3.2 ARTICULATION OF THE STATEMENT OF CASH FLOWS WITH OTHER FINANCIAL STATEMENTS. Describe how the statement of cash flows is linked to each of the other financial statements (income statement and balance sheet). Also review how the other financial statements are linked with each other.

3.3 CLASSIFICATION OF INTEREST EXPENSE. Under U.S. GAAP, the statement of cash flows classifies cash expenditures for interest expense as an operating activity but classifies cash expenditures to redeem debt as a financing activity. Explain this apparent paradox.

3.4 CLASSIFICATION OF CASH FLOWS RELATED TO THE COST OF FINANCING. Under U.S. GAAP, the statement of cash flows classifies cash expenditures for interest expense on debt as an operating activity but classifies cash expenditures for dividends to shareholders as a financing activity. Explain this apparent paradox.

3.5 CLASSIFICATION OF CHANGES IN SHORT-TERM FINANCING. The statement of cash flows classifies changes in accounts payable as an operating activity but classifies changes in short-term borrowing as a financing activity. Explain this apparent paradox.

3.6 TREATMENT OF NON-CASH EXCHANGES. The acquisition of equipment by assuming a mortgage is a transaction that firms cannot report in their statement of cash flows but must report in a supplemental schedule or note. Of what value is information about this type of transaction? What is the reason for its exclusion from the statement of cash flows?

3.7 COMPUTING CASH COLLECTIONS FROM CUSTOMERS. Caterpillar manufactures heavy machinery and equipment and provides financing for purchases by its customers. Caterpillar reported sales and interest revenues of $51,324 million for 2008. The balance sheet showed current and noncurrent receivables of $15,752 million at the beginning of 2008 and $18,448 million at the end of 2008. Compute the amount of cash collected from customers during 2008.

3.8 COMPUTING CASH PAYMENTS TO SUPPLIERS. Lowe's Companies, a retailer of home improvement products, reported cost of goods sold of $31,729 million for the fiscal year ended January 30, 2009. It reported merchandise inventories of $7,611 million at the beginning of fiscal 2009 and $8,209 million at the end of fiscal 2009. It reported accounts payable to suppliers of $3,713 million at the beginning of fiscal 2009 and $4,109 million at the end of fiscal 2009. Compute the amount of cash paid to merchandise suppliers during fiscal 2009.

3.9 COMPUTING CASH PAYMENTS FOR INCOME TAXES. Visa Inc., the credit card company, reported income tax expense of $1,648 million for 2008, comprising $1,346 million of current taxes and $302 million of deferred taxes. The balance sheet showed income taxes payable of $122 million at the beginning of 2008 and $327 million at the end of 2008. Compute the amount of income taxes paid in cash during 2008.

3.10 INTERPRETING RELATIONS BETWEEN NET INCOME AND CASH FLOW FROM OPERATIONS. Combined data for three years for two firms appear below (in millions).

	Firm A	Firm B
Net income	$2,381	$2,825
Cash flow from operations	$1,133	$7,728

One of these firms is Amazon.com, a rapidly growing internet retailer, and the other is Kroger, a retail grocery store chain growing at approximately the same rate as the population. Identify each firm and explain your reasoning.

3.11 INTERPRETING RELATIONS BETWEEN NET INCOME AND CASH FLOW FROM OPERATIONS. Three years of combined data for two firms appear below (in millions).

	Firm A	Firm B
Net income	$ 996	$2,846
Cash flow from operations	$3,013	$3,401

The two firms experienced similar growth rates in revenues during the three-year period. One of these firms is Accenture Ltd., a management consulting firm, and the other is Southwest Airlines, a provider of airline transportation services. Identify each firm and explain your reasoning.

3.12 INTERPRETING RELATIONS BETWEEN CASH FLOWS FROM OPERATING, INVESTING, AND FINANCING ACTIVITIES. Three years of combined data for two firms appear below (in millions).

	Firm A	Firm B
Net income	$ 2,378	$ 2,399
Cash flow from operations	$ 7,199	$ 3,400
Cash flow from investing	$(6,764)	$ (678)
Cash flow from financing	$ 570	$(2,600)

One of these firms is FedEx, a relatively high-growth firm that provides courier services, and the other is Kellogg Company, a more mature consumer foods processor. Identify each firm and explain your reasoning.

3.13 INTERPRETING RELATIONS BETWEEN CASH FLOWS FROM OPERATING, INVESTING, AND FINANCING ACTIVITIES. Three years of combined data for two firms appear below (in millions).

	Firm A	Firm B
Cash flow from operations	$ 2,639	$ 2,759
Cash flow from investing	$(3,491)	$(1,281)
Cash flow from financing	$ 1,657	$(1,654)

One of these firms is eBay, an online retailer with a three-year growth in sales of 337.3 percent, and the other is TJX Companies, Inc., a specialty retail store with a three-year growth in sales of 39.3 percent. Identify each firm and explain your reasoning.

3.14 RELATION BETWEEN NET INCOME, EBITDA, AND CASH FLOW FROM OPERATIONS. Selected data for The Walt Disney Company appear below (in millions).

	Year 4	Year 3	Year 2	Year 1
Net income	$2,345	$1,267	$1,236	$1,169
Conversion of net income to cash flow from operations:				
Non-working capital adjustments	2,076	1,370	1,077	2,124
Working capital adjustments	(51)	264	(27)	(245)
Cash flow from operations	$4,370	$2,901	$2,286	$3,048
EBITDA	$5,554	$4,106	$3,919	$3,759
Growth rate in revenues	13.6%	6.8%	0.6%	(0.6%)

Examine the differences between net income, cash flow from operations, and EBITDA for The Walt Disney Company. Comment on the relations among these series over time. Why does cash flow from operations exceed net income? What adjustments contribute to this pattern? Is this typical or unusual? Why is EBITDA so much higher than both net income and cash flow from operations?

Problems and Cases

3.15 INTERPRETING THE STATEMENT OF CASH FLOWS. The Coca-Cola Company (Coca-Cola), like PepsiCo, manufactures and markets a variety of beverages. Exhibit 3.22 presents a statement of cash flows for Coca-Cola for 2006 to 2008.

Required

Discuss the relationship between net income and cash flow from operations and between cash flows from operating, investing, and financing activities for the firm over the three-year period. Identify characteristics of Coca-Cola's cash flows that you would expect for a mature company.

3.16 INTERPRETING THE STATEMENT OF CASH FLOWS. Texas Instruments primarily develops and manufactures semiconductors for use in technology-based products for various industries. The manufacturing process is capital-intensive and subject to cyclical swings in the economy. Because of overcapacity in the industry and a cutback on spending for technology products due to a recession, semiconductor prices collapsed in Year 1 and commenced a steady comeback between Year 2 and Year 4. Exhibit 3.23 presents a statement of cash flows for Texas Instruments for Year 0 to Year 4.

Required

Discuss the relationship between net income and cash flows from operations and between cash flows from operating, investing, and financing activities for the firm over the five-year period.

3.17 INTERPRETING THE STATEMENT OF CASH FLOWS. Gap Inc. operates chains of retail clothing stores under the names of Gap, Banana Republic, and Old Navy. Exhibit 3.24 presents the statement of cash flows for Gap for Year 0 to Year 4.

EXHIBIT 3.24

Gap
Statement of Cash Flows
(amounts in millions)
(Problem 3.17)

	Year 4	Year 3	Year 2	Year 1	Year 0
OPERATIONS					
Net income (loss)	$ 1,150	$ 1,031	$ 478	$ (8)	$ 877
Depreciation	620	675	706	811	590
Other additions and subtractions	(28)	180	166	30	92
(Increase) Decrease in inventories	(90)	385	(258)	213	(455)
(Increase) Decrease in prepayments	(18)	5	33	(13)	(61)
Increase (Decrease) in accounts payable	42	(10)	(47)	42	250
Increase (Decrease) in other current liabilities	(56)	(106)	165	243	(3)
Cash Flow from Operations	$ 1,620	$ 2,160	$1,243	$1,318	$ 1,290
INVESTING					
Fixed assets acquired	$ (442)	$ (261)	$ (308)	$ (940)	$(1,859)
Changes in marketable securities	259	(2,063)	(313)	—	—
Other investing transactions	343	6	(8)	(11)	(16)
Cash Flow from Investing	$ 160	$(2,318)	$ (629)	$ (951)	$(1,875)
FINANCING					
Increase in short-term borrowing	$ —	$ —	$ —	$ —	$ 621
Increase in long-term borrowing	—	85	1,346	1,194	250
Issue of capital stock	130	26	153	139	152
Decrease in short-term borrowing	—	0	(42)	(735)	—
Decrease in long-term borrowing	(871)	(668)	—	(250)	—
Acquisition of capital stock	(976)	—	—	(1)	(393)
Dividends	(79)	(79)	(78)	(76)	(75)
Other financing transactions	—	28	27	(11)	(11)
Cash Flow from Financing	$(1,796)	$ (608)	$1,406	$ 260	$ 544
Change in Cash	$ (16)	$ (766)	$2,020	$ 627	$ (41)
Cash—Beginning of year	2,261	3,027	1,007	380	421
Cash—End of Year	$ 2,245	$ 2,261	$3,0.27	$1,007	$ 380
Change in sales from previous year	+2.6%	+9.7%	+4.4%	+1.3%	+17.5%

Required

Discuss the relationship between net income and cash flow from operations and between cash flows from operating, investing, and financing activities for the firm over the five-year period.

3.18 INTERPRETING THE STATEMENT OF CASH FLOWS. Sirius XM Radio Inc. is a satellite radio company, formed from the merger of Sirius and XM in 2008. Exhibit 3.25 presents a statement of cash flows for Sirius XM Radio for 2006, 2007, and 2008. Sirius XM and its predecessor, Sirius, realized revenue growth of 49 percent in 2007 and 81 percent in 2008. The merger was a stock-for-stock merger.

Required

Discuss the relation between net loss and cash flow from operations and the pattern of cash flows from operating, investing, and financing activities during the three years.

EXHIBIT 3.25

Sirius XM Radio Inc.
Statement of Cash Flows
(amounts in thousands)
(Problem 3.18)

	2008	2007	2006
CASH FLOWS FROM OPERATING ACTIVITIES			
Net loss	$(5,313,288)	$(565,252)	$(1,104,867)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	203,752	106,780	105,749
Impairment loss	4,766,190	—	10,917
Non-cash interest expense, net of amortization of premium	(6,311)	4,269	3,107
Provision for doubtful accounts	21,589	9,002	9,370
Non-cash loss from redemption of debt	98,203	—	—
Loss on disposal of assets	4,879	(428)	1,661
Loss on investments, net	28,999	—	4,445
Share-based payment expense	87,405	78,900	437,918
Deferred income taxes	2,476	2,435	2,065
Other non-cash purchase price adjustments	(67,843)	—	—
Changes in operating assets and liabilities, net of assets and liabilities acquired:			
Accounts receivable	(32,121)	(28,881)	(1,871)
Inventory	8,291	4,965	(20,246)
Prepaid expenses and other current assets	(19,953)	11,118	(42,132)
Other long-term assets	(13,338)	(729)	(39,878)
Accounts payable and accrued expenses	(65,481)	66,169	26,366
Accrued interest	23,081	(8,920)	1,239
Deferred revenue	55,778	169,905	181,003
Other long-term liabilities	64,895	1,901	3,452
Net Cash Used in Operating Activities	$ (152,797)	$(148,766)	$ (421,702)

(*Continued*)

8.2 REVENUE RECOGNITION. Revenues are at the core of a firm's ability to grow and prosper; thus, they are central to the analysis of a firm's profitability. Although the time-of-sale method is the most common technique employed to recognize revenues, in some instances, a strong argument can be made for recognizing revenue before the product has been completed and delivered. Discuss circumstances in which this scenario is appropriate.

8.3 LONG-TERM CONTRACT PROFIT RECOGNITION. Three alternative revenue recognition methods are available to long-term contractors when cash inflows are probable: percentage of completion, completed contract, and cost recovery. Assuming that the contract price is known, discuss the appropriate method under U.S. GAAP and IFRS under two alternative scenarios: (a) the proportion of work performed and the proportion of work remaining until completion can be reliably determined and (b) no reliable basis exists for determining the total amount of work necessary to complete the project. (Note: Because percentage of completion is generally estimated by comparing the costs to date to expected total costs, the inability to estimate the total amount of work to be performed creates the inability to estimate percent complete reliably.)

8.4 WORKING CAPITAL. Identify the working capital accounts related to (a) revenues recognized and deferred, (b) cost of goods sold, (c) employee salary and wages, and (d) income tax expense. For each account, indicate whether an increase in the working capital asset or liability would be an addition or subtraction when reconciling from net income to cash flows from operations.

8.5 EXPENSE RECOGNITION. Provide three examples of expense recognition justified by (a) a direct relationship with revenue (cause and effect) and (b) an indirect relationship with revenue (the consumption of an asset or an increase in a liability during a period in which revenue is recognized).

8.6 ACCOUNTS RECEIVABLE. Using the following key, identify the effects of the following transactions or conditions on the various financial statement elements: I = increases; D = decreases; NE = no effect.

	Assets	Liabilities	Shareholders' Equity	Net Income
A credit sale				
Collection of a portion of accounts receivable				
Estimate of bad debts				
Write-off of a specific uncollectible account				

8.7 INVENTORY COSTING AND VALUATION. The acquisition cost of inventory remaining at the end of a period is measured using LIFO, FIFO, or average cost.

a. Rank cost of goods sold, gross profit, and ending inventory from highest to lowest under the three cost-flow assumptions when input prices are rising.
b. How should differences between acquisition cost and the market value of inventory be reported on the balance sheet under IFRS and U.S. GAAP?

8.8 LIFO LAYER LIQUIDATION. What is a LIFO layer liquidation? How does it affect the prediction of future earnings?

8.13 COMPONENTS OF PENSION EXPENSE. Pension expense typically consists of five components. Answer the following questions related to each component.

a. Service cost: Is it possible for the service cost component to *reduce* pension expense for the year? Explain your answer.
b. Interest cost: Is it possible for the interest cost component to *reduce* pension expense for the year? Explain your answer.
c. Expected return on plan assets: GAAP requires firms to reduce pension expense each year by the expected, not the actual, return on investments. What is the logic employed by policymakers in reaching this decision?
d. Amortization of prior service cost: What is a prior service cost? Provide an example of a plan change that would generate an amount labeled prior service cost.
e. Amortization of actuarial gains and losses: What circumstances give rise to actuarial gains and losses?

8.14 POSTRETIREMENT BENEFITS OTHER THAN PENSIONS. The notes to a firm's financial statements reveal that the obligations for postretirement health care benefits at the end of 2010 total $2.1 billion. The fair value of plan assets for these benefits at the end of 2010 is reported at zero, with an unrecognized net actuarial loss of $310 million reported for the same year. Calculate the amount of the postretirement health care benefit obligation reported by the firm at the end of 2010. Discuss what classification category (or categories) on the balance sheet would appropriately include the obligation.

Problems and Cases

8.15 INCOME RECOGNITION FOR VARIOUS TYPES OF BUSINESSES. Discuss when each of the following types of businesses is likely to recognize revenues and expenses.

a. A bank lends money for home mortgages.
b. A travel agency books hotels, transportation, and similar services for customers and earns a commission from the providers of these services.
c. A Major League Baseball team sells season tickets before the season begins and signs its players to multiyear contracts. These contracts typically defer the payment of a significant portion of the compensation provided by the contract until the player retires.
d. A producer of fine whiskey ages the whiskey 12 years before sale.
e. A timber-growing firm contracts to sell all timber in a particular tract when it reaches 20 years of age. Each year it harvests another tract. The price per board foot of timber equals the market price when the customer signs the purchase contract plus 10 percent for each year until harvest.
f. An airline provides transportation services to customers. Each flight grants frequent-flier miles to customers. Customers earn a free flight when they accumulate sufficient frequent-flier miles.

8.16 MEASURING INCOME FOR A SOFTWARE MANUFACTURER. Parametric Technology Corporation (PTC) is a software manufacturer. It develops, markets, and supports software that helps manufacturers improve the competitiveness of their products. PTC provides a detailed description of its revenue streams in a recent SEC filing, excerpts of which are provided in Exhibit 8.10.

and capital structure leverage components. Level 3 disaggregates the profit margin into various expense-to-sales percentages and disaggregates assets turnover into individual asset turnovers. Level 4 uses product and geographic segment data to study ROA, profit margin, and assets turnover more fully.

QUESTIONS, EXERCISES, PROBLEMS, AND CASES

Questions and Exercises

4.1 COMMON-SIZE ANALYSIS. Common-size analysis is a simple way to make financial statements of different firms comparable. What are possible shortcomings of comparing two different firms using common-size analysis?

4.2 EARNINGS PER SHARE. Firm A reports an increase in earnings per share; Firm B reports a decrease in earnings per share. Is this unconditionally informative about each firm's performance? If not, why is earnings per share so commonly discussed in the financial press?

4.3 PRO FORMA EARNINGS. Firms often provide supplemental disclosures that report and discuss income figures that do not necessarily equal bottom-line net income from the income statement. Discuss the merits and shortcomings of this managerial practice.

4.4 PROFIT MARGIN FOR ROA VERSUS ROCE. Describe the difference between the profit margin for ROA and the profit margin for ROCE. Explain why each profit margin is appropriate for measuring the rate of ROA and the rate of ROCE, respectively.

4.5 CONCEPT AND MEASUREMENT OF FINANCIAL LEVERAGE. Define financial leverage. Explain how financial leverage works to the benefit of the common shareholders.

4.6 ADVANTAGES OF FINANCIAL LEVERAGE. A company president remarked, "The operations of our company are such that we can take advantage of only a minor amount of financial leverage." Explain the likely reasoning the company president had in mind to support this statement.

4.7 DISADVANTAGES OF FINANCIAL LEVERAGE. The intuition behind the benefits of financial leverage is that a firm can borrow funds that bear a certain interest rate but invest those funds in assets that generate returns in excess of that rate. Why would firms with high ROAs not keep leveraging up their firm by borrowing and investing the funds in profitable assets?

4.8 CONCEPT OF RESIDUAL INCOME. Explain the intuition of residual income. Distinguish between net income available to the common shareholders and residual income.

4.9 RATE OF RETURN ON COMMON SHAREHOLDERS' EQUITY VERSUS BASIC EARNINGS PER COMMON SHARE. Analysts can compare ROCEs across companies but should not compare basic EPSs despite the fact that both ratios use net income to the common shareholders in the numerator. Explain.

Required

a. Calculate the inventory turnover ratio for each firm for 2007–2009.
b. Suggest reasons for the differences in the inventory turnover ratios of these two firms.
c. Suggest reasons for the changes in the inventory turnover ratios during the three-year period.

4.18 CALCULATING AND INTERPRETING ACCOUNTS RECEIVABLE AND INVENTORY TURNOVER RATIOS. Nucor and AK Steel are steel manufacturers. Nucor produces steel in mini-mills. Mini-mills transform scrap ferrous metals into standard sizes of rolled steel, which Nucor then sells to steel service centers and distributors. Its steel falls on the lower end in terms of quality (strength and durability). AK Steel is an integrated steel producer, transforming ferrous metals into rolled steel and then into various steel products for the automobile, appliance, construction, and other industries. Its steel falls on the higher end in terms of quality. Exhibit 4.24 sets forth various data for these two companies for 2007 and 2008.

Required

a. Calculate the accounts receivable turnovers for Nucor and AK Steel for 2007 and 2008.
b. Describe the likely reasons for the differences in the accounts receivable turnovers for these two firms.
c. Describe the likely reasons for the trend in the accounts receivable turnovers of these two firms during the two-year period.
d. Calculate the inventory turnovers for Nucor and AK Steel for 2007 and 2008.

EXHIBIT 4.24

Selected Data for Nucor and AK Steel
(amounts in millions)
(Problem 4.18)

	2008	2007
Nucor		
Sales	$23,663	$16,593
Cost of Goods Sold	19,612	13,035
Average Accounts Receivable	1,420	1,340
Average Inventories	2,005	1,371
Change in Sales from Previous Year	+42.6%	+12.5%
AK Steel		
Sales	$ 7,644	$ 7,003
Cost of Goods Sold	6,479	5,904
Average Accounts Receivable	572	686
Average Inventories	607	752
Change in Sales from Previous Year	+9.2%	+15.3%

e. Describe the likely reasons for the differences in the inventory turnovers of these two firms.
f. Describe the likely reasons for the trend in the inventory turnovers of these two firms during the two-year period.

4.19 CALCULATING AND INTERPRETING FIXED ASSETS TURNOVER RATIOS. Texas Instruments (TI) designs and manufactures semiconductor products for use in computers, telecommunications equipment, automobiles, and other electronics-based products. The manufacturing of semiconductors is highly capital-intensive. Hewlett-Packard Corporation (HP) manufactures computer hardware and various imaging products, such as printers and fax machines. Exhibit 4.25 presents selected data for TI and HP for 2006–2008.

Required

a. Compute the fixed assets turnover for each firm for 2006, 2007, and 2008.
b. Suggest reasons for the differences in the fixed assets turnovers of TI and HP.
c. Suggest reasons for the changes in the fixed assets turnovers of TI and HP during the three-year period.

4.20 CALCULATING AND INTERPRETING THE RATE OF RETURN ON COMMON SHAREHOLDERS' EQUITY AND ITS COMPONENTS. JCPenney operates a chain of retail department stores, selling apparel, shoes, jewelry, and home furnishings. It also offers most of its products through catalog distribution. During fiscal Year 5, it sold Eckerd Drugs, a chain of retail drugstores, and used the cash proceeds,

EXHIBIT 4.25

Selected Data for Texas Instruments and Hewlett-Packard
(amounts in millions)
(Problem 4.19)

	2008	2007	2006
Texas Instruments			
Sales	$ 12,501	$ 13,835	$ 14,255
Cost of Goods Sold	6,256	5,432	5,775
Capital Expenditures	763	686	1,272
Average Fixed Assets	3,457	3,780	3,925
Percentage Fixed Assets Depreciated	54.9%	52.3%	49.0%
Percentage Change in Sales	−9.6%	−3.0%	+6.4%
Hewlett-Packard			
Sales	$114,552	$118,364	$104,286
Cost of Goods Sold	86,351	87,065	76,965
Capital Expenditures	3,695	2,990	3,040
Average Fixed Assets	11,050	9,318	7,331
Percentage Fixed Assets Depreciated	74.7%	72.4%	87.0%
Percentage Change in Sales	−3.2%	+13.5%	+13.8%

strategically used to increase returns available to shareholders, we then examined the analysis of financial risk associated with the use of leverage along the following four dimensions:

1. *With respect to time frame:* We examined the analysis of a firm's ability to pay liabilities coming due the next year (short-term liquidity risk analysis) and its ability to pay liabilities coming due over a longer term (long-term solvency risk analysis). The financial ratios examined a firm's need for cash and other liquid resources relative to amounts coming due within various timeframes.
2. *With respect to the degree of financial distress:* We emphasized the need to consider risk as falling along a continuum from low risk to high risk of financial distress. Firms with a great deal of financial flexibility fall on the low side of this continuum. Most credit analysis occurs on the low- to medium-risk side of this continuum. Most bankruptcy risk analysis occurs on the medium- to high-risk side of this continuum.
3. *With respect to covariability of returns with other securities in the market:* We briefly highlighted the use of market equity beta as an indicator of systematic risk with the market, which is affected by the types of risk analyzed in this chapter.
4. *With respect to financial reporting:* We described various motives that induce managers to manipulate and report earnings numbers and other accounting data outside the bounds of GAAP and illustrated a model that estimates the likelihood of financial reporting manipulation.

Analysts and academic researchers refer to the first two dimensions of risk as nonsystematic, or firm-specific, risk. They refer to the third dimension of risk as systematic risk. They sometimes refer to the fourth dimension of risk as information risk. Common factors come into play in all four settings of risk analysis. Fixed costs related to operations or to financing constrain the flexibility of a firm to adapt to changing economic, business, and firm-specific conditions. The profitability and cash-generating ability of a firm allow it to operate within its constraints or to change the constraints in some desirable direction. If the constraints are too high or the capabilities to adapt are too low, a firm faces the risk of financial distress. Firms facing potential financial distress are more likely to manipulate earnings and accounting information.

QUESTIONS, EXERCISES, PROBLEMS, AND CASES

Questions and Exercises

5.1 INTERPRETING THE ALTERNATIVE DECOMPOSITION OF ROCE WITH NEGATIVE NET FINANCIAL OBLIGATIONS. Suppose an analyst reformulates financial statements to prepare the alternative decomposition of ROCE for a firm with no debt. The analyst determines that the company holds excess cash as large marketable equity securities. The result will be net financial obligations that are negative. Assume that operating ROA is positive and large. How will this affect the decomposition of ROCE = Operating ROA + (Leverage × Spread)? How do you interpret the net borrowing rate for this firm?

5.2 RELATION BETWEEN CURRENT RATIO AND OPERATING CASH FLOW TO CURRENT LIABILITIES RATIO. A firm has experienced an increasing current ratio but a decreasing operating cash flow to current liabilities ratio during the last three years. What is the likely explanation for these results?

5.3 RELATION BETWEEN CURRENT RATIO AND QUICK RATIO. A firm has experienced a decrease in its current ratio but an increase in its quick ratio during the last three years. What is the likely explanation for these results?

5.4 RELATION BETWEEN WORKING CAPITAL TURNOVER RATIOS AND CASH FLOW FROM OPERATIONS. While a firm's sales and net income have been steady during the last three years, the firm has experienced a decrease in its accounts receivable and inventory turnovers and an increase in its accounts payable turnover. What is the likely direction of change in cash flow from operations? How would your answer be different if sales and net income were increasing?

5.5 EFFECT OF TRANSACTIONS ON DEBT RATIOS. A firm had the following values for the four debt ratios discussed in the chapter:

Liabilities to Assets Ratio: less than 1.0
Liabilities to Shareholders' Equity Ratio: equal to 1.0
Long-Term Debt to Long-Term Capital Ratio: less than 1.0
Long-Term Debt to Shareholders' Equity Ratio: less than 1.0

a. Indicate whether each of the following independent transactions increases, decreases, or has no effect on each of the four debt ratios.
   (1) The firm issued long-term debt for cash.
   (2) The firm issued short-term debt and used the cash proceeds to redeem long-term debt (treat as a unified transaction).
   (3) The firm redeemed short-term debt with cash.
   (4) The firm issued long-term debt and used the cash proceeds to repurchase shares of its common stock (treat as a unified transaction).

b. The text states that analyst need not compute all four debt ratios each year because the debt ratios are highly correlated. Does your analysis in Part a support this statement? Explain.

5.6 INTEREST COVERAGE RATIO AS A MEASURE OF LONG-TERM SOLVENCY RISK. Identify the assumptions underlying the interest coverage ratio needed to make it an appropriate measure for analyzing long-term solvency risk.

5.7 INTEREST COVERAGE RATIO AS A MEASURE OF SHORT-TERM LIQUIDITY RISK. In what sense is the interest coverage ratio more a measure for assessing short-term liquidity risk than it is a measure for assessing long-term solvency risk?

5.8 INTERPRETING OPERATING CASH FLOW TO CURRENT AND TOTAL LIABILITIES RATIOS. Empirical research cited in the text indicates that firms with an operating cash flow to current liabilities ratio exceeding 0.40 portray low short-term liquidity risk. Similarly, firms with an operating cash flow to total liabilities ratio exceeding 20 percent portray low long-term solvency risk. What do these empirical results suggest about the mix of current and noncurrent liabilities for a financially healthy firm? What do they suggest about the mix of liabilities versus shareholders' equity financing?

5.9 INTERPRETING ALTMAN'S Z-SCORE BANKRUPTCY PREDICTION MODEL. Altman's bankruptcy prediction model places a coefficient of 3.3 on the earnings before interest and taxes divided by total assets variable but a coefficient of only 1.0 on the sales to total assets variable. Does this mean that the earnings variable is 3.3 times as important in predicting bankruptcy as the asset turnover variable? Explain.

5.10 MARKET EQUITY BETA IN RELATION TO SYSTEMATIC AND NONSYSTEMATIC RISK. Market equity beta measures the covariability of a firm's returns with all shares traded on the market (in excess of the risk-free interest rate). We

refer to the degree of covariability as systematic risk. The market prices securities so that the expected returns should compensate the investor for the systematic risk of a particular stock. Stocks carrying a market equity beta of 1.20 should generate a higher return than stocks carrying a market equity beta of 0.90. Nonsystematic risk is any source of risk that does not affect the covariability of a firm's returns with the market. Some writers refer to nonsystematic risk as firm-specific risk. Why is the characterization of nonsystematic risk as firm-specific risk a misnomer?

5.11 COMPARISON OF ALTMAN'S BANKRUPTCY PREDICTION MODEL AND BENEISH'S EARNINGS MANIPULATION RISK MODEL. Altman's bankruptcy risk model utilizes the values of the variables at a particular point in time (balance sheet variables) or for a period of time (income statement values). For the most part, Beneish's earnings manipulation risk model utilizes changes in variables from one period to the next. Why might the levels of values in Altman's model be more appropriate for predicting bankruptcy and changes in values in Beneish's model be more appropriate for identifying earnings manipulation?

Problems and Cases

5.12 CALCULATING AND INTERPRETING RISK RATIOS. Refer to the financial statement data for Hasbro in Problem 4.23 in Chapter 4. Exhibit 5.15 presents risk ratios for Hasbro for Year 2 and Year 3.

EXHIBIT 5.15

Risk Ratios for Hasbro
(Problem 5.12)

	Year 4	Year 3	Year 2
Revenues to Cash Ratio		6.2	7.7
Days Revenues Held in Cash		59	47
Current Ratio		1.6	1.5
Quick Ratio		1.2	1.1
Operating Cash Flow to Average Current Liabilities Ratio		0.479	0.548
Days Accounts Receivable		68	73
Days Inventory		51	68
Days Accounts Payable		47	49
Net Days Working Capital		72	91
Liabilities to Assets Ratio		0.556	0.621
Liabilities to Shareholders' Equity Ratio		1.251	1.639
Long-Term Debt to Long-Term Capital Ratio		0.328	0.418
Long-Term Debt to Shareholders' Equity Ratio		0.489	0.720
Operating Cash Flow to Total Liabilities Ratio		0.245	0.238
Interest Coverage Ratio		5.6	2.3

Required

a. Calculate the amounts of these ratios for Year 4.
b. Assess the changes in the short-term liquidity risk of Hasbro between Year 2 and Year 4 and the level of that risk at the end of Year 4.
c. Assess the changes in the long-term solvency risk of Hasbro between Year 2 and Year 4 and the level of that risk at the end of Year 4.

5.13 CALCULATING AND INTERPRETING RISK RATIOS. Refer to the financial statement data for Abercrombie & Fitch in Problem 4.24 in Chapter 4. Exhibit 5.16 presents risk ratios for Abercrombie & Fitch for fiscal Year 3 and Year 4.

Required

a. Compute the amounts of these ratios for fiscal Year 5.
b. Assess the changes in the short-term liquidity risk of Abercrombie & Fitch between fiscal Year 3 and fiscal Year 5 and the level of that risk at the end of fiscal Year 5.
c. Assess the changes in the long-term solvency risk of Abercrombie & Fitch between fiscal Year 3 and fiscal Year 5 and the level of that risk at the end of fiscal Year 5.

EXHIBIT 5.16

Risk Ratios for Abercrombie & Fitch
(Problem 5.13)

	Year 5	Year 4	Year 3
Revenues to Cash Ratio		34.5	13.8
Days Revenues in Cash		11	26
Current Ratio		2.4	2.3
Quick Ratio		1.7	1.6
Operating Cash Flow to Current Liabilities Ratio		1.177	1.587
Days Accounts Receivable		2	4
Days Inventory		72	61
Days Accounts Payable		26	22
Net Days Working Capital		48	43
Liabilities to Assets Ratio		0.591	0.592
Liabilities to Shareholders' Equity Ratio		1.443	1.448
Long-Term Debt to Long-Term Capital Ratio		0.454	0.461
Long-Term Debt to Shareholders' Equity Ratio		0.831	0.855
Operating Cash Flow to Total Liabilities Ratio		0.298	0.380
Interest Coverage Ratio		7.2	7.6

5.14 INTERPRETING RISK RATIOS. Refer to the profitability ratios of Coca-Cola in Problem 4.25 in Chapter 4. Exhibit 5.17 presents risk ratios for Coca-Cola for 2006-2008. As we did within the chapter for PepsiCo, we utilize Coca-Cola's footnote disclosures