE CORPORATION (p. 17)

Debt and equity securities issued by firms are bought and sold in the financial markets. In this section, we discuss the different kinds of securities that are traded in the financial markets, the manner in which trading is conducted, and the buyers and sellers of different securities.

Cash Flows to and from the Firm (p. 17) The firm acquires funds by issuing securities and selling them to market participants (i.e., individuals and other businesses). In turn, the firm returns cash to investors by paying dividends and interest paid on the stocks and bonds it has issued, respectively. The flows of funds to and from the firm are illustrated in Figure 1.2.

Primary versus Secondary Markets (p. 18) The original sale (or issuance) of securities by a governmental body or a corporation is a *primary market* transaction. Any subsequent sale and purchase of a security (i.e., from one investor to another) is a *secondary market* transaction.

A secondary market, in turn, can be either a *dealer market* or an *auction market*. In a dealer market, securities are sold to, and purchased from, a dealer, who may hold an inventory of the particular security. In an auction market, transactions occur between those who wish to sell a security and those who wish to buy it. The New York Stock Exchange (NYSE, www.nyse.com) is an auction market, while Nasdaq (www.nasdaq.com) is a dealer market.

Finally, in order to be eligible for trading on an organized exchange (such as the NYSE), stocks must be *listed*, i.e., meet certain requirements imposed by the organized exchange.

KEY TERMS AND CONCEPTS

Agency problem – possibility of conflicts of interest between stockholders and management. (p. 13)
Auction market – market in which transactions occur between those who wish to sell a security and those who wish to buy it. (p. 17)
Capital budgeting - process of planning and managing a firm's long-term investments. (p. 5)
Capital structure - the mixture of debt and equity maintained by the firm. (p. 6)
Corporation - distinct legal entity composed of one or more individuals or entities. (p. 8)
Dealer market – market in which securities are sold to, and purchased from, a dealer. (p. 17)
Partnership - a business formed by two or more individuals or entities. (p. 7)
Sole proprietorship - a business owned by a single individual. (p. 7)
Stakeholder - someone other than stockholder or creditor who has a claim on the firm. (p. 16)
Working capital - a firm's short-term assets and liabilities. (p. 6)

CONCEPT TEST

1. Corporate finance is the study of ways to answer three major questions: What fixed assets should the firm buy? What is the best way to raise cash to finance the purchase of fixed assets? How should the firm manage its short-term assets and liabilities? These subjects are referred to as _______________ , _______________ , and _______________ decisions. (p. 4)

2. The _______________ (i.e., owners) of large corporations are generally not involved in the day-to-day operations of the firm. _______________ make decisions on their behalf. (p. 4)

3. Officially, financial functions of the firm are shared by the _______________ and the _______________ . (p. 5)

4. The three legal forms of business organization are the _______________ , the _______________ , and the _______________ . The forms of organization are distinguished by differences in _______________ , _______________ , and _______________ . (p. 7)

5. In a _______________ partnership, all partners have unlimited liability for the firm's debts. A _______________ partnership has two kinds of partners: _______________ partners, who have unlimited liability, and _______________ partners who have limited liability. (p. 7)

6. The rules and procedures by which a corporation governs itself are contained in the corporate _______________ . All corporations must prepare a document called the _______________ describing the number of shares to be issued, the business purpose, and other details. (p. 8)

7. The goal of financial management is to maximize _______________ . (p. 10)

8. If management goals conflict with shareholder goals, a(n) _______________ problem exists. _______________ are costs of aligning goals. (p. 13)

9. The original sale (or issuance) of securities by a governmental body or a corporation is a ________________ transaction. Subsequent sales and purchases (i.e., from one investor to another) are ______________ transactions. (p. 17)

ANSWERS TO CONCEPT TEST

1. capital budgeting, capital structure, working capital
2. stockholders; Managers
3. treasurer, controller
4. sole proprietorship, partnership, corporation; life, ability to obtain financing, taxation
5. general; limited, general, limited
6. bylaws; articles of incorporation
7. the current value per share of the existing stock
8. agency; Agency costs
9. primary market; secondary market

CHAPTER 2

FINANCIAL STATEMENTS, TAXES, AND CASH FLOW

CONCEPTS FOR REVIEW

In the previous chapter we determined that the overriding goal in financial decision-making is the maximization of shareholder wealth. Now we introduce several determinants of share price and, by implication, shareholder wealth. Financial statements measure firm performance, which is ultimately reflected in the price of the firm's common stock. Crucial to the analysis of the firm's financial statements and to the evaluation of firm performance is the concept of liquidity, the effect of taxes, and the measurement of cash flow. Pay special attention to the latter, as it will turn out to be a crucial determinant of value in many financial decisions.

CHAPTER HIGHLIGHTS

This chapter delves more deeply into two topics introduced in Chapter 1: financial statements and cash flow concepts. We also discuss some important tax considerations. You should understand that financial statements are a key source of information for financial decisions; thus, the chapter emphasizes the **use**, rather than the **preparation** of financial statements. Throughout this chapter, two important distinctions must be kept in mind: (1) the difference between accounting value and market value; and (2) the difference between accounting income and cash flow. These concepts are essential to an understanding of corporate finance.

I. THE BALANCE SHEET (p. 23)

Assets: The Left-Hand Side (p. 23) The balance sheet is a snapshot of a firm's accounting value as of a particular date. **Assets** are listed on the left-hand side, and include both *tangible* assets such as buildings and equipment, and *intangible* assets, such as trademarks.

Liabilities and Owners' Equity: The Right-Hand Side (p. 24) Liabilities are debts owed by the firm, and are classified as *current* (if the maturity is less than one year) or as *long-term* (if the maturity is greater than one year). *Owners' equity* is the difference between assets and liabilities. The *balance sheet equation* is:

Assets = Liabilities + Shareholders' Equity.

Net Working Capital (p. 25) Net working capital is the difference between a firm's current assets and its current liabilities. Net working capital can be positive or negative, but it is usually positive in a healthy firm, since it indicates that more cash will be available than will be paid out over the next 12 months.

Liquidity (p. 25) The financial manager must be especially aware of the following three aspects of the balance sheet: **liquidity**, **debt versus equity**, and **market value versus book value**. Each of these concepts is related to one of the three basic issues of corporate finance introduced in Chapter 1.

The **liquidity** of an asset is measured by the speed with which it can be converted to cash without a significant loss in value. Liquidity is valuable because it increases the firm's ability to meet short-term obligations. However, there is a tradeoff between liquidity and foregone potential returns.

Debt versus Equity (p. 26) Liabilities represent obligations to repay principal and interest to creditors at a specified time. In contrast, equity holders are entitled only to *residual* cash flows and assets; that is, the cash flows which remain after creditors' claims are satisfied.

Market Value versus Book Value (p. 27) The balance sheet values of a firm's assets (**book values**), generally do not indicate the assets' current worth, or **market values**. Market value is the relevant value for financial decisions, because it is the market value of the firm that is reflected in share prices.

II. THE INCOME STATEMENT (p. 28)

A firm's income statement measures the firm's performance over a specified period of time. The income statement equation is:

Revenues - Expenses = Income

Net income (i.e., 'the bottom line') equals revenue less all expenses and taxes. Net income divided by the number of shares of stock outstanding is referred to as **earnings per share (EPS)**.

GAAP and the Income Statement (p. 29) Generally Accepted Accounting Principles (GAAP) require that revenue be recorded on the income statement when it is earned, or **accrued**, even if the actual cash inflow from payment has not occurred. Costs, as indicated on the income statement, are determined according to the *matching principle*; that is, costs are matched with the revenues they produce. Thus, revenues and costs recorded for a period may not reflect actual cash flows during that period.

Noncash Items (p. 30) The existence of noncash items such as depreciation cause accounting income and cash flow to differ. For example, depreciation expense causes reported net income to be lower, yet no cash actually left the firm as a result of the depreciation expense.

Time and Costs (p. 30) It is often useful to distinguish between costs that can be easily changed in the short run ("variable" costs) and those that cannot ("fixed" costs). The income statement does not distinguish between fixed and variable costs. (Note: in the long run, almost all costs are variable.)

III. TAXES (p. 32)

Corporate Tax Rates (p. 32) Table 2.3 in the text indicates current corporate tax rates.

Average versus Marginal Tax Rates (p. 32) The *average tax rate* equals total taxes paid divided by total taxable income. A *marginal tax rate* is the tax rate that would be owed if one more dollar were earned.

Financial decisions generally involve changes in cash flows from existing levels. Therefore, the marginal tax rate is generally the relevant rate for financial decision-making.

IV. CASH FLOW (p. 34)

The balance sheet equation indicates that the value of a firm's assets is equal to the value of its liabilities plus the value of its equity. Similarly, firm cash flow generated by the use of its assets must be equal to the sum of the cash flow paid to its creditors and the cash flow paid to its stockholders.

Cash Flow from Assets (p. 35) Cash flow from assets has three components: **operating cash flow**, **capital spending,** and **additions to net working capital**.

Operating cash flow (OCF) is the cash flow resulting from a firm's day-to-day operations and is equal to revenues minus costs, excluding depreciation and interest.

Capital spending is the net amount spent on fixed assets, or the difference between sales of fixed assets and the acquisition of fixed assets.

A firm invests in current assets as well as fixed assets. Since net working capital is the difference between the level of current assets and the level of current liabilities, the *change in net working capital* is the change in the level of current assets minus the change in the level of current liabilities.

The total *cash flow from the firm's assets* equals operating cash flow, less net capital spending, less the additions to net working capital.

Cash Flow to Creditors and Stockholders (p. 37) Funds not used for expenses and taxes or reinvested in the firm are distributed to the suppliers of capital - the creditors and the stockholders.

Cash flow to creditors (or bondholders) is interest paid minus net new borrowing.

Cash flow to stockholders equals dividends paid less net new equity raised.

An Example: Cash Flows for Dole Cola (p. 39) The text includes an extended example illustrating the calculation of firm cash flows.

KEY TERMS AND CONCEPTS

Average tax rate - total taxes paid divided by total taxable income. (p. 32)
Balance sheet - financial statement showing a firm's accounting value on a particular date. (p. 23)
Cash flow from assets - the total cash flow to creditors and cash flow to stockholders, consisting of the following: operating cash flow, capital spending, and additions to net working capital. (p. 35)
Cash flow to creditors - interest paid plus repayments of long-term debt, minus new long-term borrowing. (p. 34)
Cash flow to stockholders - dividends paid plus the dollar value of stock repurchased by the firm, minus the proceeds from the sale of new equity. (p. 34)
Free cash flow (p. 37) Another name for Cash Flow from Assets.
Generally accepted accounting principles (GAAP) - the common set of standards and procedures by which audited financial statements are prepared. (p. 27)
Income statement - financial statement summarizing firm performance over a period of time. (p. 28)
Marginal tax rate - amount of tax payable on the next dollar earned. (p. 32)
Net capital Spending - ending fixed assets minus beginning fixed assets, plus depreciation (p. 33)
Net working capital - current assets less current liabilities. (p. 25)
Noncash items - expenses charged against revenues that do not directly affect cash flow. (p. 30)
Operating cash flow - cash generated from a firm's normal business activities. (p. 35)

CONCEPT TEST

1. A ____________ can be thought of as a snapshot of firm accounting value at a particular date. The value of a firm's assets equals ____________ + ____________. Alternatively, shareholders' equity = assets - __________. (p. 23, 24)

2. The difference between current assets and current liabilities is called ____________, and can be positive or negative. (p. 25)

3. An asset that can be converted to cash quickly and without loss in value is ____________. Assets are listed on the balance sheet in order of decreasing ____________. Liquid assets generally earn ____________ rates of return than fixed assets. (p. 25)

4. ____________ are debts, so the firm is obligated to pay creditors principal and interest. Equity holders are entitled only to ____________ cash flows and assets. The use of debt financing is referred to as ____________. (p. 26)

5. Fixed asset values on the balance sheet are not current market values. Instead, they are shown at __________. The difference between market value and ____________ value is generally small for current assets, but can be large for ____________ assets. (p. 27)

6. The income statement equation is ____________-____________=____________. Net income divided by the number of shares outstanding is called ____________. (p. 28)

7. For accounting purposes, revenue is shown on the income statement when it ____________, not when payment is received. For financial decision-making purposes, accounting income must be distinguished from ____________. (p. 29)

8. One of the reasons net income is not the same as cash flow from operations is that some deductions are ____________ deductions; the most common of these is ____________. In the short run, rent is an example of a ____________ cost. (p. 30)

9. A(n) ____________ tax rate equals total taxes paid divided by total taxable income, while a(n) __________ tax rate is the rate applied to the last dollar earned. (p. 32)

10. Operating cash flow equals ____________+____________-____________. Cash flow from assets equals ____________+____________. Cash flow to creditors (debtholders) is ____________+ __________-____________. Cash flow to stockholders is ______________+____________- __________ . (pp. 34-39)

ANSWERS TO CONCEPT TEST

1. balance sheet; liabilities, shareholders' equity; liabilities
2. net working capital
3. liquid; liquidity; lower
4. Liabilities; residual; financial leverage

5. book value or historical cost; book; fixed
6. revenues, expenses, income; earnings per share (EPS)
7. accrues; cash flow
8. noncash; depreciation; fixed
9. average; marginal;
10. earnings before interest and taxes, depreciation, taxes; cash flow to creditors, cash flow to stockholders; interest, repayments of long-term debt, proceeds from new long-term debt; dividends, stock repurchased, stock issued

PROBLEMS

1. During the year 2002, the Terri-Yung Company had sales of $1,000, cost of goods sold of $400, depreciation of $100, and interest paid of $150. If the tax rate is 34% what is net income?

2. Refer to Problem 1 above. Assume the Terri-Yung Company has 100 shares of common stock outstanding at the end of 2002. Total dividends paid were $120. Compute earnings per share (EPS) and dividends per share (DPS).

3. At year-end 2001 Terri-Yung had notes payable of $1,200, accounts payable of $2,400, and long-term debt of $3,000. Corresponding entries for 2002: $1,600, $2,000, and $2,800. Assets for 2001 and 2002 are shown below. Prepare the company's balance sheets for the end of 2001 and 2002, respectively.

Current Assets	2001	2002
Cash	$ 800	$ 500
Marketable Securities	400	300
Accounts Receivable	900	800
Inventory	1,800	2,000
Fixed Assets		
Net Plant and Equipment	$6,000	$8,000

4. Based on the information in Problem 1, what is Terri-Yung's operating cash flow for 2002?

5. During the year 2002 Terri-Yung sold \$300 of fixed assets and \$2,400 worth of stock, and used the entire proceeds to buy fixed assets. Compute net capital spending.

6. Based on the balance sheets for Terri-Yung, what was net working capital for 2001? For 2002? What must additions to net working capital have been?

7. What was Terri-Yung's total cash flow to the firm in 2002?

8. What was Terri-Yung's cash flow to long-term creditors in 2002?

9. What was Terri-Yung's cash flow to shareholders in 2002?

10. The K&M Corporation had taxable income of $200,000. What is the total tax bill for K&M? What is K&M's average tax rate? What is the marginal tax rate?

11. Suppose that K&M had taxable income of $1,000,000. What are the total taxes paid, the average tax rate and the marginal tax rate?

CHAPTER 3

WORKING WITH FINANCIAL STATEMENTS

CONCEPTS FOR REVIEW

Because stockholders and bondholders base their buying and selling decisions on information about the firm, the role of information is crucial in determining firm value. Information is available from many sources, not the least of which are the firm's financial statements. To analyze financial statements in a systematic manner, we measure five "dimensions" of firm performance: liquidity, long-term solvency, asset management, profitability, and measures based on market values. Each captures a different aspect of managerial performance, and each will be of greater or lesser importance to the analyst, depending on his or her purposes.

CHAPTER HIGHLIGHTS

In this chapter we examine more closely the financial statements discussed in Chapter 2. It is important to remember that, under ideal circumstances, financial decisions are based on market value information rather than accounting data; however, in many situations, accounting statements provide the best information available.

I. CASH FLOW AND FINANCIAL STATEMENTS: A CLOSER LOOK (p. 54)

From Chapter 2: *Cash flow from assets = Cash flow to creditors + Cash flow to owners.*
In this section, we analyze more closely the cash flow impacts of firm transactions.

<u>**Sources and Uses of Cash**</u> (p. 54) Transactions which create cash inflows for the firm are referred to as **sources of cash**, and transactions which create cash outflows are **uses of cash**. Transactions which increase (decrease) asset accounts represent uses (sources) of cash, while transactions which increase (decrease) liability accounts or equity account represent sources (uses) of cash.

<u>**The Statement of Cash Flows**</u> (p. 56) In order to summarize the transactions that affect the firm's sources and uses of cash over a given period, we construct a **statement of cash flows.** This statement organizes the sources and uses of cash into three categories: operating activities, investing activities, and financing activities.

Learning Tip: *An easy way to remember sources and uses is to keep in mind that there are five of each, and that, for the first four items in the list below, the use is just the opposite of the source.*

Sources	*Uses*
Net income	*Net loss*
Decrease in assets	*Increase in assets*
Increase in liabilities	*Decrease in liabilities*
Increase in common stock	*Decrease in common stock*
Depreciation	*Payment of Dividends*

Notice that both net income and depreciation are shown on the statement of cash flows for the firm. The latter is included as a source because it is deducted as an expense in computing taxable income and reduces the firm's tax liability.