

CHAPTER 14 (MAN)

FINANCIAL STATEMENT ANALYSIS

DISCUSSION QUESTIONS

1. Horizontal analysis is the percentage analysis of increases and decreases in corresponding statements. The percent change in the cash balances at the end of the preceding year from the end of the current year is an example. Vertical analysis is the percentage analysis showing the relationship of the component parts to the total in a single statement. The percent of cash as a portion of total assets at the end of the current year is an example.
2. Comparative statements provide information as to changes between dates or periods. Trends indicated by comparisons may be far more significant than the data for a single date or period.
3. Before this question can be answered, the increase in net income should be compared with changes in sales, expenses, and assets devoted to the business for the current year. The return on assets for both periods should also be compared. If these comparisons indicate favorable trends, the operating performance has improved; if not, the apparent favorable increase in net income may be offset by unfavorable trends in other areas.
4. Generally, the two ratios would be very close, because most service businesses sell services and hold very little inventory.
5.
 - a. A high inventory turnover minimizes the amount invested in inventories, thus freeing funds for more advantageous use. Storage costs, administrative expenses, and losses caused by obsolescence and adverse changes in prices are also kept to a minimum.
 - b. Yes. The inventory turnover relates to the “turnover” of inventory during the year, while the number of days’ sales in inventory relates to the amount of inventory on hand at the beginning and end of the year. Therefore, a business could have a high inventory turnover during the year, yet have a high number of days’ sales in inventory based on the beginning and end-of-year inventory amounts.
6. The ratio of fixed assets to long-term liabilities increased from 3.4 for the preceding year to 4.2 for the current year, indicating that the company is in a stronger position now than in the preceding year to borrow additional funds on a long-term basis.
7.
 - a. The rate earned on total assets adds interest expense to the net income, which is divided by average total assets. It measures the profitability of the total assets, without regard for how the assets are financed. The rate earned on stockholders’ equity divides net income by the average total stockholders’ equity. It measures the profitability of the stockholders’ investment.
 - b. The rate earned on stockholders’ equity is normally higher than the rate earned on total assets. This is because of leverage, which compensates stockholders for the higher risk of their investments.

DISCUSSION QUESTIONS (Concluded)

8.
 - a. Due to leverage, the rate on stockholders' equity will often be greater than the rate on total assets. This occurs because the amount earned on assets acquired through the use of funds provided by creditors exceeds the interest charges paid to creditors.
 - b. Higher. The concept of leverage applies to preferred stock as well as debt. The rate earned on common stockholders' equity ordinarily exceeds the rate earned on total stockholders' equity because the amount earned on assets acquired through the use of funds provided by preferred stockholders normally exceeds the dividends paid to preferred stockholders.
9. The earnings per share in the preceding year were \$3 per share ($\$6/2$), adjusted for the stock split in the latest year. McCants' earnings per share has deteriorated.
10. One report is the Report on Internal Control, which verifies management's conclusions on internal control. Another report is the Report on Fairness of the Financial Statements of Independent Registered Public Accounting Firm, where the Certified Public Accounting (CPA) firm that conducts the audit renders an opinion on the fairness of the statements.

PRACTICE EXERCISES**PE 14–1A (Man)**

| | |
|----------------------------|--|
| Temporary investments..... | \$6,400 increase (\$46,400 – \$40,000), or 16% |
| Inventory..... | \$6,400 decrease (\$73,600 – \$80,000), or –8% |

PE 14–1B (Man)

| | |
|-----------------------|---|
| Accounts payable..... | \$11,000 increase (\$111,000 – \$100,000), or 11% |
| Long-term debt..... | \$8,680 increase (\$132,680 – \$124,000), or 7% |

PE 14–2A (Man)

| | <u>Amount</u> | <u>Percentage</u> | |
|-------------------------|------------------|-------------------|-------------------------|
| Sales..... | \$850,000 | 100% | (\$850,000 ÷ \$850,000) |
| Cost of goods sold..... | <u>493,000</u> | <u>58%</u> | (\$493,000 ÷ \$850,000) |
| Gross profit..... | <u>\$357,000</u> | <u>42%</u> | (\$357,000 ÷ \$850,000) |

PE 14–2B (Man)

| | <u>Amount</u> | <u>Percentage</u> | |
|-------------------------|-------------------|-------------------|-----------------------------|
| Sales..... | \$1,200,000 | 100% | (\$1,200,000 ÷ \$1,200,000) |
| Cost of goods sold..... | <u>780,000</u> | <u>65%</u> | (\$780,000 ÷ \$1,200,000) |
| Gross profit..... | <u>\$ 420,000</u> | <u>35%</u> | (\$420,000 ÷ \$1,200,000) |

PE 14–3A (Man)**a. Current Ratio = Current Assets ÷ Current Liabilities**

$$\text{Current Ratio} = (\$130,000 + \$50,000 + \$60,000 + \$120,000) \div \$150,000$$

$$\text{Current Ratio} = 2.4$$

b. Quick Ratio = Quick Assets ÷ Current Liabilities

$$\text{Quick Ratio} = (\$130,000 + \$50,000 + \$60,000) \div \$150,000$$

$$\text{Quick Ratio} = 1.6$$

PE 14–3B (Man)

- a. **Current Ratio = Current Assets ÷ Current Liabilities**

$$\text{Current Ratio} = (\$210,000 + \$120,000 + \$110,000 + \$160,000) \div \$200,000$$

$$\text{Current Ratio} = 3.0$$

- b. **Quick Ratio = Quick Assets ÷ Current Liabilities**

$$\text{Quick Ratio} = (\$210,000 + \$120,000 + \$110,000) \div \$200,000$$

$$\text{Quick Ratio} = 2.2$$

PE 14–4A (Man)

- a. **Accounts Receivable Turnover = Net Sales ÷ Average Accounts Receivable**

$$\text{Accounts Receivable Turnover} = \$1,200,000 \div \$100,000$$

$$\text{Accounts Receivable Turnover} = 12.0$$

- b. **Number of Days' Sales in Receivables = $\frac{\text{Average Accounts Receivable}}{\text{Average Daily Sales}}$**

$$\text{Number of Days' Sales in Receivables} = \$100,000 \div (\$1,200,000 \div 365)$$

$$= \$100,000 \div \$3,288$$

$$\text{Number of Days' Sales in Receivables} = 30.4 \text{ days}$$

PE 14–4B (Man)

- a. **Accounts Receivable Turnover = Net Sales ÷ Average Accounts Receivable**

$$\text{Accounts Receivable Turnover} = \$3,150,000 \div \$210,000$$

$$\text{Accounts Receivable Turnover} = 15.0$$

- b. **Number of Days' Sales in Receivables = $\frac{\text{Average Accounts Receivable}}{\text{Average Daily Sales}}$**

$$\text{Number of Days' Sales in Receivables} = \$210,000 \div (\$3,150,000 \div 365)$$

$$= \$210,000 \div \$8,630$$

$$\text{Number of Days' Sales in Receivables} = 24.3 \text{ days}$$

PE 14–5A (Man)

- a. **Inventory Turnover = Cost of Goods Sold ÷ Average Inventory**

$$\text{Inventory Turnover} = \$630,000 \div \$90,000$$

$$\text{Inventory Turnover} = 7.0$$

- b. **Number of Days' Sales in Inventory = $\frac{\text{Average Inventory}}{\text{Average Daily Cost of Goods Sold}}$**

$$\text{Number of Days' Sales in Inventory} = \$90,000 \div (\$630,000 \div 365)$$

$$= \$90,000 \div \$1,726$$

$$\text{Number of Days' Sales in Inventory} = 52.1 \text{ days}$$

PE 14–5B (Man)

- a. **Inventory Turnover = Cost of Goods Sold ÷ Average Inventory**

$$\text{Inventory Turnover} = \$435,000 \div \$72,500$$

$$\text{Inventory Turnover} = 6.0$$

- b. **Number of Days' Sales in Inventory = $\frac{\text{Average Inventory}}{\text{Average Daily Cost of Goods Sold}}$**

$$\text{Number of Days' Sales in Inventory} = \$72,500 \div (\$435,000 \div 365)$$

$$= \$72,500 \div \$1,192$$

$$\text{Number of Days' Sales in Inventory} = 60.8 \text{ days}$$

PE 14–6A (Man)

$$\begin{aligned}
 \text{a. Ratio of Fixed Assets to Long-Term Liabilities} &= \frac{\text{Fixed Assets}}{\text{Long-Term Liabilities}} \\
 \text{Ratio of Fixed Assets to Long-Term Liabilities} &= \$1,800,000 \div \$600,000 \\
 \text{Ratio of Fixed Assets to Long-Term Liabilities} &= 3.0 \\
 \\
 \text{b. Ratio of Liabilities to Stockholders' Equity} &= \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}} \\
 \text{Ratio of Liabilities to Stockholders' Equity} &= \$900,000 \div \$750,000 \\
 \text{Ratio of Liabilities to Stockholders' Equity} &= 1.2
 \end{aligned}$$

PE 14–6B (Man)

$$\begin{aligned}
 \text{a. Ratio of Fixed Assets to Long-Term Liabilities} &= \frac{\text{Fixed Assets}}{\text{Long-Term Liabilities}} \\
 \text{Ratio of Fixed Assets to Long-Term Liabilities} &= \$2,000,000 \div \$800,000 \\
 \text{Ratio of Fixed Assets to Long-Term Liabilities} &= 2.5 \\
 \\
 \text{b. Ratio of Liabilities to Stockholders' Equity} &= \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}} \\
 \text{Ratio of Liabilities to Stockholders' Equity} &= \$1,000,000 \div \$625,000 \\
 \text{Ratio of Liabilities to Stockholders' Equity} &= 1.6
 \end{aligned}$$

PE 14–7A (Man)

$$\begin{aligned}
 \text{Number of Times Interest Charges Are Earned} &= \frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}} \\
 \text{Number of Times Interest Charges Are Earned} &= \frac{\$4,000,000 + \$400,000}{\$400,000} \\
 \text{Number of Times Interest Charges Are Earned} &= 11.0
 \end{aligned}$$

PE 14–7B (Man)

$$\begin{aligned}
 \text{Number of Times Interest Charges Are Earned} &= \frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}} \\
 \text{Number of Times Interest Charges Are Earned} &= \frac{\$8,000,000 + \$500,000}{\$500,000} \\
 \text{Number of Times Interest Charges Are Earned} &= 17.0
 \end{aligned}$$

PE 14–8A (Man)

Ratio of Net Sales to Assets = Net Sales ÷ Average Total Assets

Ratio of Net Sales to Assets = \$1,800,000 ÷ \$1,125,000

Ratio of Net Sales to Assets = 1.6

PE 14–8B (Man)

Ratio of Net Sales to Assets = Net Sales ÷ Average Total Assets

Ratio of Net Sales to Assets = \$4,400,000 ÷ \$2,000,000

Ratio of Net Sales to Assets = 2.2

PE 14–9A (Man)

Rate Earned on Total Assets = $\frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$

Rate Earned on Total Assets = $\frac{\$250,000 + \$100,000}{\$2,500,000}$

Rate Earned on Total Assets = $\frac{\$350,000}{\$2,500,000}$

Rate Earned on Total Assets = 14.0%

PE 14–9B (Man)

Rate Earned on Total Assets = $\frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$

Rate Earned on Total Assets = $\frac{\$410,000 + \$90,000}{\$5,000,000}$

Rate Earned on Total Assets = $\frac{\$500,000}{\$5,000,000}$

Rate Earned on Total Assets = 10.0%

PE 14–10A (Man)

a. **Rate Earned on Stockholders' Equity** =
$$\frac{\text{Net Income}}{\text{Average Stockholders' Equity}}$$

Rate Earned on Stockholders' Equity = $\$375,000 \div \$2,500,000$

Rate Earned on Stockholders' Equity = 15.0%

b. **Rate Earned on Common Stockholders' Equity** =
$$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

Rate Earned on Common Stockholders' Equity =
$$\frac{\$375,000 - \$75,000}{\$1,875,000}$$

Rate Earned on Common Stockholders' Equity = 16.0%

PE 14–10B (Man)

a. **Rate Earned on Stockholders' Equity** =
$$\frac{\text{Net Income}}{\text{Average Stockholders' Equity}}$$

Rate Earned on Stockholders' Equity = $\$1,000,000 \div \$6,250,000$

Rate Earned on Stockholders' Equity = 16.0%

b. **Rate Earned on Common Stockholders' Equity** =
$$\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

Rate Earned on Common Stockholders' Equity =
$$\frac{\$1,000,000 - \$50,000}{\$3,800,000}$$

Rate Earned on Common Stockholders' Equity = 25.0%

PE 14–11A (Man)

| | | |
|---------------------------------------|---|--|
| a. Earnings per Share on Common Stock | = | $\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$ |
| Earnings per Share on Common Stock | = | $(\$185,000 - \$25,000) \div \$100,000$ |
| Earnings per Share on Common Stock | = | $\$1.60$ |
| b. Price-Earnings Ratio | = | $\frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share on Common Stock}}$ |
| Price-Earnings Ratio | = | $\$20.00 \div \1.60 |
| Price-Earnings Ratio | = | 12.5 |

PE 14–11B (Man)

| | | |
|---------------------------------------|---|--|
| a. Earnings per Share on Common Stock | = | $\frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$ |
| Earnings per Share on Common Stock | = | $(\$410,000 - \$60,000) \div \$50,000$ |
| Earnings per Share on Common Stock | = | $\$7.00$ |
| b. Price-Earnings Ratio | = | $\frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share on Common Stock}}$ |
| Price-Earnings Ratio | = | $\$84.00 \div \7.00 |
| Price-Earnings Ratio | = | 12.0 |

EXERCISES**Ex. 14–1 (Man)****a.**

| SOLDNER, Inc. Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|--|--------------------|-------------|--------------------|-------------|
| | 2014 | | 2013 | |
| | Amount | Percent | Amount | Percent |
| Sales | \$1,500,000 | 100% | \$1,450,000 | 100% |
| Cost of goods sold | 930,000 | 62% | 812,000 | 56% |
| Gross profit | \$ 570,000 | 38% | \$ 638,000 | 44% |
| Selling expenses | 210,000 | 14% | 261,000 | 18% |
| Administrative expenses | 255,000 | 17% | 232,000 | 16% |
| Total operating expenses | \$ 465,000 | 31% | \$ 493,000 | 34% |
| Income from operations | 105,000 | 7% | 145,000 | 10% |
| Income tax expense | 52,500 | 3.5% | 72,500 | 5% |
| Net income | \$ 52,500 | 3.5% | \$ 72,500 | 5% |
| | | | | |

- b.** The vertical analysis indicates that the cost of goods sold as a percent of sales increased by 6 percentage points (62% – 56%), while selling expenses decreased by 4 percentage points (14% – 18%), and administrative expenses increased by 1% (17% – 16%). Thus, net income as a percent of sales dropped by 1.5% (5% – 3.5%).

Ex. 14–2 (Man)

a.

| SPEEDWAY MOTORSPORTS, INC. Comparative Income Statement (in thousands of dollars) For the Years Ended December 31 | | | | |
|--|--------------|---------|------------|---------|
| | Current Year | | Prior Year | |
| | Amount | Percent | Amount | Percent |
| Revenues: | | | | |
| Admissions | \$139,125 | 27.7% | \$163,087 | 29.6% |
| Event-related revenue | 156,691 | 31.2% | 178,805 | 32.5% |
| NASCAR broadcasting revenue | 178,722 | 35.6% | 173,803 | 31.6% |
| Other operating revenue | 27,705 | 5.5% | 34,827 | 6.3% |
| Total revenue | \$502,243 | 100.0% | \$550,522 | 100.0% |
| Expenses and other: | | | | |
| Direct expense of events | \$100,843 | 20.1% | \$100,922 | 18.3% |
| NASCAR purse and sanction fees | 120,273 | 23.9% | 123,078 | 22.4% |
| Other direct expenses | 21,846 | 4.3% | 26,208 | 4.8% |
| General and administrative | 188,196 | 37.5% | 266,252 | 48.3% |
| Total expenses and other | \$431,158 | 85.8% | \$516,460 | 93.8% |
| Income from continuing operations | \$ 71,085 | 14.2% | \$ 34,062 | 6.2% |

- b. While overall revenue decreased some between the two years, the overall mix of revenue sources did change somewhat. The NASCAR broadcasting revenue increased as a percent of total revenue by 4 percentage points, while the percent of admissions revenue to total revenue decreased by almost 2%. Two of the major expense categories (direct expense of events and NASCAR purse and sanction fees) as a percent of total revenue increased by approximately 4%. Other direct expenses, however, decreased by 0.5%, and general and administrative expenses decreased by about 11%. Overall, the income from continuing operations increased by 8% of total revenue between the two years, which is a favorable trend. The income from continuing operations as a percent of sales exceeds 14% in the current year, which is excellent. Apparently, owning and operating motor speedways is a business that produces high operating profit margins.

Note to Instructors: The high operating margin is probably necessary to compensate for the extensive investment in speedway assets.

Ex. 14–3 (Man)

a.

| BULL RUN COMPANY Common-Sized Income Statement For the Year Ended December 31, 20— | | | |
|---|------------------|---------|------------------------------|
| | Bull Run Company | | Electronics Industry Average |
| | Amount | Percent | |
| Sales | \$2,100,000 | 105% | 105% |
| Sales returns and allowances | 100,000 | 5% | 5% |
| Net sales | \$2,000,000 | 100% | 100% |
| Cost of goods sold | 1,040,000 | 52% | 60% |
| Gross profit | \$ 960,000 | 48% | 40% |
| Selling expenses | 560,000 | 28% | 22% |
| Administrative expenses | 300,000 | 15% | 12% |
| Total operating expenses | \$ 860,000 | 43% | 34% |
| Operating income | 100,000 | 5% | 6% |
| Other income | 60,000 | 3% | 3% |
| | \$ 160,000 | 8% | 9% |
| Other expense | 40,000 | 2% | 2% |
| Income before income tax | \$ 120,000 | 6% | 7% |
| Income tax expense | 60,000 | 3% | 6% |
| Net income | \$ 60,000 | 3% | 1% |

- b. The cost of goods sold is 8% lower than the industry average, but the selling expenses and administrative expenses are 6% and 3% higher than the industry average. The combined impact causes net income as a percent of sales to be 2% better than the industry average. Apparently, the company is managing the cost of manufacturing product better than the industry, but has slightly higher selling and administrative expenses relative to the industry. The cause of the higher selling and administrative expenses as a percent of sales, relative to the industry, can be investigated further.

Ex. 14–4 (Man)

| PEACOCK COMPANY Comparative Balance Sheet December 31, 2014 and 2013 | | | | |
|---|--------------------|-------------|--------------------|-------------|
| | 2014 | | 2013 | |
| | Amount | Percent | Amount | Percent |
| Current assets | \$1,050,000 | 30% | \$ 750,000 | 25% |
| Property, plant, and equipment | 1,960,000 | 56% | 2,100,000 | 70% |
| Intangible assets | 490,000 | 14% | 150,000 | 5% |
| Total assets | \$3,500,000 | 100% | \$3,000,000 | 100% |
| | | | | |
| Current liabilities | \$ 630,000 | 18% | \$ 420,000 | 14% |
| Long-term liabilities | 1,260,000 | 36% | 1,200,000 | 40% |
| Common stock | 350,000 | 10% | 300,000 | 10% |
| Retained earnings | 1,260,000 | 36% | 1,080,000 | 36% |
| Total liabilities and stockholders' equity | \$3,500,000 | 100% | \$3,000,000 | 100% |
| | | | | |

Ex. 14–5 (Man)**a.**

| BEZOS COMPANY Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|--|------------------|------------------|---------------------|---------------|
| | 2014 | 2013 | Increase (Decrease) | |
| | Amount | Amount | Amount | Percent |
| Sales | \$840,000 | \$600,000 | \$240,000 | 40.0% |
| Cost of goods sold | 724,500 | 525,000 | 199,500 | 38.0% |
| Gross profit | \$115,500 | \$ 75,000 | \$ 40,500 | 54.0% |
| Selling expenses | 52,500 | 37,500 | 15,000 | 40.0% |
| Administrative expenses | 41,400 | 30,000 | 11,400 | 38.0% |
| Total operating expenses | \$ 93,900 | \$ 67,500 | \$ 26,400 | 39.1% |
| Income before income tax | 21,600 | 7,500 | 14,100 | 188.0% |
| Income tax expense | 10,800 | 2,700 | 8,100 | 300.0% |
| Net income | \$ 10,800 | \$ 4,800 | \$ 6,000 | 125.0% |
| | | | | |

- b.** The net income for Bezos Company increased by approximately 125% from 2013 to 2014. This increase was the combined result of an increase in sales of 40% and lower percentage increases in cost of goods sold and administrative expenses. The cost of goods sold increased at a slower rate than the increase in sales, thus causing the percentage increase in gross profit to exceed the percentage increase in sales.

Ex. 14–6 (Man)

- a. (1) **Working Capital = Current Assets – Current Liabilities**

$$2014: \$2,420,000 = \$3,520,000 - \$1,100,000$$

$$2013: \$2,000,000 = \$3,000,000 - \$1,000,000$$

$$(2) \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$2014: \frac{\$3,520,000}{\$1,100,000} = 3.2$$

$$2013: \frac{\$3,000,000}{\$1,000,000} = 3.0$$

$$(3) \quad \text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$2014: \frac{\$2,420,000}{\$1,100,000} = 2.2$$

$$2013: \frac{\$2,000,000}{\$1,000,000} = 2.0$$

- b. The liquidity of Mossberg has improved from the preceding year to the current year. The working capital, current ratio, and quick ratio have all increased. Most of these changes are the result of an increase in current assets relative to current liabilities.

Ex. 14–7 (Man)

$$a. (1) \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Current Year: } \frac{\$17,569}{\$15,892} = 1.1$$

$$\text{Prior Year: } \frac{\$12,571}{\$8,756} = 1.4$$

$$(2) \quad \text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Current Year: } \frac{\$12,692}{\$15,892} = 0.8$$

$$\text{Prior Year: } \frac{\$8,759}{\$8,756} = 1.0$$

- b. The solvency of PepsiCo has decreased some over this time period. Both the current and quick ratios have decreased. The current ratio decreased from 1.4 to 1.1, and the quick ratio decreased from 1.0 to 0.8. While PepsiCo is a strong company with ample resources for meeting short-term obligations, its solvency as measured by the current and quick ratios has deteriorated during this period.

Ex. 14–8 (Man)

- a. The working capital, current ratio, and quick ratio are calculated incorrectly. The working capital and current ratio incorrectly include intangible assets and property, plant, and equipment as a part of current assets. Both are noncurrent. The quick ratio has both an incorrect numerator and denominator. The numerator of the quick ratio is incorrectly calculated as the sum of inventories, prepaid expenses, and property, plant, and equipment (\$36,000 + \$24,000 + \$55,200). The denominator is also incorrect, as it does not include accrued liabilities. The denominator of the quick ratio should be total current liabilities.

The correct calculations are as follows:

$$\begin{aligned}\text{Working Capital} &= \text{Current Assets} - \text{Current Liabilities} \\ \$30,000 &= \$330,000 - \$300,000\end{aligned}$$

$$\begin{aligned}\text{Current Ratio} &= \frac{\text{Current Assets}}{\text{Current Liabilities}} \\ &= \frac{\$330,000}{\$300,000} = 1.1\end{aligned}$$

$$\begin{aligned}\text{Quick Ratio} &= \frac{\text{Quick Assets}}{\text{Current Liabilities}} \\ &= \frac{\$102,000 + \$48,000 + \$120,000}{\$300,000} = 0.9\end{aligned}$$

- b. Unfortunately, the working capital, current ratio, and quick ratio are below the minimum threshold required by the bond indenture. This may require the company to renegotiate the bond contract, including a possible unfavorable change in the interest rate.

Ex. 14–9 (Man)

$$\text{a. (1) Accounts Receivable Turnover} = \frac{\text{Net Sales}}{\text{Average Accounts Receivable}}$$

$$2014: \frac{\$3,412,500}{\$487,500^*} = 7.0$$

$$^*\$487,500 = (\$475,000 + \$500,000) \div 2$$

$$2013: \frac{\$2,836,500}{\$457,500^{**}} = 6.2$$

$$^{**}\$457,500 = (\$440,000 + \$475,000) \div 2$$

$$(2) \text{ Number of Days' Sales in Receivables} = \frac{\text{Average Accounts Receivable}}{\text{Average Daily Sales}}$$

$$2014: \frac{\$487,500^1}{\$9,349^2} = 52.1 \text{ days}$$

$$2013: \frac{\$457,500^3}{\$7,771^4} = 58.9 \text{ days}$$

$$^1 \$487,500 = (\$475,000 + \$500,000) \div 2$$

$$^2 \$9,349 = \$3,412,500 \div 365 \text{ days}$$

$$^3 \$457,500 = (\$440,000 + \$475,000) \div 2$$

$$^4 \$7,771 = \$2,836,500 \div 365 \text{ days}$$

- b. The collection of accounts receivable has improved. This can be seen in both the increase in accounts receivable turnover and the reduction in the collection period. The credit terms require payment in 55 days. In 2013, the collection period exceeded these terms. However, the company apparently became more aggressive in collecting accounts receivable or more restrictive in granting credit to customers. Thus, in 2014, the collection period is within the credit terms of the company.

Ex. 14–10 (Man)

$$\text{a. (1) Accounts Receivable Turnover} = \frac{\text{Net Sales}}{\text{Average Accounts Receivable}}$$

$$\text{Xavier: } \frac{\$8,500,000}{(\$820,000 + \$880,000) \div 2} = 10.0$$

$$\text{Lestrade: } \frac{\$4,585,000}{(\$600,000 + \$710,000) \div 2} = 7.0$$

$$\text{(2) Number of Days' Sales in Receivables} = \frac{\text{Average Accounts Receivable}}{\text{Average Daily Sales}}$$

$$\text{Xavier: } \frac{(\$820,000 + \$880,000) \div 2}{\$23,287.7} = 36.5 \text{ days}$$

$$\text{Lestrade: } \frac{(\$600,000 + \$710,000) \div 2}{\$12,561.6^*} = 52.1 \text{ days}$$

* \$23,287.7 = \$8,500,000 ÷ 365 days

** \$12,561.6 = \$4,585,000 ÷ 365 days

- b. Xavier's accounts receivable turnover is much higher than Lestrade's (10.0 for Xavier vs. 7.0 for Lestrade). The number of days' sales in receivables is lower for Xavier than for Lestrade (36.5 days for Xavier vs. 52.1 days for Lestrade). These differences indicate that Xavier is able to turn over its receivables more quickly than Lestrade. As a result, it takes Xavier less time to collect its receivables.

Ex. 14–11 (Man)

a. (1)
$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Current Year: } \frac{\$6,375,000}{(\$860,000 + \$840,000) \div 2} = 7.5$$

$$\text{Preceding Year: } \frac{\$7,380,000}{(\$840,000 + \$800,000) \div 2} = 9.0$$

(2)
$$\text{Number of Days' Sales in Inventory} = \frac{\text{Average Inventory}}{\text{Average Daily Cost of Goods Sold}}$$

$$\text{Current Year: } \frac{(\$860,000 + \$840,000) \div 2}{\$17,466^*} = 48.7 \text{ days}$$

$$\text{Preceding Year: } \frac{(\$840,000 + \$800,000) \div 2}{\$20,219^{**}} = 40.6 \text{ days}$$

* \$17,466 = \$6,375,000 ÷ 365 days

** \$20,219 = \$7,380,000 ÷ 365 days

- b. The inventory position of the business has deteriorated. The inventory turnover has decreased, while the number of days' sales in inventory has increased. The sales volume has declined faster than the inventory has declined, thus resulting in the deteriorating inventory position.

Ex. 14–12 (Man)

$$\text{a. (1) Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

$$\text{Dell: } \frac{\$50,098}{(\$1,051 + \$1,301) \div 2} = 42.6$$

$$\text{HP: } \frac{\$96,089}{(\$6,128 + \$6,466) \div 2} = 15.3$$

$$\text{(2) Number of Days' Sales in Inventory} = \frac{\text{Average Inventory}}{\text{Average Daily Cost of Goods Sold}}$$

$$\text{Dell: } \frac{(\$1,051 + \$1,301) \div 2}{\$137.3^*} = 8.6 \text{ days}$$

$$\text{HP: } \frac{(\$6,128 + \$6,466) \div 2}{\$263.3^{**}} = 23.9 \text{ days}$$

* \$137.3 = \$50,098 ÷ 365 days

** \$263.3 = \$96,089 ÷ 365 days

- b. Dell has a much higher inventory turnover ratio than does HP (42.6 vs. 15.3). Likewise, Dell has a much smaller number of days' sales in inventory (8.6 days vs. 23.9 days). These significant differences are a result of Dell's make-to-order strategy. Dell has successfully developed a manufacturing process that is able to fill a customer order quickly. As a result, Dell does not pre-build as many computers to inventory. HP, in contrast, pre-builds computers, printers, and other equipment to be sold by retail stores and other retail channels. In this industry, there is great obsolescence risk in holding computers in inventory. New technology can make an inventory of computers difficult to sell; therefore, inventory is costly and risky. Dell's operating strategy is considered revolutionary and is now being adopted by many both in and out of the computer industry.

Ex. 14–13 (Man)

a.
$$\text{Ratio of Liabilities to Stockholders' Equity} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$\text{Dec. 31, 2014: } \frac{\$2,124,000}{\$2,360,000} = 0.9$$

$$\text{Dec. 31, 2013: } \frac{\$2,200,000}{\$2,000,000} = 1.1$$

b.
$$\text{Number of Times Bond Interest Charges Are Earned} = \frac{\text{Income Before Income Tax + Interest Expense}}{\text{Interest Expense}}$$

$$\text{Dec. 31, 2014: } \frac{\$480,000 + \$120,000^*}{\$120,000} = 5.0$$

$$\text{Dec. 31, 2013: } \frac{\$420,000 + \$140,000^{**}}{\$140,000} = 4.0$$

* $(\$1,000,000 + \$200,000) \times 10\% = \$120,000$

** $(\$1,200,000 + \$200,000) \times 10\% = \$140,000$

- c. Both the ratio of liabilities to stockholders' equity and the number of times bond interest charges were earned have improved from 2013 to 2014. These results are the combined result of a larger income before income taxes and lower serial bonds payable in the year 2014 compared to 2013.

Ex. 14–14 (Man)

a. **Ratio of Liabilities to Stockholders' Equity** =
$$\frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$\text{Hasbro: } \frac{\$2,477,806}{\$1,615,420} = 1.5$$

$$\text{Mattel, Inc.: } \frac{\$2,789,149}{\$2,628,584} = 1.1$$

b. **Number of Times Interest Charges Are Earned** =
$$\frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$\text{Hasbro: } \frac{\$397,752 + \$82,112}{\$82,112} = 5.8$$

$$\text{Mattel, Inc.: } \frac{\$684,863 + \$64,839}{\$64,839} = 11.6$$

- c. Both companies carry a moderate proportion of debt to the stockholders' equity, with Hasbro carrying slightly more debt than Mattel (1.5 and 1.1 times stockholders' equity). Therefore, the companies' debt as a percent of stockholders' equity is similar. Both companies also have very strong interest coverage; however, Mattel's ratio is stronger than Hasbro's. Together, these ratios indicate that both companies provide creditors with a margin of safety, and that earnings appear more than enough to make interest payments.

Ex. 14–15 (Man)

$$\text{a.} \quad \frac{\text{Ratio of Liabilities to Stockholders' Equity}}{\text{Total Liabilities}} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$\text{H.J. Heinz: } \frac{\$4,161,460 + \$3,078,128 + \$1,757,426}{\$3,108,962} = 2.9$$

$$\text{Hershey: } \frac{\$1,298,845 + \$1,541,825 + \$529,746}{\$902,316} = 3.7$$

$$\text{b.} \quad \frac{\text{Ratio of Fixed Assets to Long-Term Liabilities}}{\text{Fixed Assets (net)}} = \frac{\text{Long-Term Liabilities}}$$

$$\text{H.J. Heinz: } \frac{\$2,505,083}{\$4,835,554} = 0.5$$

$$\text{Hershey: } \frac{\$1,437,702}{\$2,071,571} = 0.7$$

- c. Hershey uses more debt than does H.J. Heinz. As a result, Hershey's total liabilities to stockholders' equity ratio is higher than H.J. Heinz's (3.7 vs. 2.9). H.J. Heinz has a lower ratio of fixed assets to long-term liabilities than Hershey. This ratio divides the property, plant, and equipment (net) by the long-term debt. The ratio for H.J. Heinz is aggressive, with fixed assets covering only 50% of the long-term debt. That is, the creditors of H.J. Heinz have 50 cents of property, plant, and equipment covering every dollar of long-term debt. The same ratio for Hershey shows fixed assets covering 70% of the long-term debt. That is, Hershey's creditors have \$0.70 of property, plant, and equipment covering every dollar of long-term debt. This would suggest that Hershey has slightly stronger creditor protection and borrowing capacity than does H.J. Heinz.

Ex. 14–16 (Man)

a.
$$\text{Ratio of Net Sales to Total Assets} = \frac{\text{Net Sales}}{\text{Average Total Assets}}$$

$$\text{YRC Worldwide: } \frac{\$4,334,640}{\$2,812,504} = 1.5$$

$$\text{Union Pacific: } \frac{\$16,965,000}{\$42,636,000} = 0.4$$

$$\text{C.H. Robinson Worldwide Inc.: } \frac{\$9,274,305}{\$1,914,974} = 4.8$$

- b. The ratio of net sales to assets measures the number of sales dollars earned for each dollar of assets. The greater the number of sales dollars earned for every dollar of assets, the more efficient a firm is in using assets. Thus, the ratio is a measure of the efficiency in using assets. The three companies are different in their efficiency in using assets, because they are different in the nature of their operations. Union Pacific earns only 40 cents for every dollar of assets. This is because Union Pacific is very asset intensive. That is, Union Pacific must invest in locomotives, railcars, terminals, tracks, right-of-way, and information systems in order to earn revenues. These investments are significant. YRC Worldwide is able to earn \$1.50 for every dollar of assets, and thus is able to earn more revenue for every dollar of assets than the railroad. This is because the motor carrier invests in trucks, trailers, and terminals, which require less investment per dollar of revenue than does the railroad. Moreover, the motor carrier does not invest in the highway system, because the government owns the highway system. Thus, the motor carrier has no investment in the transportation network itself, unlike the railroad. C.H. Robinson Worldwide Inc., the transportation arranger, hires transportation services from motor carriers and railroads, but does not own these assets itself. The transportation arranger has assets in accounts receivable and information systems but does not require transportation assets; thus, it is able to earn the highest revenue per dollar of assets.

Note to Instructors: Students may wonder how asset-intensive companies overcome their asset efficiency disadvantages to competitors with better asset efficiencies, as in the case between railroads and motor carriers. Asset efficiency is part of the financial equation; the other part is the profit margin made on each dollar of sales. Thus, companies with high asset efficiency often operate on thinner margins than do companies with lower asset efficiency. For example, the motor carrier must pay highway taxes, which lowers its operating margins when compared to railroads that own their right-of-way, and thus do not have the tax expense of the highway. While not required in this exercise, the railroad has the highest profit margins, the motor carrier is in the middle, while the transportation arranger operates on very thin margins.

Ex. 14–17 (Man)

a.
$$\text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$2014: \frac{\$372,000 + \$180,000^1}{\$4,600,000^2} = 12.0\%$$

$$2013: \frac{\$492,000 + \$180,000^3}{\$4,200,000^4} = 16.0\%$$

¹ \$2,250,000 × 8%

² (\$4,800,000 + \$4,400,000) ÷ 2

³ \$2,250,000 × 8%

⁴ (\$4,400,000 + \$4,000,000) ÷ 2

$$\text{Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

$$2014: \frac{\$372,000}{\$2,148,000^*} = 17.3\%$$

$$2013: \frac{\$492,000}{\$1,736,000^{**}} = 28.3\%$$

* (\$2,324,000 + \$1,972,000) ÷ 2

** (\$1,972,000 + \$1,500,000) ÷ 2

$$\text{Rate Earned on Common Stockholders' Equity} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

$$2014: \frac{\$372,000 - \$20,000^1}{\$1,648,000^2} = 21.4\%$$

$$2013: \frac{\$492,000 - \$20,000^3}{\$1,236,000^4} = 38.2\%$$

¹ \$500,000 × 4%

² (\$1,824,000 + \$1,472,000) ÷ 2

³ \$500,000 × 4%

⁴ (\$1,472,000 + \$1,000,000) ÷ 2

- b. The profitability ratios indicate that Robinson Inc.'s profitability has deteriorated. Most of this change is from net income falling from \$492,000 in 2013 to \$372,000 in 2014. Since the rate of return on assets exceeds this amount in both years, there is positive leverage from the use of debt. However, this leverage is greater in 2013 because the rate of return on assets exceeds the cost of debt by a greater amount in 2013.

Ex. 14–18 (Man)

$$\text{a. Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$\text{Fiscal Year 3: } \frac{\$567,600 + \$18,300}{(\$4,981,100 + \$4,648,900) \div 2} = 12.2\%$$

$$\text{Fiscal Year 2: } \frac{\$479,500 + \$22,200}{(\$4,648,900 + \$4,356,500) \div 2} = 11.1\%$$

$$\text{b. Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

$$\text{Fiscal Year 3: } \frac{\$567,600}{(\$3,304,700 + \$3,116,600) \div 2} = 17.7\%$$

$$\text{Fiscal Year 2: } \frac{\$479,500}{(\$3,116,600 + \$2,735,100) \div 2} = 16.4\%$$

- c. Both the rate earned on total assets and the rate earned on stockholders' equity have increased over the two-year period. The rate earned on total assets increased from 11.1% to 12.2%, and the rate earned on stockholders' equity increased from 16.4% to 17.7%. The rate earned on stockholders' equity exceeds the rate earned on total assets due to the positive use of leverage.
- d. During fiscal Year 3, Polo Ralph Lauren's results were strong compared to the industry average. The rate earned on total assets for Polo Ralph Lauren was more than the industry average (12.2% vs. 8.0%). The rate earned on stockholders' equity was more than the industry average (17.7% vs. 10.0%). These relationships suggest that Polo Ralph Lauren has more leverage than the industry, on average.

Ex. 14–19 (Man)

a.
$$\text{Ratio of Fixed Assets to Long-Term Liabilities} = \frac{\text{Fixed Assets (net)}}{\text{Long-Term Liabilities}}$$

$$\frac{\$3,200,000}{\$2,000,000} = 1.6$$

b.
$$\text{Ratio of Liabilities to Stockholders' Equity} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$\frac{\$3,000,000}{\$5,000,000} = 0.6$$

c.
$$\text{Ratio of Net Sales to Assets} = \frac{\text{Net Sales}}{\text{Average Total Assets (excluding long-term investments)}}$$

$$\frac{\$18,900,000}{\$4,500,000^*} = 4.2$$

* $[(\$7,000,000 + \$8,000,000) \div 2] - \$3,000,000$. The end-of-period total assets are equal to the sum of total liabilities (\$3,000,000) and stockholders' equity (\$5,000,000).

d.
$$\text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$\frac{\$930,000 + \$120,000^*}{\$7,500,000^{**}} = 14.0\%$$

* $\$2,000,000 \times 6\%$

** $(\$7,000,000 + \$8,000,000) \div 2$

e.
$$\text{Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

$$\frac{\$930,000}{\$4,785,000^*} = 19.4\%$$

* $[(\$1,570,000 + \$2,000,000 + \$1,000,000) + \$5,000,000] \div 2$

f.
$$\text{Rate Earned on Common Stockholders' Equity} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

$$\frac{\$930,000 - \$100,000^*}{\$3,785,000^{**}} = 21.9\%$$

* $(\$1,000,000 \div \$100) \times \$10$

** $[(\$2,000,000 + \$1,570,000) + (\$2,000,000 + \$2,000,000)] \div 2$

Ex. 14–20 (Man)

a.
$$\frac{\text{Number of Times Bond Interest Charges Are Earned}}{\text{Interest Expense}} = \frac{\text{Income Before Income Tax + Interest Expense}}{\text{Interest Expense}}$$

$$\frac{\$3,000,000 + \$400,000^*}{\$400,000} = 8.5 \text{ times}$$

* \$5,000,000 bonds payable × 8%

b.
$$\frac{\text{Number of Times Preferred Dividends Are Earned}}{\text{Preferred Dividends}} = \frac{\text{Net Income}}{\text{Preferred Dividends}}$$

$$\frac{\$1,800,000^*}{\$200,000^{**}} = 9.0 \text{ times}$$

* \$3,000,000 income before income tax – \$1,200,000 income taxes

** (\$2,500,000 ÷ \$50 par value per share) × \$4

c.
$$\frac{\text{Earnings per Share on Common Stock}}{\text{Common Stock Outstanding}} = \frac{\text{Net Income – Preferred Dividends}}{\text{Common Stock Outstanding}}$$

$$\frac{\$1,800,000 - \$200,000}{500,000 \text{ shares}} = \$3.20$$

d.
$$\frac{\text{Price-Earnings Ratio}}{\text{Earnings per Share}} = \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share}}$$

$$\frac{\$32.00}{\$3.20} = 10.0$$

e.
$$\frac{\text{Dividends per Share of Common Stock}}{\text{Shares of Common Stock Outstanding}} = \frac{\text{Dividends on Common Stock}}{\text{Shares of Common Stock Outstanding}}$$

$$\frac{\$1,200,000}{500,000 \text{ shares}^*} = \$2.40$$

* \$5,000,000 ÷ \$10 par value per share

f.
$$\text{Dividend Yield} = \frac{\text{Dividends per Share of Common Stock}}{\text{Market Price per Share of Common Stock}}$$

$$\frac{\$2.40}{\$32.00} = 7.5\%$$

Ex. 14–21 (Man)

a.
$$\text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$$

$$\frac{\$1,750,000 - \$250,000^*}{500,000^{**} \text{ shares}} = \$3.00$$

* $(\$2,500,000 \div \$40) \times \$4$

** $\$10,000,000 \div \20

b.
$$\text{Price-Earnings Ratio} = \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share of Common Stock}}$$

$$\frac{\$45.00}{\$3.00} = 15.0$$

c.
$$\text{Dividends per Share} = \frac{\text{Common Dividends}}{\text{Shares of Common Stock Outstanding}}$$

$$\frac{\$1,125,000}{500,000 \text{ shares}} = \$2.25$$

d.
$$\text{Dividend Yield} = \frac{\text{Dividends per Share of Common Stock}}{\text{Market Price per Share of Common Stock}}$$

$$\frac{\$2.25}{\$45.00} = 5.0\%$$

Ex. 14–22 (Man)

a.
$$\text{Price-Earnings Ratio} = \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share}}$$

$$\text{Deere \& Co.: } \frac{\$65.70}{\$4.40} = 14.9$$

$$\text{Google: } \frac{\$528.33}{\$27.72} = 19.1$$

$$\text{The Coca-Cola Company: } \frac{\$69.05}{\$5.37} = 12.9$$

$$\text{Dividend Yield} = \frac{\text{Dividends per Share of Common Stock}}{\text{Market Price per Share of Common Stock}}$$

$$\text{Deere \& Co.: } \frac{\$1.16}{\$65.70} = 1.8\%$$

$$\text{Google: } \frac{\$0.00}{\$528.33} = 0.0\%$$

$$\text{The Coca-Cola Company: } \frac{\$1.88}{\$69.05} = 2.7\%$$

- b. Coca-Cola has a large dividend yield, but the smallest price-earnings ratio. Stock market participants value Coca-Cola common stock on the basis of its dividend. The dividend is an attractive yield at this date. Because of this attractive yield, stock market participants do not expect the share price to grow significantly, hence the low price-earnings valuation. This is a typical pattern for companies that pay high dividends. Google shows the opposite extreme. Google pays no dividend, and thus has no dividend yield. However, Google has the largest price-earnings ratio of the three companies. Stock market participants are expecting a return on their investment from appreciation in the stock price. Deere & Co. is priced in between the other two companies. Deere & Co has a moderate dividend, producing a yield of 1.8%. The price-earnings ratio is 14.9. Thus, Deere & Co. is expected to produce shareholder returns through a combination of some share price appreciation and a moderate dividend.

Appendix Ex. 14–23 (Man)**a. Earnings per share on income before extraordinary items:**

| | |
|--|---------------------------|
| Net income..... | \$4,000,000 |
| Less gain on condemnation..... | (800,000) |
| Plus loss from flood damage..... | <u>400,000</u> |
| Income before extraordinary items..... | <u><u>\$3,600,000</u></u> |

$$\text{Earnings Before Extraordinary Items per Share on Common Stock} = \frac{\text{Income Before Extraordinary Items} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$$

$$\frac{\$3,600,000 - \$200,000^*}{500,000 \text{ shares}} = \$6.80 \text{ per share}$$

* 100,000 shares × \$2.00 per share

$$\text{b. Earnings per Share on Common Stock} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$$

$$\frac{\$4,000,000 - \$200,000}{500,000 \text{ shares}} = \$7.60 \text{ per share}$$

Appendix Ex. 14–24 (Man)

- | | |
|-------|-------|
| a. NR | e. NR |
| b. E | f. NR |
| c. E | g. NR |
| d. NR | |

Appendix Ex. 14–25 (Man)

a.

| CRUZ, INC. Partial Income Statement For the Year Ended December 31, 2014 | |
|---|-------------|
| Income from continuing operations before income tax | \$1,000,000 |
| Income tax expense* | 400,000 |
| Income from continuing operations | \$ 600,000 |
| Loss on discontinued operations | 240,000 |
| Income before extraordinary item | \$ 360,000 |
| Extraordinary item: | |
| Loss due to hurricane | 140,000 |
| Net income | \$ 220,000 |

* \$1,000,000 × 40%

b.

| CRUZ, INC. Partial Income Statement For the Year Ended December 31, 2014 | |
|---|----------------------|
| Earnings per common share: | |
| Income from continuing operations | \$30.00 ¹ |
| Loss from discontinued operations | 12.00 ² |
| Income before extraordinary item | \$18.00 |
| Extraordinary item: | |
| Loss due to hurricane | 7.00 ³ |
| Net income | \$11.00 |

¹ \$30.00 = \$600,000 ÷ 20,000

² \$12.00 = \$240,000 ÷ 20,000

³ \$7.00 = \$140,000 ÷ 20,000

Appendix Ex. 14–26 (Man)

- a. Colston Company reported this item correctly in the financial statements. This item is an error in the recognition, measurement, or presentation in the financial statements, which is correctly handled by retroactively restating prior-period earnings.
- b. Colston Company did not report this item correctly. This item is a change from one generally accepted accounting principle to another, which is correctly handled by retroactively restating prior-period earnings. In this case, Colston reports this change cumulatively in the current period, which is incorrect.

PROBLEMS**Prob. 14–1A (Man)**

1.

| LINDELL COMPANY Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|--|--------------------|------------------|---------------------|---------------|
| | 2014 | 2013 | Increase (Decrease) | |
| | | | Amount | Percent |
| Sales | \$1,092,500 | \$950,000 | \$142,500 | 15.0% |
| Sales returns and allowances | 57,500 | 50,000 | 7,500 | 15.0% |
| Net sales | \$1,035,000 | \$900,000 | \$135,000 | 15.0% |
| Cost of goods sold | 625,000 | 500,000 | 125,000 | 25.0% |
| Gross profit | \$ 410,000 | \$400,000 | \$ 10,000 | 2.5% |
| Selling expenses | 153,600 | 120,000 | 33,600 | 28.0% |
| Administrative expenses | 97,600 | 80,000 | 17,600 | 22.0% |
| Total operating expenses | \$ 251,200 | \$200,000 | \$ 51,200 | 25.6% |
| Income from operations | \$ 158,800 | 200,000 | \$ (41,200) | –20.6% |
| Other income | 15,000 | 10,000 | 5,000 | 50.0% |
| Income before income tax | \$ 173,800 | \$210,000 | \$ (36,200) | –17.2% |
| Income tax expense | 23,000 | 20,000 | 3,000 | 15.0% |
| Net income | \$ 150,800 | \$190,000 | \$ (39,200) | –20.6% |

2. Net income has declined from 2013 to 2014. Net sales have increased by 15.0%; however, the cost of goods sold has increased by 25.0%, causing the gross profit to increase at a slower pace than net sales. In addition, total operating expenses have increased at a faster rate than sales (25.6% increase vs. 15.0% net sales increase). Increases in costs and expenses that are higher than the increase in sales have caused the net income to decline by 20.6%.

Prob. 14–2A (Man)

1.

| KASAY COMPANY Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|--|------------------|---------------|------------------|---------------|
| | 2014 | | 2013 | |
| | Amount | Percent | Amount | Percent |
| Sales | \$922,500 | 102.5% | \$820,000 | 102.5% |
| Sales returns and allowances | 22,500 | 2.5% | 20,000 | 2.5% |
| Net sales | \$900,000 | 100.0% | \$800,000 | 100.0% |
| Cost of goods sold | 360,000 | 40.0% | 340,000 | 42.5% |
| Gross profit | \$540,000 | 60.0% | \$460,000 | 57.5% |
| Selling expenses | 216,000 | 24.0% | 176,000 | 22.0% |
| Administrative expenses | 81,000 | 9.0% | 72,000 | 9.0% |
| Total operating expenses | \$297,000 | 33.0% | \$248,000 | 31.0% |
| Income from operations | \$243,000 | 27.0% | \$212,000 | 26.5% |
| Other income | 135,000 | 15.0% | 92,000 | 11.5% |
| Income before income tax | \$378,000 | 42.0% | \$304,000 | 38.0% |
| Income tax expense | 270,000 | 30.0% | 240,000 | 30.0% |
| Net income | \$108,000 | 12.0% | \$ 64,000 | 8.0% |

2. The vertical analysis indicates that the costs other than selling expenses (cost of goods sold and administrative expenses) improved as a percentage of sales. As a result, net income as a percentage of sales increased from 8.0% to 12.0%. The sales promotion campaign appears to have been successful. While selling expenses as a percent of sales increased slightly (2.0%), the increased cost was more than made up for by increased sales.

Prob. 14–3A (Man)

1. a. **Working Capital = Current Assets – Current Liabilities**

$$\$1,650,000 - \$750,000 = \$900,000$$

b. **Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$**

$$\frac{\$1,650,000}{\$750,000} = 2.2$$

c. **Quick Ratio = $\frac{\text{Quick Assets}}{\text{Current Liabilities}}$**

$$\frac{\$412,500 + \$187,500 + \$300,000}{\$750,000} = 1.2$$

2.

| Transaction | Working Capital | Current Ratio | Quick Ratio | Supporting Data | | |
|-------------|-----------------|---------------|-------------|-----------------|--------------|---------------------|
| | | | | Current Assets | Quick Assets | Current Liabilities |
| a. | \$ 900,000 | 2.2 | 1.2 | \$1,650,000 | \$ 900,000 | \$750,000 |
| b. | 900,000 | 2.4 | 1.2 | 1,525,000 | 775,000 | 625,000 |
| c. | 900,000 | 2.0 | 1.0 | 1,760,000 | 900,000 | 860,000 |
| d. | 900,000 | 2.4 | 1.2 | 1,550,000 | 800,000 | 650,000 |
| e. | 750,000 | 1.8 | 1.0 | 1,650,000 | 900,000 | 900,000 |
| f. | 900,000 | 2.2 | 1.2 | 1,650,000 | 900,000 | 750,000 |
| g. | 1,125,000 | 2.5 | 1.5 | 1,875,000 | 1,125,000 | 750,000 |
| h. | 900,000 | 2.2 | 1.2 | 1,650,000 | 900,000 | 750,000 |
| i. | 1,500,000 | 3.0 | 2.0 | 2,250,000 | 1,500,000 | 750,000 |
| j. | 900,000 | 2.2 | 1.2 | 1,650,000 | 890,000 | 750,000 |

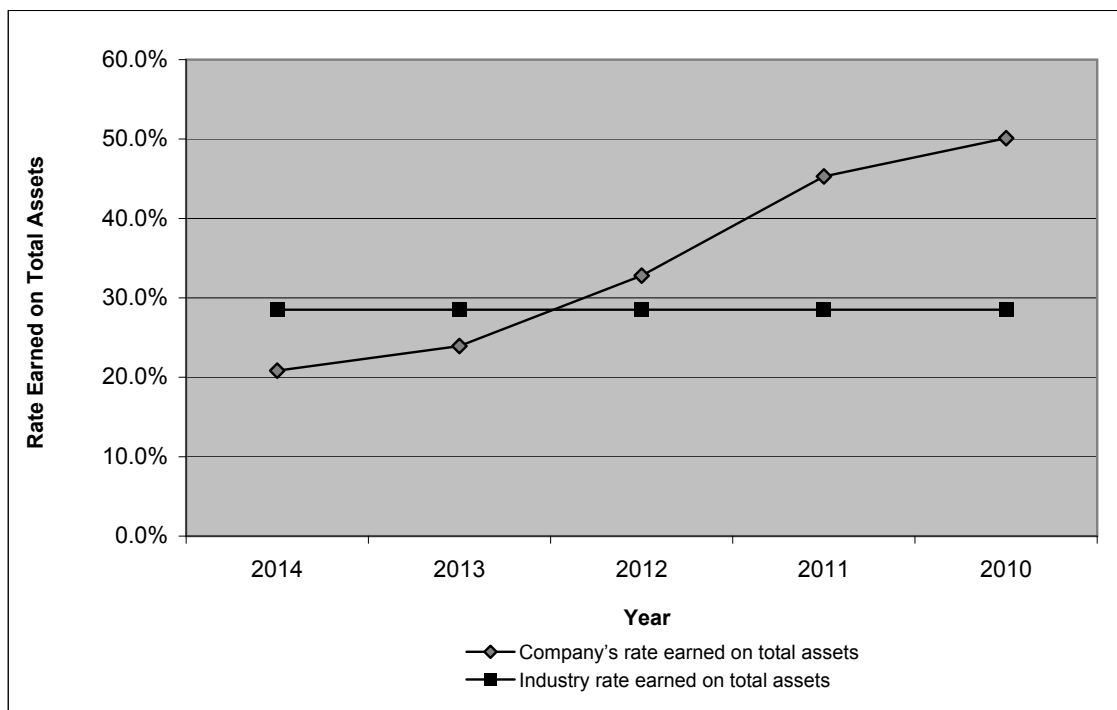
Prob. 14-4A (Man)

1. Working Capital: $\$1,100,000 - \$440,000 = \$660,000$

| Ratio | Numerator | Denominator | Calculated Value |
|--|----------------------------------|--------------------------------------|------------------|
| 2. Current ratio | \$1,100,000 | \$440,000 | 2.5 |
| 3. Quick ratio | \$880,000 | \$440,000 | 2.0 |
| 4. Accounts receivable turnover | \$1,200,000 | $(\$130,000 + \$110,000) \div 2$ | 10.0 |
| 5. Number of days' sales in receivables | $(\$130,000 + \$110,000) \div 2$ | $\$1,200,000 \div 365$ | 36.5 |
| 6. Inventory turnover | \$500,000 | $(\$67,000 + \$58,000) \div 2$ | 8.0 |
| 7. Number of days' sales in inventory | $(\$67,000 + \$58,000) \div 2$ | $\$500,000 \div 365$ | 45.6 |
| 8. Ratio of fixed assets to long-term liabilities | \$1,320,000 | \$1,100,000 | 1.2 |
| 9. Ratio of liabilities to stockholders' equity | \$1,540,000 | \$3,230,000 | 0.5 |
| 10. Number of times interest charges are earned | $\$380,000 + \$66,000$ | \$66,000 | 6.8 |
| 11. Number of times preferred dividends are earned | \$300,000 | \$15,000 | 20.0 |
| 12. Ratio of net sales to assets | \$1,200,000 | $(\$2,420,000 + \$2,155,000) \div 2$ | 0.5 or 52.5% |
| 13. Rate earned on total assets | $\$300,000 + \$66,000$ | $(\$4,770,000 + \$4,355,000) \div 2$ | 8.0% |
| 14. Rate earned on stockholders' equity | \$300,000 | $(\$3,230,000 + \$2,955,000) \div 2$ | 9.7% |
| 15. Rate earned on common stockholders' equity | $\$300,000 - \$15,000$ | $(\$3,030,000 + \$2,755,000) \div 2$ | 9.9% |
| 16. Earnings per share on common stock | $\$300,000 - \$15,000$ | 10,000 | \$28.50 |
| 17. Price-earnings ratio | 71.25 | 28.50 | 2.5 |
| 18. Dividends per share of common stock | \$10,000 | 10,000 | \$1.00 |
| 19. Dividend yield | \$1.00 | \$71.25 | 1.4% |

Prob. 14-5A (Man)

1. a.



$$\text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$2014: \frac{\$889,453}{\$4,270,764} = 20.8\%$$

$$2011: \frac{\$1,379,000}{\$3,044,250} = 45.3\%$$

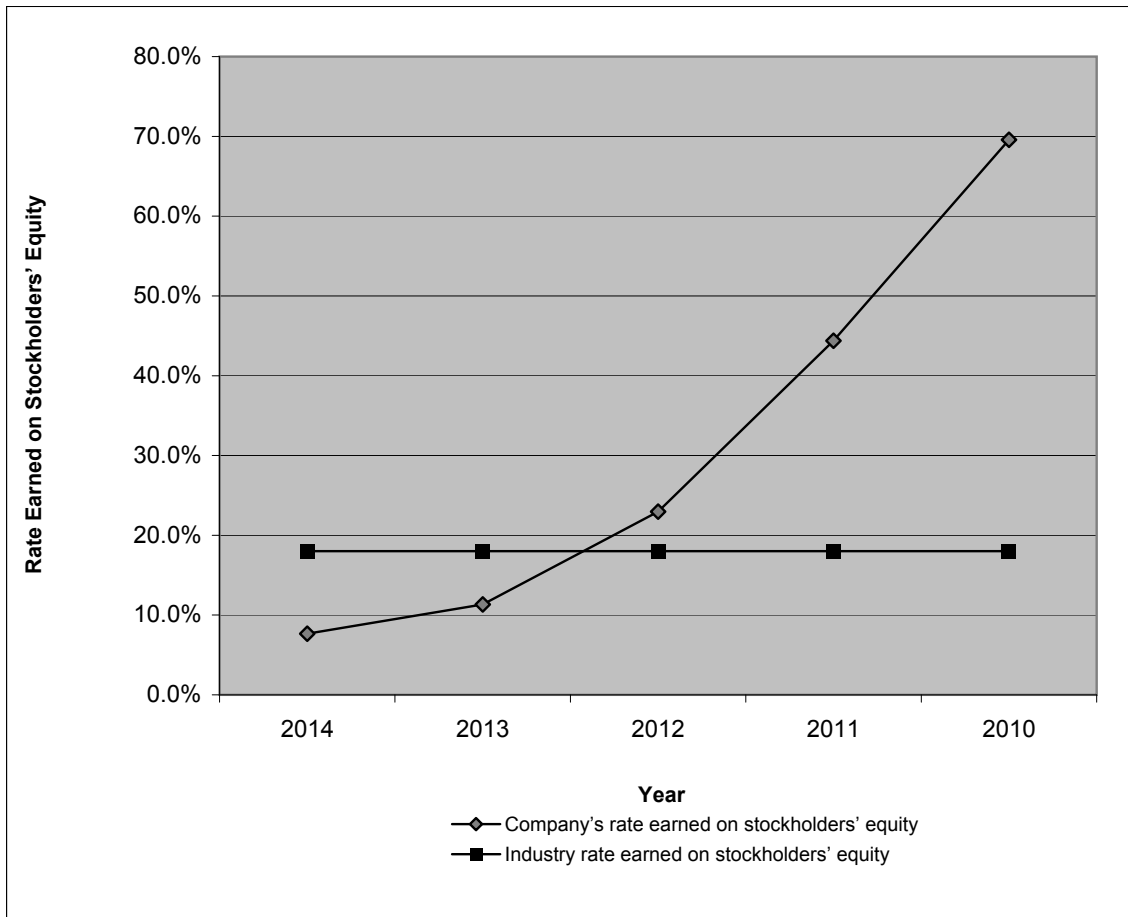
$$2013: \frac{\$939,979}{\$3,928,396} = 23.9\%$$

$$2010: \frac{\$1,240,000}{\$2,475,000} = 50.1\%$$

$$2012: \frac{\$1,159,341}{\$3,535,472} = 32.8\%$$

Prob. 14–5A (Man) (Continued)

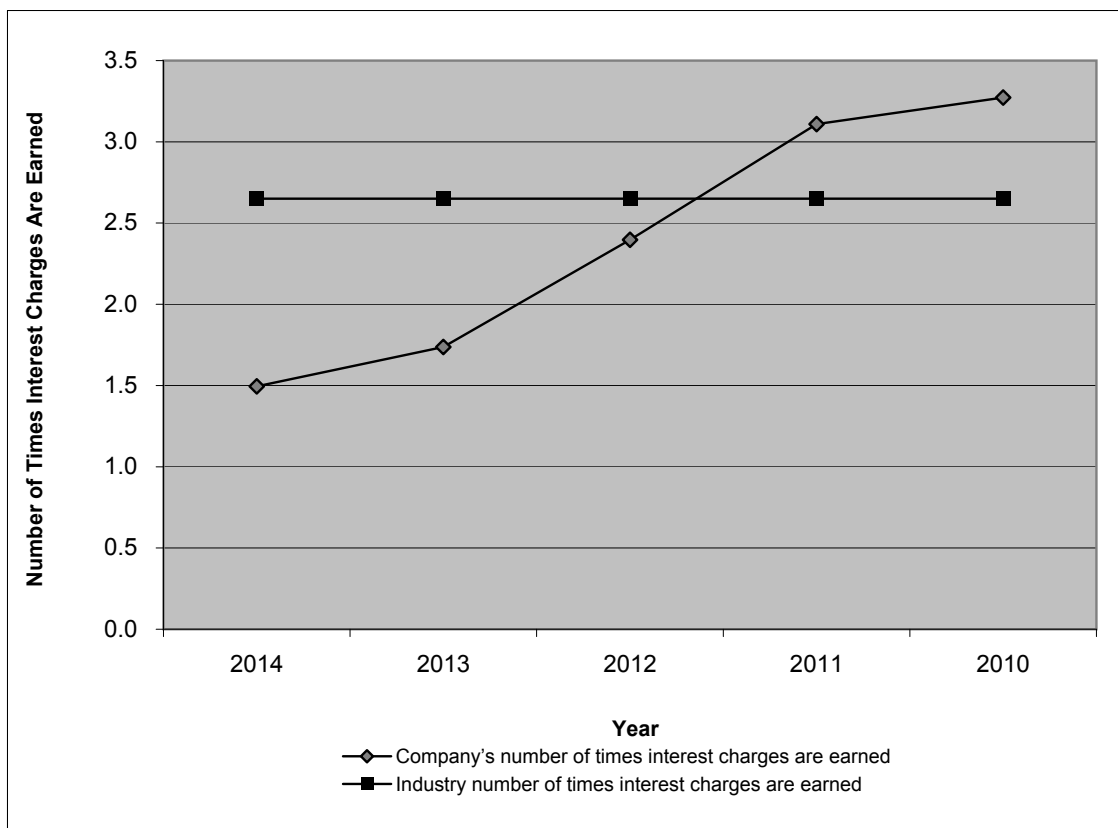
1. b.



| | |
|---|---|
| $\text{Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$ | |
| <p>2014: $\frac{\\$273,406}{\\$3,569,855} = 7.7\%$</p> <p>2013: $\frac{\\$367,976}{\\$3,249,164} = 11.3\%$</p> <p>2012: $\frac{\\$631,176}{\\$2,749,588} = 23.0\%$</p> | <p>2011: $\frac{\\$884,000}{\\$1,992,000} = 44.4\%$</p> <p>2010: $\frac{\\$800,000}{\\$1,150,000} = 69.6\%$</p> |

Prob. 14-5A (Man) (Continued)

1. c.



$$\text{Number of Times Interest Charges Are Earned} = \frac{\text{Net Income} + \text{Income Tax Expense} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$2014: \frac{\$921,202}{\$616,047} = 1.5$$

$$2011: \frac{\$1,539,000}{\$495,000} = 3.1$$

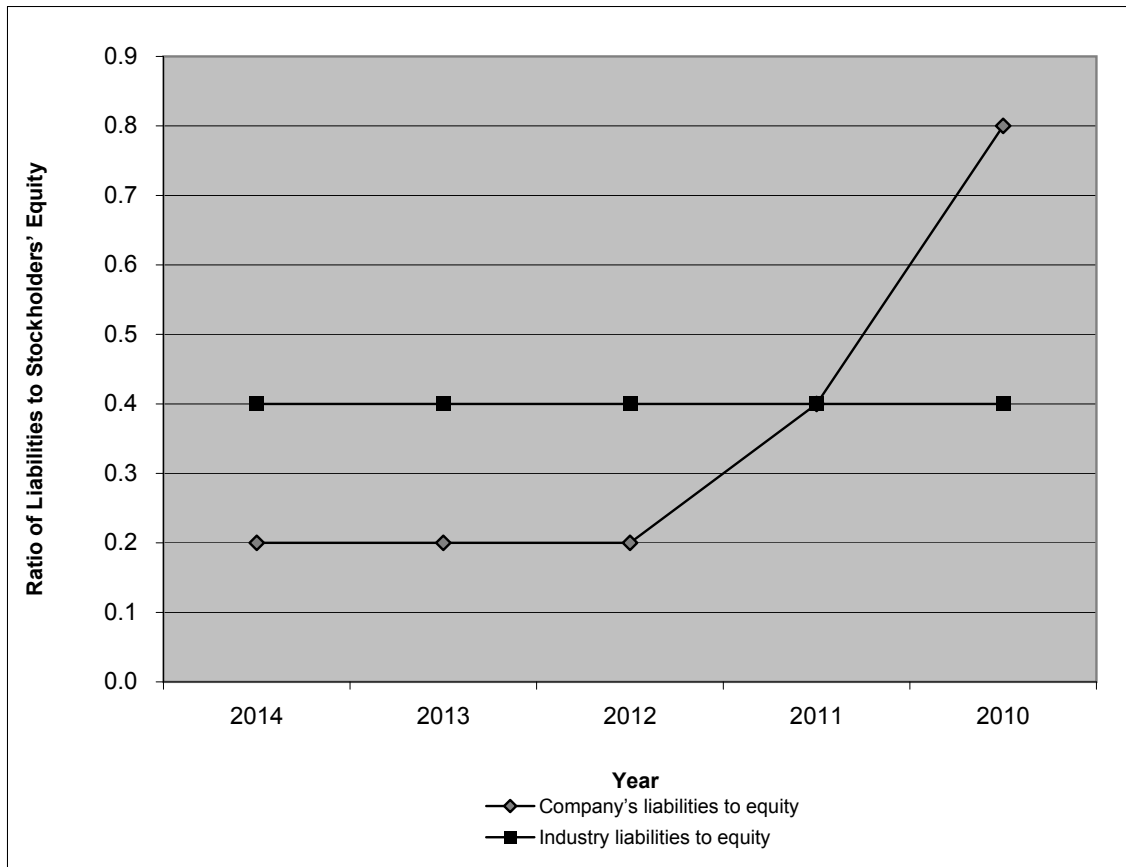
$$2013: \frac{\$993,539}{\$572,003} = 1.7$$

$$2010: \frac{\$1,440,000}{\$440,000} = 3.3$$

$$2012: \frac{\$1,266,061}{\$528,165} = 2.4$$

Prob. 14–5A (Man) (Continued)

1. d.



$$\text{Ratio of Liabilities to Stockholders' Equity} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$2014: \frac{\$710,621}{\$3,706,557} = 0.2$$

$$2011: \frac{\$904,500}{\$2,434,000} = 0.4$$

$$2013: \frac{\$691,198}{\$3,433,152} = 0.2$$

$$2010: \frac{\$1,200,000}{\$1,550,000} = 0.8$$

$$2012: \frac{\$667,267}{\$3,065,176} = 0.2$$

Note: The total liabilities are the difference between the total assets and total stockholders' equity ending balances.

Prob. 14–5A (Man) (Concluded)

2. Both the rate earned on total assets and the rate earned on stockholders' equity have been moving in a negative direction in the last five years. Both measures have moved below the industry average over the last two years. The cause of this decline is driven by a rapid decline in earnings. The use of debt can be seen from the ratio of liabilities to stockholders' equity. The ratio has declined over the time period and has declined below the industry average. Thus, the level of debt relative to the stockholders' equity has gradually improved over the five years. The number of times interest charges were earned has been falling below the industry average for several years. This is the result of low profitability combined with high interest costs. The number of times interest is earned has fallen to a dangerously low level in 2014.

Prob. 14–1B (Man)

1.

| MACKLIN INC. Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|---|-----------|-----------|---------------------|---------|
| | 2014 | 2013 | Increase (Decrease) | |
| | | | Amount | Percent |
| Sales | \$936,000 | \$720,000 | \$216,000 | 30.0% |
| Sales returns and allowances | 26,000 | 20,000 | 6,000 | 30.0% |
| Net sales | \$910,000 | \$700,000 | \$210,000 | 30.0% |
| Cost of goods sold | 441,000 | 350,000 | 91,000 | 26.0% |
| Gross profit | \$469,000 | \$350,000 | \$119,000 | 34.0% |
| Selling expenses | 139,150 | 115,000 | 24,150 | 21.0% |
| Administrative expenses | 99,450 | 85,000 | 14,450 | 17.0% |
| Total operating expenses | \$238,600 | \$200,000 | \$ 38,600 | 19.3% |
| Income from operations | \$230,400 | \$150,000 | \$ 80,400 | 53.6% |
| Other income | 65,000 | 50,000 | 15,000 | 30.0% |
| Income before income tax | \$295,400 | \$200,000 | \$ 95,400 | 47.7% |
| Income tax expense | 65,000 | 50,000 | 15,000 | 30.0% |
| Net income | \$230,400 | \$150,000 | \$ 80,400 | 53.6% |

2. The profitability has significantly improved from 2013 to 2014. Net sales have increased by 30% over the 2013 base year. However, the cost of goods sold, selling expenses, and administrative expenses grew at a slower rate. Increasing sales combined with costs that increase at a slower rate results in strong earnings growth. In this case, net income grew 53.6% over the base year.

Prob. 14-2B (Man)

1.

| FIELDER INDUSTRIES INC. Comparative Income Statement For the Years Ended December 31, 2014 and 2013 | | | | |
|--|--------------------|---------------|--------------------|---------------|
| | 2014 | | 2013 | |
| | Amount | Percent | Amount | Percent |
| Sales | \$1,325,000 | 101.9% | \$1,200,000 | 101.7% |
| Sales returns and allowances | 25,000 | 1.9% | 20,000 | 1.7% |
| Net sales | \$1,300,000 | 100.0% | \$1,180,000 | 100.0% |
| Cost of goods sold | 682,500 | 52.5% | 613,600 | 52.0% |
| Gross profit | \$ 617,500 | 47.5% | \$ 566,400 | 48.0% |
| Selling expenses | 260,000 | 20.0% | 188,800 | 16.0% |
| Administrative expenses | 169,000 | 13.0% | 177,000 | 15.0% |
| Total operating expenses | \$ 429,000 | 33.0% | \$ 365,800 | 31.0% |
| Income from operations | \$ 188,500 | 14.5% | \$ 200,600 | 17.0% |
| Other income | 78,000 | 6.0% | 70,800 | 6.0% |
| Income before income tax | \$ 266,500 | 20.5% | \$ 271,400 | 23.0% |
| Income tax expense | 117,000 | 9.0% | 106,200 | 9.0% |
| Net income | \$ 149,500 | 11.5% | \$ 165,200 | 14.0% |

2. The net income as a percent of sales has declined. All the costs and expenses, other than selling expenses, have maintained their approximate cost as a percent of sales relationship between 2013 and 2014. Selling expenses as a percent of sales, however, have grown from 16.0% to 20.0% of sales. Apparently, the new advertising campaign has not been successful. The increased expense has not produced sufficient sales to maintain relative profitability. Thus, selling expenses as a percent of sales have increased.

Prob. 14–3B (Man)

1. a.
- Working Capital = Current Assets – Current Liabilities**

$$\$3,200,000 - \$2,000,000 = \$1,200,000$$

$$\text{b.} \quad \text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\frac{\$3,200,000}{\$2,000,000} = 1.6$$

$$\text{c.} \quad \text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\frac{\$800,000 + \$550,000 + \$850,000}{\$2,000,000} = 1.1$$

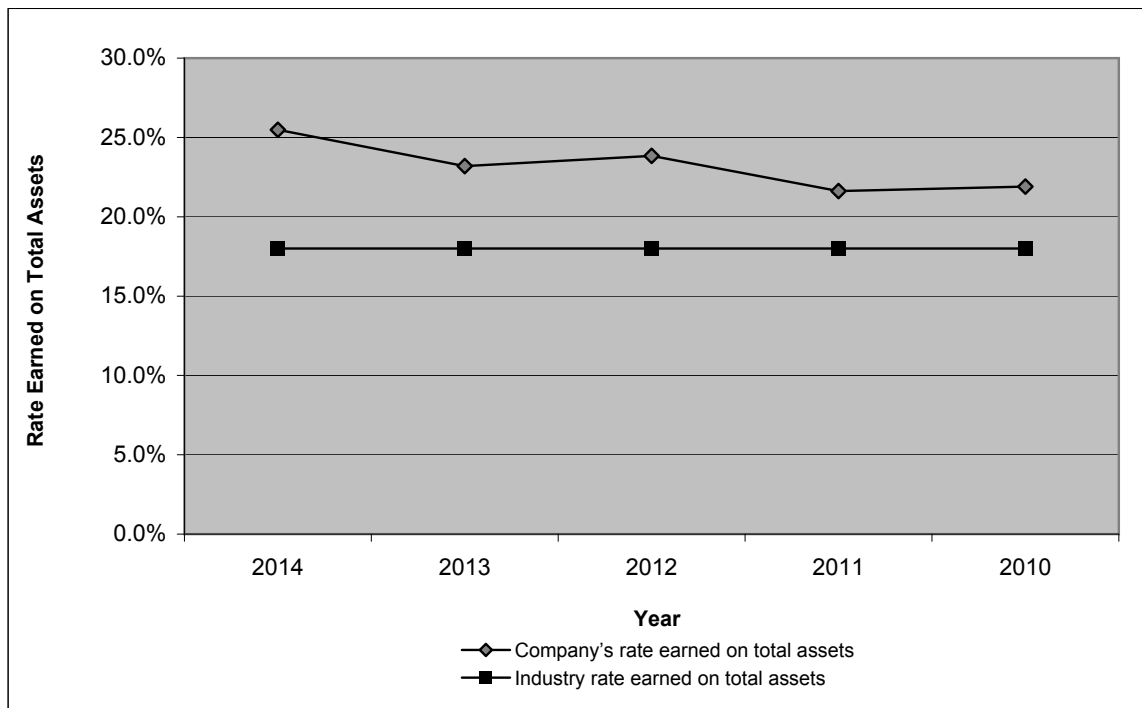
2.

| Transaction | Working Capital | Current Ratio | Quick Ratio | Supporting Data | | |
|-------------|-----------------|---------------|-------------|-----------------|--------------|---------------------|
| | | | | Current Assets | Quick Assets | Current Liabilities |
| a. | \$1,200,000 | 1.6 | 1.1 | \$3,200,000 | \$2,200,000 | \$2,000,000 |
| b. | 1,200,000 | 1.7 | 1.1 | 2,912,500 | 1,912,500 | 1,712,500 |
| c. | 1,200,000 | 1.5 | 0.9 | 3,600,000 | 2,200,000 | 2,400,000 |
| d. | 1,200,000 | 1.6 | 1.1 | 3,075,000 | 2,075,000 | 1,875,000 |
| e. | 875,000 | 1.4 | 0.9 | 3,200,000 | 2,200,000 | 2,325,000 |
| f. | 1,200,000 | 1.6 | 1.1 | 3,200,000 | 2,200,000 | 2,000,000 |
| g. | 2,200,000 | 2.1 | 1.6 | 4,200,000 | 3,200,000 | 2,000,000 |
| h. | 1,200,000 | 1.6 | 1.1 | 3,200,000 | 2,200,000 | 2,000,000 |
| i. | 3,200,000 | 2.6 | 2.1 | 5,200,000 | 4,200,000 | 2,000,000 |
| j. | 1,200,000 | 1.6 | 1.0 | 3,200,000 | 2,000,000 | 2,000,000 |

Prob. 14-4B (Man)

1. Working Capital: $\$3,690,000 - \$900,000 = \$2,790,000$

| Ratio | Numerator | Denominator | Calculated Value |
|--|------------------------------------|--------------------------------------|------------------|
| 2. Current ratio | \$3,690,000 | \$900,000 | 4.1 |
| 3. Quick ratio | \$2,250,000 | \$900,000 | 2.5 |
| 4. Accounts receivable turnover | \$10,000,000 | $(\$740,000 + \$510,000) \div 2$ | 16.0 |
| 5. Number of days' sales in receivables | $(\$740,000 + \$510,000) \div 2$ | $\$10,000,000 \div 365$ | 22.8 |
| 6. Inventory turnover | \$5,350,000 | $(\$1,190,000 + \$950,000) \div 2$ | 5.0 |
| 7. Number of days' sales in inventory | $(\$1,190,000 + \$950,000) \div 2$ | $\$5,350,000 \div 365$ | 73.0 |
| 8. Ratio of fixed assets to long-term liabilities | \$3,740,000 | \$1,700,000 | 2.2 |
| 9. Ratio of liabilities to stockholders' equity | \$2,600,000 | \$7,180,000 | 0.4 |
| 10. Number of times interest charges are earned | $\$1,130,000 + \$170,000$ | \$170,000 | 7.6 |
| 11. Number of times preferred dividends are earned | \$900,000 | \$45,000 | 20.0 |
| 12. Ratio of net sales to assets | 10,000,000 | $(\$7,430,000 + \$6,455,000) \div 2$ | 1.4 |
| 13. Rate earned on total assets | $\$900,000 + \$170,000$ | $(\$9,780,000 + \$8,755,000) \div 2$ | 11.5% |
| 14. Rate earned on stockholders' equity | \$900,000 | $(\$7,180,000 + \$6,375,000) \div 2$ | 13.3% |
| 15. Rate earned on common stockholders' equity | $\$900,000 - \$45,000$ | $(\$6,680,000 + \$5,875,000) \div 2$ | 13.6% |
| 16. Earnings per share on common stock | $\$900,000 - \$45,000$ | 100,000 | \$8.55 |
| 17. Price-earnings ratio | 119.70 | 8.55 | 14.0 |
| 18. Dividends per share of common stock | \$50,000 | 100,000 | \$0.50 |
| 19. Dividend yield | \$0.50 | \$119.70 | 0.4% |

Prob. 14–5B (Man)**1. a.**

$$\text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

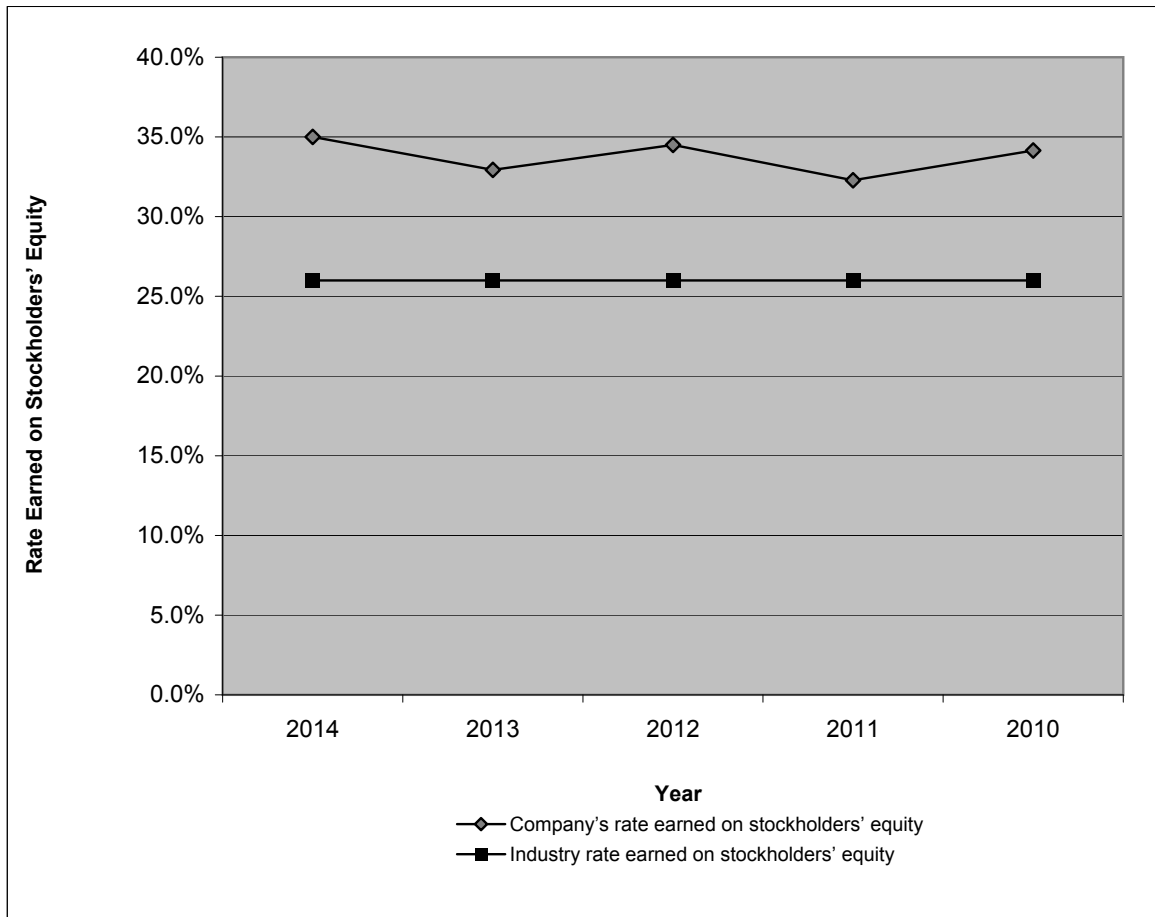
$$2014: \frac{\$6,623,780}{\$25,988,665} = 25.5\%$$

$$2011: \frac{\$2,458,000}{\$11,370,240} = 21.6\%$$

$$2013: \frac{\$4,606,056}{\$19,859,586} = 23.2\%$$

$$2010: \frac{\$1,900,000}{\$8,676,000} = 21.9\%$$

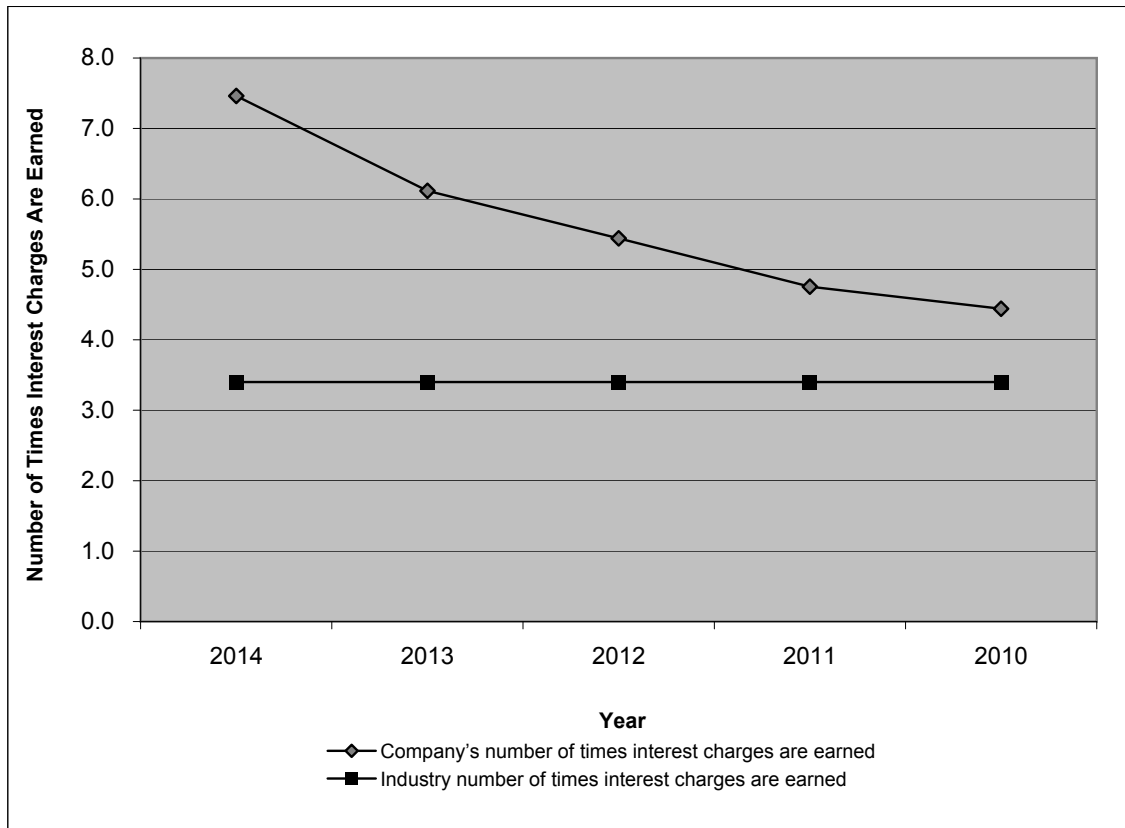
$$2012: \frac{\$3,540,600}{\$14,854,406} = 23.8\%$$

Prob. 14–5B (Man) (Continued)**1. b.**

| | = | |
|---|---|--|
| Rate Earned on Stockholders' Equity | | Net Income Average Total Stockholders' Equity |
| 2014: $\frac{\$5,571,720}{\$15,920,340} = 35.0\%$ | | 2011: $\frac{\$1,848,000}{\$5,724,000} = 32.3\%$ |
| 2013: $\frac{\$3,714,480}{\$11,277,240} = 32.9\%$ | | 2010: $\frac{\$1,400,000}{\$4,100,000} = 34.1\%$ |
| 2012: $\frac{\$2,772,000}{\$8,034,000} = 34.5\%$ | | |

Prob. 14-5B (Man) (Continued)

1. c.



$$\text{Number of Times Interest Charges Are Earned} = \frac{\text{Net Income} + \text{Income Tax Expense} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$2014: \frac{\$7,849,352}{\$1,052,060} = 7.5$$

$$2011: \frac{\$2,899,600}{\$610,000} = 4.8$$

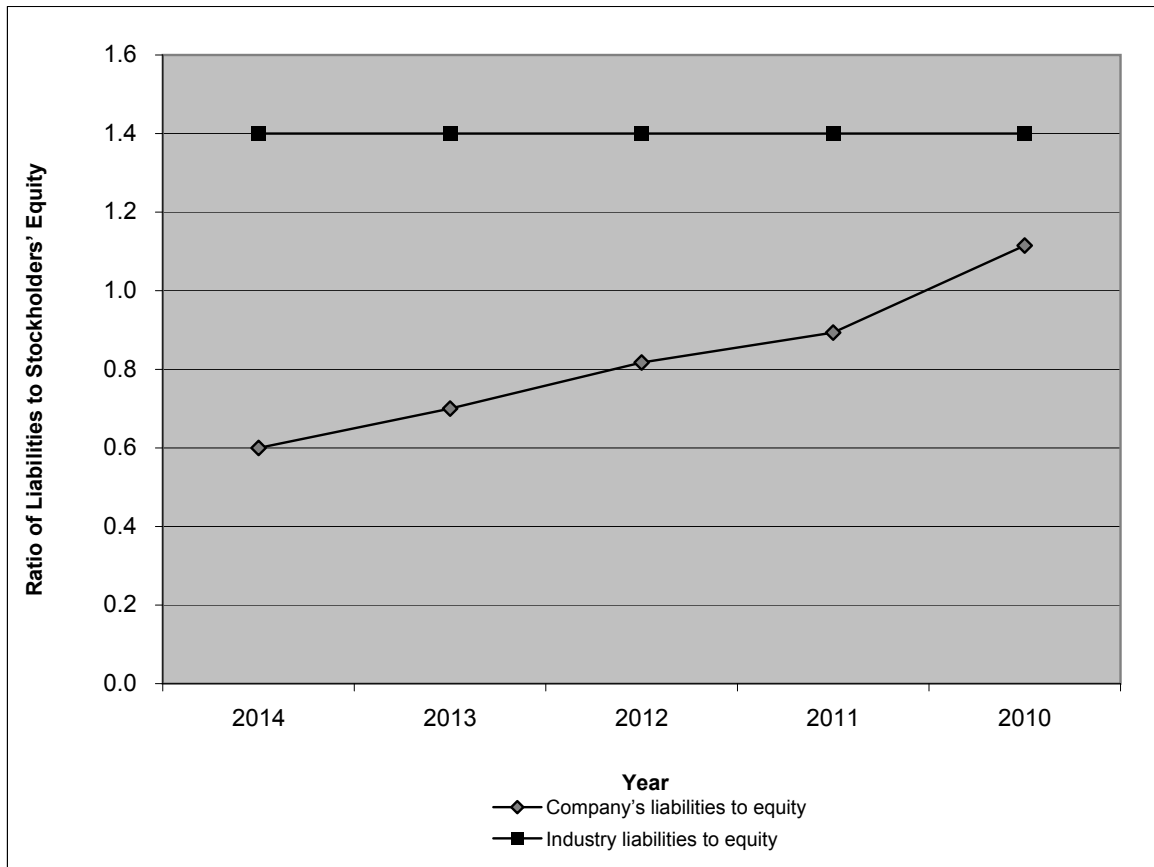
$$2013: \frac{\$5,451,278}{\$891,576} = 6.1$$

$$2010: \frac{\$2,220,000}{\$500,000} = 4.4$$

$$2012: \frac{\$4,180,920}{\$768,600} = 5.4$$

Prob. 14–5B (Man) (Continued)

1. d.



$$\text{Ratio of Liabilities to Stockholders' Equity} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

$$2014: \frac{\$10,672,291}{\$18,706,200} = 0.6$$

$$2011: \frac{\$5,940,480}{\$6,648,000} = 0.9$$

$$2013: \frac{\$9,464,359}{\$13,134,480} = 0.7$$

$$2010: \frac{\$5,352,000}{\$4,800,000} = 1.1$$

$$2012: \frac{\$7,700,333}{\$9,420,000} = 0.8$$

Note: Total liabilities are determined by subtracting stockholders' equity (ending balance) from the total assets (ending balance).

Prob. 14–5B (Man) (Concluded)

2. Both the rate earned on total assets and the rate earned on stockholders' equity are above the industry average for all five years. The rate earned on total assets is actually improving gradually. The rate earned on stockholders' equity exceeds the rate earned on total assets, providing evidence of the positive use of leverage. The company is clearly growing earnings as fast as the asset and equity base. In addition, the ratio of liabilities to stockholders' equity indicates that the proportion of debt to stockholders' equity has been declining over the period. The firm is adding to debt at a slower rate than the assets are growing from earnings. The number of times interest charges were earned is improving during this time period. Again, the firm is increasing earnings faster than the increase in interest charges. Overall, these ratios indicate excellent financial performance coupled with appropriate use of debt (leverage).

NIKE, INC., PROBLEM

| | Fiscal 2010 | Fiscal 2009 |
|--|------------------------|------------------------|
| 1. a. Total current assets..... | \$11,297.0 | \$10,959.0 |
| Total current liabilities..... | 3,958.0 | 3,364.0 |
| Working capital..... | \$ 7,339.0 | \$ 7,595.0 |
| b. Total current assets..... | \$11,297.0 | \$10,959.0 |
| ÷ Total current liabilities..... | 3,958.0 | 3,364.0 |
| Current ratio..... | 2.9 | 3.3 |
| c. Cash..... | \$ 1,955.0 | \$ 3,079.0 |
| Short-term investments..... | 2,583.0 | 2,067.0 |
| Accounts receivable..... | 3,138.0 | 2,650.0 |
| Total quick assets..... | \$ 7,676.0 | \$ 7,796.0 |
| ÷ Total current liabilities..... | 3,958.0 | 3,364.0 |
| Quick ratio..... | 1.9 | 2.3 |
| d. Net sales..... | \$20,862.0 | \$19,014.0 |
| Accounts receivable (net): | | |
| Beginning of year..... | \$ 2,650.0 | \$ 2,884.0 |
| End of year..... | 3,138.0 | 2,650.0 |
| Total..... | \$ 5,788.0 | \$ 5,534.0 |
| Average (Total ÷ 2)..... | 2,894.0 | 2,767.0 |
| Accounts receivable turnover | | |
| (Net sales ÷ Average accounts receivable)..... | 7.2 | 6.9 |
| e. Accounts receivable (average): | | |
| Net sales..... | \$20,862.0 | \$19,014.0 |
| Average daily sales (Sales ÷ 365)..... | 57.2 | 52.1 |
| Number of days' sales in receivables..... | 50.6 | 53.1 |
| f. Cost of goods sold..... | \$11,354.0 | \$10,214.0 |
| Inventories: | | |
| Beginning of year..... | \$ 2,041.0 | \$ 2,357.0 |
| End of year..... | 2,715.0 | 2,041.0 |
| Total..... | \$ 4,756.0 | \$ 4,398.0 |
| Average (Total ÷ 2)..... | 2,378.0 | 2,199.0 |
| Inventory turnover | | |
| (Cost of goods sold ÷ Average inventory)..... | 4.8 | 4.6 |

NIKE, INC., PROBLEM (Continued)

| | Fiscal 2010 | Fiscal 2009 |
|---|------------------------|------------------------|
| g. Inventory (average)..... | \$ 2,378.0 | \$ 2,199.0 |
| Cost of goods sold..... | 11,354.0 | 10,214.0 |
| Average daily cost of goods sold..... | <u>31.1</u> | <u>28.0</u> |
| Number of days' sales in inventory (Average inventory ÷ Average daily cost of goods sold)..... | <u>76.5</u> | <u>78.5</u> |
| h. Total liabilities..... | \$ 5,155.0 | \$ 4,665.0 |
| ÷ Total stockholders' equity..... | <u>9,843.0</u> | <u>9,754.0</u> |
| Ratio of liabilities to stockholders' equity..... | <u>0.5</u> | <u>0.5</u> |
| i. Net sales..... | \$20,862.0 | \$19,014.0 |
| Total assets (excluding long-term investments): | | |
| Beginning of year..... | \$14,419.0 | \$13,249.0 |
| End of year..... | <u>14,998.0</u> | <u>14,419.0</u> |
| Total..... | \$29,417.0 | \$27,668.0 |
| Average total assets..... | <u>14,708.5</u> | <u>13,834.0</u> |
| Ratio of net sales to assets..... | <u>1.4</u> | <u>1.4</u> |
| j. Net income..... | \$ 2,133.0 | \$ 1,907.0 |
| Plus interest expense*..... | <u>4.0</u> | <u>6.0</u> |
| Total..... | <u>\$ 2,137.0</u> | <u>\$ 1,913.0</u> |
| Total assets: | | |
| Beginning of year..... | \$14,419.0 | \$13,249.0 |
| End of year..... | <u>14,998.0</u> | <u>14,419.0</u> |
| Total..... | \$29,417.0 | \$27,668.0 |
| Average total assets..... | <u>14,708.5</u> | <u>13,834.0</u> |
| Rate earned on total assets [(Net income + Interest expense) ÷ Average total assets]..... | <u>14.5%</u> | <u>13.8%</u> |
| * See Nike note 6 | | |
| k. Net income..... | \$ 2,133.0 | \$ 1,907.0 |
| Stockholders' equity: | | |
| Beginning of year..... | \$ 9,754.0 | \$ 8,693.0 |
| End of year..... | <u>9,843.0</u> | <u>9,754.0</u> |
| Total..... | \$19,597.0 | \$18,447.0 |
| Average common stockholders' equity..... | <u>9,798.5</u> | <u>9,223.5</u> |
| Rate earned on common stockholders' equity..... | <u>21.8%</u> | <u>20.7%</u> |
| l. Market price per share of common stock..... | \$75.70 | \$73.50 |
| Earnings per share on common stock..... | <u>4.48</u> | <u>3.93</u> |
| Price-earnings ratio..... | <u>16.9</u> | <u>18.7</u> |

NIKE, INC., PROBLEM (Concluded)

| | Fiscal 2010 | Fiscal 2009 |
|------------------------------|------------------------|------------------------|
| m. Net income..... | \$ 2,133.0 | \$ 1,907.0 |
| Net sales..... | <u>20,862.0</u> | <u>19,014.0</u> |
| Net income to net sales..... | <u>\$ 10.2%</u> | <u>\$ 10.0%</u> |

2. Before reaching definitive conclusions, each measure should be compared with past years, industry averages, and similar firms in the industry.
- a. The working capital decreased somewhat.
 - b. and c. The current and quick ratios decreased during 2010.
 - d. and e. The accounts receivable turnover and the number of days' sales in receivables indicate a slight increase in the efficiency of collecting accounts receivable. The accounts receivable turnover increased from 6.9 to 7.2. The number of days' sales in receivables decreased slightly from 53.1 to 50.6. Thus, it takes the company less than two months to collect its accounts receivable from credit sales. These numbers should be compared to their competitors, industry averages, and Nike's credit policy to draw definitive conclusions.
 - f. and g. The results of these two analyses show a very slight increase in inventory turnover and a decrease in the number of days' sales in inventory. Both trends are small. Inventory management is critical to Nike, so this indicates a favorable trend.
 - h. The margin of protection to creditors remained the same. Overall, Nike provides sound protection to its creditors.
 - i. These analyses indicate that the effectiveness in the use of assets to generate revenues was very similar in both years.
 - j. The rate earned on total assets increased during 2010. This increase was due to Nike's strong earnings performance in 2010 relative to 2009. Overall, rates earned on assets that exceed 10% are usually considered good performance.
 - k. The rate earned on common stockholders' equity increased. This increase was due to Nike's strong earnings performance in 2010 relative to 2009.
 - l. The price-earnings ratio decreased somewhat from 2010 to 2011. This decrease was driven by an increase in Nike's earnings per share (from \$3.93 in fiscal 2009 to \$4.48 in fiscal 2010) combined with a relatively small increase in stock price during the same period.
 - m. The percent of net income to sales improved during 2010 as Nike's growth in earnings outpaced its growth in sales.

CASES & PROJECTS**CP 14–1 (Man)**

This position does not allow the shareholders to take advantage of leverage. As a result, the return on shareholders' equity cannot be improved by using debt. In contrast, a low or no debt load does provide the company great flexibility in the case of a national calamity. However, the "no debt" position only makes sense within the "national calamity" scenario. Within normal business operations, most companies can assume some debt without much loss of flexibility or control. Freeman Industries is competing against companies that will not be so inclined to avoid debt. As a result, they will likely be able to grow faster than Freeman Industries. The Freeman Industries management should consider the risk of not being able to keep up with the competition because of their conservative financing policies.

CP 14–2 (Man)

Josh is concerned about the inventory and accounts receivable levels because he must determine their value. Inventory that cannot be sold (or sold at a large discount) or accounts receivable that cannot be collected must be written down to reflect their reduced value. Josh has conducted the ratio analysis and interviewed Aaron to help make this determination. The inventory and accounts receivable levels have grown alarmingly. Aaron's response to Josh is not reassuring. The inventory represents obsolete technology that is left over after the holiday season. The accounts receivable have apparently grown from loosening the credit standards. Josh may need to insist on write-downs of the inventory and accounts receivable balances to reflect their net realizable values. Aaron is correct in pointing out that the current ratio has probably improved. Thus, although Aaron calls this "good," it is only such if the current assets in the numerator are fairly valued. Under these circumstances, the current ratio is probably overstated because the inventory and accounts receivable balances are inflated relative to their net realizable values.

CP 14–3 (Man)

| DELL INC. AND APPLE INC. Common-Sized Statements | | |
|---|------------------|-------------------|
| | Dell Inc. | Apple Inc. |
| Sales (net) | 100.0% | 100.0% |
| Cost of sales | 81.5% | 60.6% |
| Gross profit | 18.5% | 39.4% |
| Operating expenses: | | |
| Selling, general, and administrative | 11.9% | 8.5% |
| Research and development | 1.1% | 2.7% |
| Total operating expenses | 13.0% | 11.2%* |
| Income from operations | 5.6% | 28.2% |
| | | |

* Rounded to the nearest tenth of a percent.

The common-sized analysis indicates that Dell and Apple are very different computer companies. Dell's income from operations was 5.6% of sales, while Apple's was 28.2% of sales. There is almost a 23 percentage point difference between the two companies. What explains this difference? The gross profit for Dell was 18.5% of sales, which is fairly narrow. Apple, in contrast, had a gross profit of 39.4% of sales, which is over 20% better than Dell's. This suggests that Apple is able to charge higher prices than Dell for its products (assuming that they are both equally efficient in making products). Apple's selling, general, and administrative expenses were at about 8.5% of sales, while Dell's are 11.9% of sales. Apple has larger research expenses as a percent of sales. It attempts to sell a unique array of products to a wide audience. This requires significant research and development. Dell's R&D was a narrow 1.1% of sales, while Apple's was 2.7% of sales. Essentially, Dell focuses its R&D effort on the final assembly of computers. Dell relies on its suppliers to develop innovation in the components and operating system software (Microsoft). Apple, on the other hand, must constantly spend R&D on computers, peripherals, and its own operating system software. This is because Apple chooses not to follow the industry standards and thus must pave its own way on both hardware and software. The higher gross profit as a percentage of sales for Apple carries through to its income from operations, generating a significantly higher operating income as a percentage of sales compared to Dell.

CP 14-4 (Man)

$$\text{a.} \quad \text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$\text{Year 3: } \frac{\$1,865 + \$811}{\$42,200} = 6.3\%$$

$$\text{Year 2: } \frac{\$874 + \$1,042}{\$39,934} = 4.8\%$$

$$\text{Year 1: } \frac{\$2,053 + \$1,137}{\$38,655} = 8.3\%$$

$$\text{b.} \quad \text{Rate Earned on Total Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

$$\text{Year 3: } \frac{\$1,865}{\$5,555} = 33.6\%$$

$$\text{Year 2: } \frac{\$874}{\$5,676} = 15.4\%$$

$$\text{Year 1: } \frac{\$2,053}{\$6,844} = 30.0\%$$

$$\text{c.} \quad \text{Earnings per Share} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}}$$

$$\text{Year 3: } \frac{\$1,865 - \$0}{424} = \$4.40$$

$$\text{Year 2: } \frac{\$874 - \$0}{423} = \$2.07$$

$$\text{Year 1: } \frac{\$2,053 - \$0}{431} = \$4.76$$

CP 14–4 (Man) (Continued)

$$\text{d.} \quad \text{Dividend Yield} = \frac{\text{Dividend per Share of Common Stock}}{\text{Market Price per Share of Common Stock}}$$

$$\text{Year 3: } \frac{\$1.16}{\$60.95} = 1.9\%$$

$$\text{Year 2: } \frac{\$1.12}{\$47.06} = 2.4\%$$

$$\text{Year 1: } \frac{\$1.06}{\$58.01} = 1.8\%$$

$$\text{e.} \quad \text{Price-Earnings Ratio} = \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share}}$$

$$\text{Year 3: } \frac{\$60.95}{\$4.40} = 13.9$$

$$\text{Year 2: } \frac{\$47.06}{\$2.07} = 22.7$$

$$\text{Year 1: } \frac{\$58.01}{\$4.76} = 12.2$$

$$2. \quad \text{Ratio of Average Liabilities to Average Stockholders' Equity} = \frac{\text{Average Liabilities}}{\text{Average Stockholders' Equity}}$$

$$\text{Year 3: } \frac{\$42,200 - \$5,555}{\$5,555} = 6.6$$

CP 14–4 (Man) (Concluded)

3. Deere & Co.'s profitability, as measured by earnings per share, has fluctuated significantly during the three-year period presented. The rates earned on total assets and total stockholders' equity have also fluctuated significantly during this period. This is most likely due to the significant deterioration in the overall economy, as well as in the construction industry, which was primarily concentrated during Year 2. The rebound in these metrics in Year 3 can be attributed to improved capital equipment spending, and a jump in commodity prices that fueled increases in the sales of farm equipment. The dividend yield and the price-earnings ratio increased significantly in Year 2 due to a large drop in the company's stock price, which was likely due to the drop in earnings per share during Year 2. The share price returned to the Year 1 level by the end of fiscal Year 3, reducing the dividend yield and price-earnings ratio.

CP 14–5 (Man)

1. a.
$$\text{Rate Earned on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

Marriott:
$$\frac{\$458 + \$180}{\$8,458} = 7.5\%$$

Hyatt:
$$\frac{\$66 + \$54}{\$7,199} = 1.7\%$$

b.
$$\text{Rate Earned on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

Marriott:
$$\frac{\$458}{\$1,364} = 33.6\%$$

Hyatt:
$$\frac{\$66}{\$5,067} = 1.3\%$$

c.
$$\text{Number of Times Interest Charges Are Earned} = \frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}}$$

Marriott:
$$\frac{\$551 + \$180}{\$180} = 4.1$$

Hyatt:
$$\frac{\$103 + \$54}{\$54} = 2.9$$

d.
$$\text{Ratio of Liabilities to Stockholders' Equity} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}}$$

Marriott:
$$\frac{\$7,398}{\$1,585} = 4.7$$

Hyatt:
$$\frac{\$2,125}{\$5,118} = 0.4$$

Summary Table:

| | Marriott | Hyatt |
|--|----------|-------|
| Rate earned on total assets | 7.5% | 1.7% |
| Rate earned on stockholders' equity | 33.6% | 1.3% |
| Number of times interest charges are earned | 4.1 | 2.9 |
| Ratio of liabilities to stockholders' equity | 4.7 | 0.4 |

CP 14–5 (Man) (Concluded)

- 2. Marriott has a higher rate earned on total assets (7.5% vs. 1.7%), and a higher rate on stockholders' equity (33.6% vs. 1.3%), compared to Hyatt. Hyatt's weaker performance relative to Marriott appears to be due to its weak earnings relative to its debt level. Hyatt has less leverage than Marriott. This is confirmed by the the ratio of liabilities to stockholders' equity, which shows the relative debt held by Marriott is 4.7 times stockholders' equity, compared to 0.4 time for Hyatt. The number of times interest charges are earned shows that Marriott covers its interest charges 4.1 times. The comparable number for Hyatt is 2.9, which is marginally sufficient. Hyatt is not covering the interest expense on its debt as well as Marriott, which is negatively affecting the rate earned on total assets and stockholders' equity. In summary, Hyatt's weak earnings and low debt levels are affecting the company's ability to earn returns for stockholders.**

