# Chapter 2
# Review of Accounting

## Discussion Questions

2-1. Discuss some financial variables that affect the price-earnings ratio.

The price-earnings ratio will be influenced by the earnings and sales growth of the firm, the risk or volatility in performance, the debt-equity structure of the firm, the dividend payment policy, the quality of management, and a number of other factors. The ratio tends to be future-oriented, and the more positive the outlook, the higher it will be.

2-2. What is the difference between book value per share of common stock and market value per share? Why does this disparity occur?

Book value per share is arrived at by taking the cost of the assets and subtracting out liabilities and preferred stock and dividing by the number of common shares outstanding. It is based on the historical cost of the assets. Market value per share is based on the current assessed value of the firm in the marketplace and may bear little relationship to original cost. Besides the disparity between book and market value caused by the historical cost approach, other contributing factors are the growth prospects for the firm, the quality of management, and the industry outlook. To the extent these are quite negative or positive; market value may differ widely from book value.

2-3. Explain how depreciation generates actual cash flows for the company.

The only way depreciation generates cash flows for the company is by serving as a tax shield against reported income. This non-cash deduction may provide cash flow equal to the tax rate times the depreciation charged. This much in taxes will be saved, while no cash payments occur.

2-4. What is the difference between accumulated depreciation and depreciation expense? How are they related?

Accumulated depreciation is the sum of all past and present depreciation charges, while depreciation expense is the current year's charge. They are related in that the sum of all prior depreciation expense should be equal to accumulated depreciation (subject to some differential related to asset write-offs).

2-5. How is the income statement related to the balance sheet?

The earnings (less dividends) reported in the income statement is transferred to the ownership section of the balance sheet as retained earnings. Thus, what we earn in the income statement becomes part of the ownership interest in the balance sheet.

2-6. Comment on why inflation may restrict the usefulness of the balance sheet as normally presented.

The balance sheet is based on historical costs. When prices are rising rapidly, historical cost data may lose much of their meaning—particularly for plant and equipment and inventory.

2-7. Explain why the statement of cash flows provides useful information that goes beyond income statement and balance sheet data.

The income statement and balance sheet are based on the accrual method of accounting, which attempts to match revenues and expenses in the period in which they occur. However, accrual accounting does not attempt to properly assess the cash flow position of the firm. The statement of cash flows fulfills this need.

2-8. What are the three primary sections of the statement of cash flows? In what section would the payment of a cash dividend be shown?

The sections of the statement of cash flows are:

Cash flows from operating activities
Cash flows from investing activities
Cash flows from financing activities

The payment of cash dividends falls into the financing activities category.

2-9. What is free cash flow? Why is it important to leveraged buyouts?

Free cash flow is equal to cash flow from operating activities:

Minus: Capital expenditures required to maintain the productive capacity of the firm.

Minus: Dividends (required to maintain the payout on common stock and to cover any preferred stock obligation).

The analyst or banker normally looks at free cash flow to determine whether there are sufficient excess funds to pay back the loan associated with the leveraged buyout.

2-10. Why is interest expense said to cost the firm substantially less than the actual expense, while dividends cost it 100 percent of the outlay?

Interest expense is a tax deductible item to the corporation, while dividend payments are not. The net cost to the corporation of interest expense is the amount paid multiplied by the difference of one minus the applicable tax rate.

For example, \$100 of interest expense costs the company \$65 after taxes when the corporate tax rate is 35 percent—for example, $\$100 \times (1 - 0.35) = \$65$.

# Chapter 2

## Problems

1. **Income Statement (LO1)** Frantic Fast Foods had earnings after taxes of \$420,000 in the year 20X1 with 309,000 shares outstanding. On January 1, 20X2, the firm issued 20,000 new shares. Because of the proceeds from these new shares and other operating improvements, earnings after taxes increased by 30 percent.
   *a.* Compute earnings per share for the year 20X1.
   *b.* Compute earnings per share for the year 20X2.

## 2-1. Solution:

## Frantic Fast Foods

a. Year 20X1

$$\text{Earnings per share} = \frac{\text{Earnings after taxes}}{\text{Shares outstanding}}$$

$$= \frac{\$420{,}000}{309{,}000} = \$1.36$$

b. Year 20X2

$$\text{Earnings after taxes} = \$420{,}000 \times 1.30 = \$546{,}000$$
$$\text{Shares outstanding} = 309{,}000 + 20{,}000 = 329{,}000$$

$$\text{Earnings per share} = \frac{\$546{,}000}{329{,}000} = \$1.66$$

2. **Income statement (LO1)** Sosa Diet Supplements had earnings after taxes of $800,000 in the year 20X1 with 200,000 shares of stock outstanding. On January 1, 20X2, the firm issued 50,000 new shares. Because of the proceeds from these new shares and other operating improvements, earnings after taxes increased by 30 percent.
   *a.* Compute earnings per share for the year 20X1.
   *b.* Compute earnings per share for the year 20X2.

## 2-2. Solution:

## Sosa Diet Supplements

a. Year 20X1

$$\text{Earnings per share} = \frac{\text{Earnings after taxes}}{\text{Shares outstanding}}$$

$$= \frac{\$800{,}000}{200{,}000} = \$4.00$$

b. Year 20X2

$$\text{Earnings after taxes} = \$800{,}000 \times 1.30 = \$1{,}040{,}000$$
$$\text{Shares outstanding} = 200{,}000 + 50{,}000 = 250{,}000$$
$$\text{Earning per share} = \frac{\$1{,}040{,}000}{250{,}000} = \$4.16$$

3. *a.* **Gross profit (LO1)** Swank Clothiers had sales of \$383,000 and cost of goods sold of \$260,000. What is the gross profit margin (ratio of gross profit to sales)?

   *b.* If the average firm in the clothing industry had a gross profit of 25 percent, how is the firm doing?

## 2-3. Solution:

### Swank Clothiers

a.

| | |
|---|---|
| Sales | \$383,000 |
| Cost of goods sold | 260,000 |
| Gross Profit | \$123,000 |

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Sales}} \frac{\$123{,}000}{\$383{,}000} = 32\%$$

b. With a gross profit of 32 percent, the firm is outperforming the industry average of 25 percent.

4. **Operating profit (LO1)** A-Rod Fishing Supplies had sales of \$2,500,000 and cost of goods sold of \$1,710,000. Selling and administrative expenses represented 10 percent of sales. Depreciation was 6 percent of the total assets of \$4,680,000. What was the firm's operating profit?

## 2-4. Solution:

**A-Rod Fishing Supplies**

| | |
|---|---|
| Sales | $2,500,000 |
| Cost of goods sold | 1,710,000 |
| Gross Profit | 790,000 |
| Selling and administrative expense* | 250,000 |
| Depreciation expense** | 280,800 |
| Operating profit | $ 259,200 |

* 10% × $2,500,000 = $250,000

** 6% × $4,680,000 = $280,800

5. **Income statement (LO1)** Arrange the following income statement items so they are in the proper order of an income statement:

Taxes
Shares outstanding
Interest expense
Depreciation expense
Preferred stock dividends
Operating profit
Sales
Gross profit
Earnings per share
Earnings before taxes
Cost of goods sold
Earnings after taxes
Earnings available to common stockholders
Selling and administrative expense

## 2-5. Solution:

Sales
– Cost of goods sold
Gross profit
– Selling and administrative expense
– Depreciation expense
Operating profit
– Interest expense
Earnings before taxes
– Taxes
Earnings after taxes
– Preferred stock dividends

Earnings available to common stockholders
Shares outstanding
Earnings per share

6. **Income statement (LO1)** Given the following information, prepare an income statement for the Dental Drilling Company.

| | |
|---|---|
| Selling and administrative expense | $ 112,000 |
| Depreciation expense | 73,000 |
| Sales | 489,000 |
| Interest expense | 45,000 |
| Cost of goods sold | 156,000 |
| Taxes | 47,000 |

## 2-6. Solution:

### Dental Drilling Company

### Income Statement

| | |
|---|---|
| Sales | $ 489,000 |
| Cost of goods sold | $ 156,000 |
| Gross profit | $ 333,000 |
| Selling and administrative expense | $ 112,000 |
| Depreciation expense | $ 73,000 |
| Operating profit | $ 148,000 |
| Interest expense | $ 45,000 |
| Earnings before taxes | $ 103,000 |
| Taxes | $ 47,000 |
| Earnings after taxes | $ 56,000 |

7. **Income statement (LO1)** Given the following information, prepare in good form an income statement for Jonas Brothers Cough Drops.

| | |
|---|---|
| Selling and administrative expense | $ 328,000 |
| Depreciation expense | 195,000 |
| Sales | 1,660,000 |
| Interest expense | 129,000 |
| Cost of goods sold | 560,000 |
| Taxes | 171,000 |

## 2-7. Solution:

### Jonas Brothers Cough Drops
### Income Statement

| | |
|---|---|
| Sales | $1,660,000 |
| Cost of goods sold | 560,000 |
| Gross profit | 1,100,000 |
| Selling and administrative expense | 328,000 |
| Depreciation expense | 195,000 |
| Operating profit | 577,000 |
| Interest expense | 129,000 |
| Earnings before taxes | 448,000 |
| Taxes | 171,000 |
| Earnings after taxes | $ 277,000 |

8. **Determination of profitability (LO1)** Prepare in good form an income statement for Franklin Kite Co. Inc. Take your calculations all the way to computing earnings per share.

| | |
|---|---|
| Sales | $900,000 |
| Shares outstanding | 50,000 |
| Cost of goods sold | 400,000 |
| Interest expense | 40,000 |
| Selling and administrative expense | 60,000 |
| Depreciation expense | 20,000 |
| Preferred stock dividends | 80,000 |
| Taxes | 50,000 |

## 2-8. Solution:

**Franklin Kite Company**
**Income Statement**

| | |
|---|---|
| Sales | $900,000 |
| Cost of goods sold | 400,000 |
| Gross profit | 500,000 |
| Selling and administrative expense | 60,000 |
| Depreciation expense | 20,000 |
| Operating profit | $420,000 |
| Interest expense | 40,000 |
| Earnings before taxes | $390,000 |
| Taxes | 120,000 |
| Earnings after taxes | $270,000 |
| Preferred stock dividends | 80,000 |
| Earnings available to common stockholders. | 190,000 |
| Shares outstanding | 50,000 |
| Earnings per share | $3.80 |

9. **Determination of profitability (LO1)** Prepare an income statement for Virginia Slim Wear. Take your calculations all the way to computing earnings per share.

| | |
|---|---|
| Sales | $1,360,000 |
| Shares outstanding | 104,000 |
| Cost of goods sold | 700,000 |
| Interest expense | 34,000 |
| Selling and administrative expense | 49,000 |
| Depreciation expense | 23,000 |
| Preferred stock dividends | 86,000 |
| Taxes | 100,000 |

## 2-9. Solution:

### Virginia Slim Wear
### Income Statement

| | |
|---|---|
| Sales | $1,360,000 |
| Cost of goods sold | 700,000 |
| Gross profit | 660,000 |
| Selling and administrative expense | 49,000 |
| Depreciation expense | 23,000 |
| Operating profit | 588,000 |
| Interest expense | 34,000 |
| Earnings before taxes | 554,000 |
| Taxes | 100,000 |
| Earnings after taxes | 454,000 |
| Preferred stock dividends | 86,000 |
| Earnings available to common stockholders | $ 368,000 |
| Shares outstanding | 104,000 |
| Earnings per share | $ 3.54 |

10. **Income statement (LO1)** Precision Systems had sales of $820,000, cost of goods of $510,000, selling and administrative expense of $60,000, and operating profit of $103,000.

    What was the value of depreciation expense? Set this problem up as a partial income statement, and determine depreciation expense as the plug figure.

## 2-10. Solution:

### Precision Systems

| | |
|---|---|
| Sales | $820,000 |
| Cost of goods sold | 510,000 |
| Gross profit | 310,000 |
| Selling and administrative expense | 60,000 |
| Depreciation (plug figure) | **147,000** |
| Operating profit | $103,000 |

11. **Depreciation and earnings (LO1)** Stein Books Inc. sold 1,900 finance textbooks for $250 each to High Tuition University in 20X1. These books cost $210 to produce. Stein Books spent $12,200 (selling expense) to convince the university to buy its books.

    Depreciation expense for the year was $15,200. In addition, Stein Books borrowed $104,000 on January 1, 20X1, on which the company paid 12 percent interest. Both the interest and principal of the loan were paid on December 31, 20X1. The publishing firm's tax rate is 30 percent.

    Did Stein Books make a profit in 20X1? Please verify with an income statement presented in good form.

## 2-11. Solution:

### Stein Books Inc.

Income Statement

For the Year Ending December 31, 20X1

| | |
|---|---|
| Sales (1,900 books at $250 each) | $475,000 |
| Cost of goods sold (1,900 books at $210 each) | 399,000 |
| Gross profit | 76,000 |
| Selling expense | 12,200 |
| Depreciation expense | 15,200 |
| Operating profit | $ 48,600 |
| Interest expense ($104,000 × 12%) | 12,480 |
| Earnings before taxes | 36,120 |

| | |
|---|---|
| Taxes @ 30% | 10,836 |
| Earnings after taxes | $ 25,284 |

12. **Determination of profitability (LO1)** Lemon Auto Wholesalers had sales of $1,000,000 last year and cost of goods sold represented 78 percent of sales. Selling and administrative expenses were 12 percent of sales. Depreciation expense was $11,000 and interest expense for the year was $8,000. The firm's tax rate is 30 percent.
    *a.* Compute earnings after taxes.
    *b.* Assume the firm hires Ms. Carr, an efficiency expert, as a consultant. She suggests that by increasing selling and administrative expenses to 14 percent of sales, sales can be increased to $1,050,900. The extra sales effort will also reduce cost of goods sold to 74 percent of sales. (There will be a larger markup in prices as a result of more aggressive selling.) Depreciation expense will remain at $11,000. However, more automobiles will have to be carried in inventory to satisfy customers, and interest expense will go up to $15,800. The firm's tax rate will remain at 30 percent. Compute revised earnings after taxes based on Ms. Carr's suggestions for Lemon Auto Wholesalers. Will her ideas increase or decrease profitability?

## 2-12. Solution:

### Lemon Auto Wholesalers
### Income Statement

| | | |
|---|---|---|
| a. | Sales | $1,000,000 |
| | Cost of goods sold (78% of sales) | $ 780,000 |
| | Gross profit | $ 220,000 |
| | Selling and administrative expense (12% of sales) | $ 120,000 |
| | Depreciation | $ 11,000 |
| | Operating profit | $ 89,000 |
| | Interest expense | $ 8,000 |
| | Earnings before taxes | $ 81,000 |
| | Taxes @ 30% | $ 24,300 |
| | Earnings after taxes | $ 56,700 |

## 2-12. (Continued)

| | |
|---|---|
| b. Sales | $1,050,900 |
| Cost of goods sold (74% of sales) | $ 777,666 |
| Gross profit | $ 273,234 |
| Selling and administrative expense (14% of sales) | $ 147,126 |
| Depreciation | $ 11,000 |
| Operating profit | $ 115,108 |
| Interest expense | $ 15,800 |
| Earnings before taxes | $ 99,308 |
| Taxes @ 30% | $ 29,792 |
| Earnings after taxes | $ 69,516 |

Ms. Carr's ideas will increase profitability.

13. **Balance sheet (LO3)** Classify the following balance sheet items as current or noncurrent:

Retained earnings
Accounts payable
Prepaid expenses
Plant and equipment
Inventory
Common stock
Bonds payable
Accrued wages payable
Accounts receivable
Capital in excess of par
Preferred stock
Marketable securities

## 2-13. Solution:

Retained earnings – noncurrent
Accounts payable – current
Prepaid expense – current
Plant and equipment – noncurrent
Inventory – current
Common stock – noncurrent
Bonds payable – noncurrent
Accrued wages payable – current
Accounts receivable – current
Capital in excess of par – noncurrent

Preferred stock – noncurrent
Marketable securities – current

14. **Balance sheet and income statement classification (LO1 & 3)** Fill in the blank spaces with categories 1 through 7:

1. Balance sheet (BS)
2. Income statement (IS)
3. Current assets (CA)
4. Fixed assets (FA)
5. Current liabilities (CL)
6. Long-term liabilities (LL)
7. Stockholders' equity (SE)

| Indicate Whether Item Is on Balance Sheet (BS) or Income Statement (IS) | If on Balance Sheet, Designate Which Category | Item |
|---|---|---|
| _____ | _____ | Accounts receivable |
| _____ | _____ | Retained earnings |
| _____ | _____ | Income tax expense |
| _____ | _____ | Accrued expenses |
| _____ | _____ | Cash |
| _____ | _____ | Selling and administrative expenses |
| _____ | _____ | Plant and equipment |
| _____ | _____ | Operating expenses |
| _____ | _____ | Marketable securities |
| _____ | _____ | Interest expense |
| _____ | _____ | Sales |
| _____ | _____ | Notes payable (6 months) |
| _____ | _____ | Bonds payable, maturity 2019 |
| _____ | _____ | Common stock |
| _____ | _____ | Depreciation expense |
| _____ | _____ | Inventories |
| _____ | _____ | Capital in excess of par value |
| _____ | _____ | Net income (earnings after taxes) |
| _____ | _____ | Income tax payable |

## 2-14. Solution:

1. Balance Sheet (BS)
2. Income Statement (IS)
3. Current Assets (CA)

4. Fixed Assets (FA)
5. Current Liabilities (CL)
6. Long-Term Liabilities (LL)
7. Stockholders Equity (SE)

**2-14. (Continued)**

| ***Indicate Whether Item is on Income Statement or Balance Sheet*** | ***If Item Is on Balance Sheet, Designate Which Category*** | ***Item*** |
|---|---|---|
| BS | CA | Accounts Receivable |
| BS | SE | Retained Earnings |
| IS | | Income Tax Expense |
| BS | CL | Accrued Expenses |
| BS | CA | Cash |
| IS | | Selling and Administrative expenses |
| BS | FA | Plant & Equipment |
| IS | | Operating Expenses |
| BS | CA | Marketable Securities |
| IS | | Interest Expense |
| IS | | Sales |
| BS | CL | Notes Payable (6 Months) |
| BS | LL | Bonds Payable (Maturity 2019) |
| BS | SE | Common Stock |
| IS | | Depreciation Expense |
| BS | CA | Inventories |

| | | |
|---|---|---|
| BS | SE | Capital in Excess of Par Value |
| IS | | Net Income (Earnings after Taxes) |
| BS | CL | Income Tax Payable |

15. **Development of balance sheet (LO3)** Arrange the following items in proper balance sheet presentation:

| | |
|---|---|
| Accumulated depreciation | $309,000 |
| Retained earnings | 187,000 |
| Cash | 14,000 |
| Bonds payable | 136,000 |
| Accounts receivable | 54,000 |
| Plant and equipment—original cost | 775,000 |
| Accounts payable | 35,000 |
| Allowance for bad debts | 9,000 |
| Common stock, $1 par, 100,000 shares outstanding | 100,000 |
| Inventory | 70,000 |
| Preferred stock, $59 par, 1,000 shares outstanding | 59,000 |
| Marketable securities | 24,000 |
| Investments | 20,000 |
| Notes payable | 34,000 |
| Capital paid in excess of par (common stock) | 88,000 |

## 2-15. Solution:

### Assets

| | | |
|---|---|---|
| Current Assets: | | |
| Cash | | $ 14,000 |
| Marketable securities | | 24,000 |
| Accounts receivable | $ 54,000 | |
| Less: Allowance for bad debts | 9,000 | 45,000 |
| Inventory | | 70,000 |
| Total current assets | | $153,000 |
| Other Assets: | | |
| Investments | | 20,000 |
| Fixed Assets: | | |

| | | |
|---|---|---|
| Plant and equipment.................... | $775,000 | |
| Less: Accumulated depreciation | 309,000 | |
| Net plant and equipment............. | | 466,000 |
| Total assets............................. | | $ 639,000 |

## 2-15. (Continued)

### Liabilities and Stockholders' Equity

| | |
|---|---|
| Current Liabilities: | |
| Accounts payable.................................................... | $ 35,000 |
| Notes payable........................................................ | 34,000 |
| Total current liabilities......................................... | $ 69,000 |
| Long-term liabilities................................................. | |
| Bonds payable........................................................ | 136,000 |
| Total liabilities...................................................... | $205,000 |
| Stockholders' equity: | |
| Preferred stock, $59 par, 1,000 shares outstanding... | 59,000 |
| Common stock, $1 par, 100,000 shares outstanding. | 100,000 |
| Capital paid in excess of par (common stock).......... | 88,000 |
| Retained earnings.................................................... | 187,000 |
| Total stockholders' equity.................................... | $434,000 |
| Total liabilities and stockholders' equity.......... | $639,000 |

16. **Earnings per share and retained earnings (LO1 and 3)** Elite Trailer Parks has an operating profit or $200,000. Interest expense for the year was $10,000; preferred dividends paid were $18,750; and common dividends paid were $30,000. The tax was $61,250. The firm has 20,000 shares of common stock outstanding.

    *a.* Calculate the earnings per share and the common dividends per share for Elite Trailer Parks.

    *b.* What was the increase in retained earnings for the year?

## 2-16. Solution:

**Elite Trailer Parks**

| | | |
|---|---|---|
| a. | Operating profit (EBIT)........................................ | $200,000 |
| | Interest expense................................................ | 10,000 |
| | Earnings before taxes (EBT)................................ | $190,000 |
| | Taxes................................................................ | 61,250 |
| | Earnings after taxes (EAT)................................... | $128,750 |
| | Preferred dividends........................................... | 18,750 |
| | Available to common stockholders........................ | $110,000 |
| | Common dividends........................................... | 30,000 |
| | Increase in retained earnings................................. | $80,000 |

$$\frac{\text{Earnings Available to Common Stockholders}}{\text{Number of Shares of Com. Stock Outstanding}}$$

$$= \$110{,}000/20{,}000 \text{ shares}$$

$$= \$5.50 \text{ per share}$$

Dividends per share = $30,000/20,000 shares

= $1.50 per share

b. Increase in retained earnings = $80,000

17. **Earnings per share and retained earnings (LO1 and 3)** Quantum Technology had $669,000 of retained earnings on December 31, 20X2. The company paid common dividends of $35,500 in 20X2 and had retained earnings of $576,000 on December 31, 20X1. How much did Quantum Technology earn during 20X2, and what would earnings per share be if 47,400 shares of common stock were outstanding?

## 2-17. Solution:

**Quantum Technology**

| | |
|---|---|
| Retained earnings, December 31, 20X2....................... | $669,000 |
| Less: Retained earnings, December 31, 20X1............... | 576,000 |

| | |
|---|---|
| Change in retained earnings................................. | \$93,000 |
| Add: Common stock dividends.................................... | 35,500 |
| Earnings available to common stockholders................ | \$128,500 |

Earnings per share

$$= \frac{\$128{,}500}{47{,}400 \text{ shares}} = \$2.71 \text{ per share}$$

18. **Price/earning ratio (LO2)** Botox Facial Care had earnings after taxes of \$370,000 in 20X1 with 200,000 shares of stock outstanding. The stock price was \$31.50. In 20X2, earnings after taxes increased to \$436,000 with the same 200,000 shares outstanding. The stock price was \$42.00.
    *a.* Compute earnings per share and the P/E ratio for 20X1. (The P/E ratio equals the stock price divided by earnings per share.)
    *b.* Compute earnings per share and the P/E ratio for 20X2.
    *c.* Give a general explanation of why the P/E ratio changed.

## 2-18. Solution:

### Botox Facial Care

a. EPS (20X1) $= \dfrac{\$370{,}000}{200{,}000} = \$1.85$

P/E ratio (20X1) $= \text{Price/EPS} = \dfrac{\$31.50}{\$1.85} = 17.03x$

b. EPS (20X2) $= \dfrac{\$436{,}000}{200{,}000} = \$2.18$

$$\text{P/E ratio (20X2)} = \text{Price/EPS} = \frac{\$42.00}{\$2.18} = 19.27x$$

c. The stock price increased by 33.33% while EPS only increased 17.84%.

19. **Price/earning ratio (LO2)** Stilley Corporation had earnings after taxes of $436,000 in 20X2 with 200,000 shares outstanding. The stock price was $42.00. In 20X3, earnings after taxes declined to $206,000 with the same 200,000 shares outstanding. The stock price declined to $27.80.

*a*. Compute earnings per share and the P/E ratio for 20X2.

*b*. Compute earnings per share and the P/E ratio for 20X3.

*c*. Give a general explanation of why the P/E changed. You might want to consult the textbook to explain this surprising result.

## 2-19. Solution:

### Stilley Corporation

a. $$\text{EPS (20X2)} = \frac{\$436{,}000}{200{,}000} = \$2.18$$

$$\text{P/E ratio (20X2)} = \text{Price/EPS} = \frac{\$42.00}{\$2.18} = 19.27x$$

b. $$\text{EPS (20X3)} = \frac{\$206{,}000}{200{,}000} = \$1.03$$

$$\text{P/E ratio (20X3)} = \text{Price/EPS} = \frac{\$27.80}{\$1.03} = 26.99x$$

c. As explained in the text, when EPS drops rapidly, the stock price might not decline as much, and the P/E ratio rises. A higher P/E ratio under adverse conditions is not a positive.

20. **Cash flow (LO4)** Identify whether each of the following items increases or decreases cash flow:

| | |
|---|---|
| Increase in accounts receivable | Decrease in prepaid expenses |
| Increase in notes payable | Increase in inventory |

Depreciation expense
Increase in investments
Decrease in accounts payable
Dividend payment
Increase in accrued expenses

## 2-20. Solution:

Increase in accounts receivable – decreases cash flow (use)
Increase in notes payable – increases cash flow (source)
Depreciation expense – increases cash flow (source)
Increase in investments – decreases cash flow (use)
Decrease in accounts payable – decreases cash flow (use)
Decrease in prepaid expense – increases cash flow (source)
Increase in inventory – decreases cash flow (use)
Dividend payment – decreases cash flow (use)
Increase in accrued expenses – increases cash flow (source)

21. **Depreciation and cash flow (LO5)** The Rogers Corporation has a gross profit of $880,000 and $360,000 in depreciation expense. The Evans Corporation also has $880,000 in gross profit, with $60,000 in depreciation expense. Selling and administrative expense is $120,000 for each company.

Given that the tax rate is 40 percent, compute the cash flow for both companies. Explain the difference in cash flow between the two firms.

## 2-21. Solution:

### Rogers Corporation – Evans Corporation

| | Rogers | Evans |
|---|---|---|

| | | |
|---|---|---|
| Gross profit...................................... | $880,000 | $880,000 |
| Selling and adm. expense............ | 120,000 | 120,000 |
| Depreciation.................................... | 360,000 | 60,000 |
| Operating profit................................ | $400,000 | $700,000 |
| Taxes (40%).................................... | 160,000 | 280,000 |
| Earnings after taxes.......................... | $240,000 | $420,000 |
| Plus depreciation expense................ | $360,000 | $60,000 |
| Cash flow......................................... | $600,000 | $480,000 |

Rogers had $300,000 more in depreciation which provided $120,000 (0.40 × $300,000) more in cash flow.

22. **Free cash flow (LO4)** Nova Electrics anticipates cash flow from operating activities of $6 million in 20X1. It will need to spend $1.2 million on capital investments to remain competitive within the industry. Common stock dividends are projected at $.4 million and preferred stock dividends at $0.55 million.
    *a.* What is the firm's projected free cash flow for the year 20X1?
    *b.* What does the concept of free cash flow represent?

## 2-22. Solution:

### Nova Electronics

a.

| | |
|---|---|
| Cash flow from operations activities | $6.00 million |
| – Capital expenditures | 1.20 |
| – Common stock dividends | 0.40 |
| – Preferred stock dividends | 0.55 |
| Free cash flow | $3.85 million |

b. Free cash flow represents the funds that are available for special financial activities, such as a leveraged buyout, increased dividends, common stock repurchases, acquisitions, or repayment of debt.

23. **Book value (LO3)** Landers Nursery and Garden Stores has current assets of $220,000 and fixed assets of $170,000. Current liabilities are $80,000 and long-term liabilities are $140,000. There is $40,000 in preferred stock outstanding and the firm has issued 25,000 shares of common stock. Compute book value (net worth) per share.

## 2-23. Solution:

### Landers Nursery and Garden Stores

| | |
|---|---|
| Current assets | $220,000 |
| Fixed assets | 170,000 |
| Total assets | $390,000 |
| – Current liabilities | 80,000 |
| – Long-term liabilities | 140,000 |
| Stockholders' equity | $170,000 |
| – Preferred stock obligation | 40,000 |
| Net worth assigned to common | $130,000 |

| | | |
|---|---|---|
| Common shares outstanding............................ | | 25,000 |
| Book value (net worth) per share..................... | $ | 5.20 |

24. **Book value and market value (LO2 and 3)** The Holtzman Corporation has assets of $400,000, current liabilities of $50,000, and long-term liabilities of $100,000. There is $40,000 in preferred stock outstanding; 20,000 shares of common stock have been issued.

*a.* Compute book value (net worth) per share.
*b.* If there is $22,000 in earnings available to common stockholders, and Holtzman's stock has a P/E of 18 times earnings per share, what is the current price of the stock?
*c.* What is the ratio of market value per share to book value per share?

## 2-24. Solution:

### Holtzman Corporation

a.

| | |
|---|---|
| Total assets | $400,000 |
| – Current liabilities | 50,000 |
| – Long-term liabilities | 100,000 |
| – Stockholders' equity | $250,000 |
| – Preferred stock | 40,000 |
| Net worth assigned to common | $210,000 |
| Common shares outstanding | 20,000 |
| Book values (net worth) per share | $10.50 |

b.

| | |
|---|---|
| Earnings available to common | $22,000 |
| Shares outstanding | 20,000 |
| Earnings per share | $1.10 |

| | | | | |
|---|---|---|---|---|
| P/E ratio | × | earnings per share | = | price |
| 18 | × | $1.10 | = | $19.80 |

c. Market value per share (price) to book value per share $19.80/$10.50 = 1.89

25. **Book value and market value (LO2 and 3)** Amigo Software Inc. has total assets of $889,000, current liabilities of $192,000, and long-term liabilities of $154,000. There is $87,000 in preferred stock outstanding. Thirty thousand shares of common stock have been issued.

*a.* Compute book value (net worth) per share.
*b.* If there is $56,300 in earnings available to common stockholders, and the firm's stock has a P/E of 23 times earnings per share, what is the current price of the stock?

*c.* What is the ratio of market value per share to book value per share? (Round to two places to the right of the decimal point.)

## 2-25. Solution:

### Amigo Software, Inc.

a.

| | |
|---|---|
| Total assets | $889,000 |
| – Current liabilities | 192,000 |
| – Long-term liabilities | 154,000 |
| Stockholders' equity | $543,000 |
| – Preferred stock | 87,000 |
| Net worth assigned to common | $456,000 |
| Common shares outstanding | 30,000 |
| Book value (net worth) per share | $ 15.20 |

b.

| | |
|---|---|
| Earnings available to common | $ 56,300 |
| Shares outstanding | 30,000 |
| Earnings per share | $ 1.88 |

| P/ E ratio | × | earnings per share | = | price |
|---|---|---|---|---|
| 23 | × | $1.88 | = | $43.24 |

c. Market value per share (price) to book value per share
$43.24/$15.20 = 2.84

26. **Book value and P/E ratio (LO2 and 3)** Vriend Software Inc.'s book value per share is $15.20. Earnings per share is $1.88, and the firm's stock trades in the stock market at 3.5 times book value per share, what will the P/E ratio be? (Round to the nearest whole number.)

## 2-26. Solution:

### Vriend Software Inc.

$$3.5 \times \text{book value per share} = \text{price}$$

$$3.5 \times \$15.20 = \$53.20$$

$$\frac{\text{Price}}{\text{Earnings per share}} = \text{P/E}$$

$$\frac{\$53.20}{\$1.88} = 28.30 \quad \text{P/ E ratio} \qquad \text{round to 28x}$$

27. **Construction of income statement and balance sheet (LO1 and 3)** For December 31, 20X1, the balance sheet of Baxter Corporation was as follows:

| **Current Assets** | | **Liabilities** | |
|---|---|---|---|
| Cash | $ 15,000 | Accounts payable | $ 17,000 |
| Accounts receivable | 20,000 | Notes payable | 25,000 |
| Inventory | 30,000 | Bonds payable | 55,000 |
| Prepaid expenses | 12,500 | | |
| **Fixed Assets** | | **Stockholders' Equity** | |
| Plant and equipment (gross) | $255,000 | Preferred stock | $25,000 |
| Less: Accumulated depreciation | 51,000 | Common stock | 60,000 |
| | | Paid-in capital | 30,000 |
| Net plant and equipment | $204,000 | Retained earnings | 69,500 |
| Total assets | $281,500 | Total liabilities and stockholders' equity | $281,500 |

Sales for 20X2 were $245,000, and the cost of goods sold was 60 percent of sales. Selling and administrative expense was $24,500. Depreciation expense was 8 percent of plant and equipment (gross) at the beginning of the year. Interest expense for the notes payable was 10 percent, while the interest rate on the bonds payable was 12 percent. This interest expense is based on December 31, 20X1 balances. The tax rate averaged 20 percent.

$2,500 in preferred stock dividends were paid, and $5,500 in dividends were paid to common stockholders. There were 10,000 shares of common stock outstanding.

During 20X2, the cash balance and prepaid expenses balances were unchanged. Accounts receivable and inventory increased by 10 percent. A new machine was purchased on December 31, 20X2, at a cost of $40,000.

Accounts payable increased by 20 percent. Notes payable increased by $6,500 and bonds payable decreased by $12,500, both at the end of the year. The preferred stock, common stock, and paid-in capital in excess of par accounts did not change.

*a.* Prepare an income statement for 20X2.
*b.* Prepare a statement of retained earnings for 20X2.
*c.* Prepare a balance sheet as of December 31, 20X2.

## 2-27. Solution:

### Baxter Corporation
### 20X2 Income Statement

| | | |
|---|---|---|
| a. | Sales | $245,000 |
| | Cost of good sold (60%) | 147,000 |
| | Gross profit | $ 98,000 |
| | Selling and administrative expense | 24,500 |
| | Depreciation expense (8%) | 20,400[1] |
| | Operating profit (EBIT) | $ 53,100 |
| | Interest expense | 9,100[2] |
| | Earnings before taxes | $ 44,000 |
| | Taxes (20%) | 8,800 |
| | Earnings after taxes (EAT) | $ 35,200 |
| | Preferred stock dividends | 2,500 |
| | Earnings available to common stockholder | $ 32,700 |
| | Shares outstanding | 10,000 |
| | Earnings per share | $ 3.27 |
| b. | 20X2 Statement of Retained Earnings | |
| | Retained earnings balance, January 1, 20X2 | $ 69,500 |
| | Add: Earnings available to common stockholders, 20X2 | 32,700 |
| | Deduct: Cash dividend declared in 20X2 | 5,500 |

[1] 8% × $255,000 = $20,400
[2] (10% × $25,000) + (12% × $55,000) = $9,100

| | |
|---|---|
| Retained earnings balance, December 31, 20X2.................................... | $96,700 |

**2-27. (Continued)**

c. **20X2 Balance Sheet**

| Current Assets | | Liabilities | |
|---|---|---|---|
| Cash………….. | $ 15,000 | Accounts payable | $20,400 |
| Accounts receivable…….. | 22,000 | Notes payable…. | 31,500 |
| Inventory……… | 33,000 | Bonds payable… | 42,500 |
| Prepaid expenses | 12,500 | | |
| | $82,500 | | $94,400 |

| Fixed Assets | | Stockholders' Equity | |
|---|---|---|---|
| Gross plant…... | $295,000 | Preferred stock...<br>Common stock... | $ 25,000<br>60,000 |
| Accumulated depr………… | (71,400)[3] | Paid in capital in excess of par… | 30,000 |
| Net plant…….. | 223,600 | Retained earnings | 96,700 |
| Total assets….. | $306,100 | Total liability & equity……….. | $306,100 |

[3] $51,000 + $20,400 = $71,400

28. **Statement of cash flows (LO4)** Refer to the following financial statements for Crosby Corporation:

a) Prepare a statement of cash flows for the Crosby Corporation using the general procedures indicated in Table 2–10.
b) Describe the general relationship between net income and net cash flows from operating activities for the firm.
c) Has the buildup in plant and equipment been financed in a satisfactory manner? Briefly discuss.
d) Compute the book value per common share for both 20X1 and 20X2 for the Crosby Corporation.
e) If the market value of a share of common stock is 3.3 times book value for 20X1, what is the firm's P/E ratio for 20X2?

---

**CROSBY CORPORATION**
**Income Statement**
**For the Year Ended December 31, 20X2**

| | |
|---|---|
| Sales | $2,200,000 |
| Cost of goods sold | 1,300,000 |
| Gross profits | 900,000 |
| Selling and administrative expense | 420,000 |
| Depreciation expense | 150,000 |
| Operating income | 330,000 |
| Interest expense | 90,000 |
| Earnings before taxes | 240,000 |
| Taxes | 80,000 |
| Earnings after taxes | 160,000 |
| Preferred stock dividends | 10,000 |
| Earnings available to common stockholders | $ 150,000 |
| Shares outstanding | 120,000 |
| Earnings per share | $ 1.25 |

**Statement of Retained Earnings**
**For the Year Ended December 31, 20X2**

| | |
|---|---|
| Retained earnings, balance, January 1, 20X2 | $500,000 |
| Add: Earnings available to common stockholders, 20X2 | 150,000 |
| Deduct: Cash dividends declared and paid in 20X2 | 50,000 |
| Retained earnings, balance, December 31, 20X2 | $600,000 |

**Comparative Balance Sheets**
**For 20X1 and 20X2**

| Assets | Year-End 20X1 | Year-End 20X2 |
|---|---|---|

| | | |
|---|---|---|
| Current assets: | | |
| Cash | $ 70,000 | $100,000 |
| Accounts receivable (net) | 300,000 | 350,000 |
| Inventory | 410,000 | 430,000 |
| Prepaid expenses | 50,000 | 30,000 |
| Total current assets | 830,000 | 910,000 |
| Investments (long-term securities) | 80,000 | 70,000 |
| Plant and equipment | 2,000,000 | 2,400,000 |
| Less: Accumulated depreciation | 1,000,000 | 1,150,000 |
| Net plant and equipment | 1,000,000 | 1,250,000 |
| Total assets | $1,910,000 | $2,230,000 |

**Liabilities and Stockholders' Equity**

| | | |
|---|---|---|
| Current liabilities: | | |
| Accounts payable | $ 250,000 | $ 440,000 |
| Notes payable | 400,000 | 400,000 |
| Accrued expenses | 70,000 | 50,000 |
| Total current liabilities | 720,000 | 890,000 |
| Long-term liabilities: | | |
| Bonds payable, 20X2 | 70,000 | 120,000 |
| Total liabilities | 790,000 | 1,010,000 |
| Stockholders' equity: | | |
| Preferred stock, $100 par value | 90,000 | 90,000 |
| Common stock, $1 par value | 120,000 | 120,000 |
| Capital paid in excess of par | 410,000 | 410,000 |
| Retained earnings | 500,000 | 600,000 |
| Total stockholders' equity | 1,120,000 | 1,220,000 |
| Total liabilities and stockholders' equity | $1,910,000 | $2,230,000 |

(The following questions apply to the Crosby Corporation, as presented in Problem 27.)

## Solution 2-28 a):

### Crosby Corporation
### Statement of Cash Flows
### For the Year Ended December 31, 20X2

| | | |
|---|---|---|
| Cash flows from operating activities: | | |
| Net income (earnings after taxes) | | $160,000 |
| ............................................................ | | |
| Adjustments to determine cash | | |
| flow from operating activities: | $150,000 | |
| ............................................................ | (50,000) | |
| Add back depreciation | (20,000) | |
| ............................................................ | 20,000 | |
| Increase in accounts receivable | 190,000 | |
| ............................................................ | (20,000) | |
| Increase in inventory | | $270,000 |
| ............................................................ | | |
| Decrease in prepaid expenses | | $430,000 |
| ............................................................ | | |
| Increase in accounts payable | 10,000 | |
| ............................................................ | (400,000) | |
| Decrease in accrued expenses | | (390,000) |
| ............................................................ | | |
| Total adjustments | 50,000 | |
| ............................................................ | (10,000) | |
| Net cash flows from operating | (50,000) | |
| activities | | (10,000) |
| ............................................................ | | $ 30,000 |
| Cash flows from investing activities: | | |
| Decrease in investments | | |
| ............................................................ | | |
| Increase in plant and equipment | | |
| ............................................................ | | |
| Net cash flows from investing activities | | |
| Cash flows from financing activities: | | |

Increase in bonds payable
..................................................................
Preferred stock dividends paid
..................................................................
Common stock dividends paid
..................................................................
Net cash flows from financing
..................................................................
Net increase (decrease) in cash flows
.....................................................................

The student should observe that the increase in cash flows of $30,000 equals the $30,000 change in the cash account on the balance sheet. This indicates the statement is correct.

**Solution 2-28 b):**

Cash flows from operating activities far exceed net income. This occurs primarily because we add back depreciation of $319,000 and accounts payable increase by $248,000. Thus, the reader of the cash flow statement gets important insights as to how much cash flow was developed from daily operations.

**Solution 2-28 c):**

The buildup in plant and equipment of $690,000 (gross) and $371,000 (net) has been financed, in part, by the large increase in accounts payable (248,000). This is not a very satisfactory situation. Short-term sources of funds can always dry up, while fixed asset needs are permanent in nature. This firm may wish to consider more long-term financing, such as a mortgage, to go along with profits, the increase in bonds payable, and the add-back of depreciation.

**Solution 2-28 d):**

$$\text{Book value per share} = \frac{\text{Stockholders' equity} - \text{Preferred stock}}{\text{Common shares outstanding}}$$

$$\text{Book value per share (20X1)} = \frac{(\$1,120,000 - \$90,000)}{120,000} = \frac{\$1,030,000}{120,000} = \$8.58$$

$$\text{Book value per share (20X2)} = \frac{(\$1,220,000 - \$90,000)}{120,000} = \frac{\$1,130,000}{120,000} = \$9.42$$

**Solution 2-28 e):**

$$\begin{aligned}
\text{Market value} &= 3.3 \times \$9.42 = \$31.09 \\
\text{P / E ratio} &= \text{Market value / Earnings per share} \\
&= \$31.09 / \$1.25 \\
&= 24.87
\end{aligned}$$