

CHAPTER 14

FINANCIAL STATEMENT ANALYSIS

DISCUSSION QUESTIONS

1. Liquidity is the ability of a company to convert assets into cash. Short-term creditors such as banks and financial institutions are most concerned with liquidity. Solvency is the ability of a company to pay its debts. Long-term creditors, such as bondholders, are primarily concerned with a company's solvency. Profitability is the ability of a company to generate earnings. Investors, such as stockholders, are primarily concerned with profitability because it determines whether the company's stock price will increase.
2. Comparative statements provide information about 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 for the current year. The return on total 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 other uses. Storage costs, administrative expenses, losses caused by obsolescence, and potential decreases in selling prices are also kept to a minimum when inventory turnover is high.
 - B. Yes. Inventory turnover measures the "turnover" of inventory during the year, while the number of days' sales in inventory measures 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 in the preceding year to 4.2 in the current year. This indicates that the company is in a stronger position this year to borrow additional long-term debt.
7.
 - A. The return on total assets measures the profitability of the total assets, without regard for how the assets are financed. The return on stockholders' equity measures the profitability of the stockholders' investment, focusing exclusively on the return to shareholders.
 - B. The return on stockholders' equity is normally higher than the return on total assets. This is because of leverage, which compensates stockholders for the higher risk of their investments.

DISCUSSION QUESTIONS (Concluded)

8. The price-earnings ratio measures the market's expectations of a company's future earnings prospects. Kroger's low price-earnings ratio compared to the industry average suggests that the market has low expectations about the company's future earnings.
9. The dividend yield measures the return common stockholders receive from a cash dividend. The high dividend yield for Suburban Propane indicates that a significant portion of the return to their shareholders comes in the form of a cash dividend. The lack of a dividend yield for Google indicates that the return to shareholders comes solely from stock price appreciation.
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.

BASIC EXERCISES

BE 14-1

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

BE 14-2

	<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)

BE 14-3

A. Current Ratio = Current Assets ÷ Current Liabilities
 = (\$210,000 + \$120,000 + \$110,000 + \$160,000) ÷ \$200,000
 = 3.0

B. Quick Ratio = Quick Assets ÷ Current Liabilities
 = (\$210,000 + \$120,000 + \$110,000) ÷ \$200,000
 = 2.2

BE 14-4

A. Accounts Receivable Turnover = Sales ÷ Average Accounts Receivable
 = \$3,150,000 ÷ \$210,000
 = 15.0

B. Number of Days' Sales in Receivables = $\frac{\text{Average Accounts Receivable}}{\text{Average Daily Sales}}$
 = \$210,000 ÷ (\$3,150,000 ÷ 365)
 = \$210,000 ÷ \$8,630
 = 24.3 days

BE 14–5

$$\begin{aligned} \text{A. Inventory Turnover} &= \text{Cost of Goods Sold} \div \text{Average Inventory} \\ &= \$435,000 \div \$72,500 \\ &= 6.0 \end{aligned}$$

$$\begin{aligned} \text{B. Number of Days' Sales in Inventory} &= \frac{\text{Average Inventory}}{\text{Average Daily Cost of Goods Sold}} \\ &= \$72,500 \div (\$435,000 \div 365) \\ &= \$72,500 \div \$1,192 \\ &= 60.8 \text{ days} \end{aligned}$$

BE 14–6

$$\begin{aligned} \text{A. Ratio of Fixed Assets to Long-Term Liabilities} &= \frac{\text{Fixed Assets}}{\text{Long-Term Liabilities}} \\ &= \$860,000 \div \$200,000 \\ &= 4.3 \end{aligned}$$

$$\begin{aligned} \text{B. Ratio of Liabilities to Stockholders' Equity} &= \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}} \\ &= \$600,000 \div \$250,000 \\ &= 2.4 \end{aligned}$$

BE 14–7

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

BE 14–8

$$\begin{aligned}
 \text{Asset Turnover} &= \text{Sales} \div \text{Average Total Assets} \\
 &= \$4,400,000 \div \$2,000,000 \\
 &= 2.2
 \end{aligned}$$

BE 14–9

$$\begin{aligned}
 \text{Return on Total Assets} &= \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}} \\
 &= \frac{\$410,000 + \$90,000}{\$5,000,000} \\
 &= \frac{\$500,000}{\$5,000,000} \\
 &= 10.0\%
 \end{aligned}$$

BE 14–10

$$\begin{aligned}
 \text{A. Return on Stockholders' Equity} &= \frac{\text{Net Income}}{\text{Average Stockholders' Equity}} \\
 &= \$1,000,000 \div \$6,250,000 \\
 &= 16.0\%
 \end{aligned}$$

$$\begin{aligned}
 \text{B. Return on Common Stockholders' Equity} &= \frac{\text{Net Income} - \text{Preferred Dividend}}{\text{Average Common Stockholders' Equity}} \\
 &= \frac{\$1,000,000 - \$50,000}{\$3,800,000} \\
 &= 25.0\%
 \end{aligned}$$

BE 14–11

$$\begin{aligned}
 \text{A. Earnings per Share on Common Stock} &= \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Shares of Common Stock Outstanding}} \\
 &= (\$410,000 - \$60,000) \div 50,000 \\
 &= \$7.00
 \end{aligned}$$

$$\begin{aligned}
 \text{B. Price-Earnings Ratio} &= \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share on Common Stock}} \\
 &= \$84.00 \div \$7.00 \\
 &= 12.0
 \end{aligned}$$

EXERCISES

Ex. 14-1

A.

Innovation Quarter Inc. Comparative Income Statement For the Years Ended December 31				
	Current Year		Previous Year	
	Amount	Percent	Amount	Percent
Sales	\$4,000,000	100%	\$3,600,000	100%
Cost of goods sold	2,280,000	57%	1,872,000	52%
Gross profit	\$1,720,000	43%	\$1,728,000	48%
Selling expenses	600,000	15%	648,000	18%
Administrative expenses	520,000	13%	360,000	10%
Total operating expenses	\$1,120,000	28%	\$1,008,000	28%
Income from operations	600,000	15%	720,000	20%
Income tax expense	240,000	6%	216,000	6%
Net income	\$ 360,000	9%	\$ 504,000	14%

- B. The vertical analysis indicates that the cost of goods sold as a percent of sales increased by 5 percentage points (57% – 52%), while selling expenses decreased by 3 percentage points (15% – 18%), and administrative expenses increased by 3% (13% – 10%). Thus, net income as a percent of sales dropped by 5% (9% – 14%).

Ex. 14-2

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	\$116,034	23.7%	\$130,239	25.7%
Event-related revenue	151,562	30.9%	163,621	32.3%
NASCAR broadcasting				
revenue	192,662	39.3%	185,394	36.7%*
Other operating revenue	29,902	6.1%	26,951	5.3%
Total revenue	\$490,160	100.0%	\$506,205	100.0%
Expenses and other:				
Direct expense of events	\$101,402	20.7%	\$106,204	21.0%
NASCAR purse and				
sanction fees	122,950	25.1%	120,146	23.7%
Other direct expenses	18,908	3.9%	20,352	4.0%
General and administrative	183,215	37.4%	241,223	47.7%
Total expenses and other	\$426,475	87.0%**	\$487,925	96.4%
Income from continuing				
operations	\$ 63,685	13.0%	\$ 18,280	3.6%

* NASCAR broadcasting revenue (prior year percentage): Actual amount is 36.6%. The amount is rounded up to achieve 100% for total revenue.

** Total expenses and other (current year percentage): The amount presented is the ratio of total expenses (\$426,475) divided by total revenues (\$490,160). This ratio (87%) differs from the sum of all expense ratios (87.1%) due to rounding.

- B. Overall revenue decreased some between the two years, as did the overall mix of revenue sources. The NASCAR broadcasting revenue increased by 2.6% of total revenue, while admissions revenue decreased by 2% of total revenue. One of the major expense categories, NASCAR purse and sanction fees, increased by 1.4% of total revenue. The Direct expenses of events and Other direct expenses remained relatively constant during the two-year period. General and administrative expenses, however, decreased significantly (by over 10% of total revenue). This cost reduction was the driving factor behind the significant increase in income from continuing operations, increasing from 3.6% to 13% of total revenue. It appears that aggressive cost cutting has helped the company significantly improve its income from continuing operations.**

Ex. 14-3

A.

Tannenhill Company Common-Sized Income Statement For the Year Ended December 31			
	Tannenhill Company		Electronics Industry Average
	Amount	Percent	
Net sales	\$4,000,000	100%	100%
Cost of goods sold	2,120,000	53%	60%
Gross profit	\$1,880,000	47%	40%
Selling expenses	1,080,000	27%	24%
Administrative expenses	640,000	16%	14%
Total operating expenses	\$1,720,000	43%	38%
Operating income	160,000	4%	2%
Other income	120,000	3%	3%
	\$ 280,000	7%	5%
Other expense	80,000	2%	2%
Income before income tax	\$ 200,000	5%	3%
Income tax expense	80,000	2%	2%
Net income	\$ 120,000	3%	1%

- B. The cost of goods sold is 7% lower than the industry average, but the selling expenses and administrative expenses are 3% and 2% 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

Alvaraz Company				
Comparative Balance Sheet				
For the Years Ended December 31				
	Current Year		Previous Year	
	Amount	Percent	Amount	Percent
Current assets	\$ 2,500,000	25.0%	\$1,840,000	20.0%
Property, plant, and equipment	5,600,000	56.0%	6,072,000	66.0%
Intangible assets	1,900,000	19.0%	1,288,000	14.0%
Total assets	\$10,000,000	100.0%	\$9,200,000	100.0%
Current liabilities	\$ 2,000,000	20.0%	\$1,380,000	15.0%
Long-term liabilities	3,400,000	34.0%	3,680,000	40.0%
Common stock	920,000	9.2%	920,000	10.0%
Retained earnings	3,680,000	36.8%	3,220,000	35.0%
Total liabilities and stockholders' equity	\$10,000,000	100.0%	\$9,200,000	100.0%

Ex. 14-5

A.

Winthrop Company				
Comparative Income Statement				
For the Years Ended December 31				
	Current Year	Previous Year	Increase (Decrease)	
	Amount	Amount	Amount	Percent
Sales	\$2,280,000	\$2,000,000	\$280,000	14.0%
Cost of goods sold	1,960,000	1,750,000	210,000	12.0%
Gross profit	\$ 320,000	\$ 250,000	\$ 70,000	28.0%
Selling expenses	156,500	125,000	31,500	25.2%
Administrative expenses	122,000	100,000	22,000	22.0%
Total operating expenses	\$ 278,500	\$ 225,000	\$ 53,500	23.8%
Income before income tax	41,500	25,000	16,500	66.0%
Income tax expense	16,600	10,000	6,600	66.0%
Net income	\$ 24,900	\$ 15,000	\$ 9,900	66.0%

- B. The net income for Winthrop Company increased by 66% between years. This increase was the combined result of an increase in sales of 14% and a lower percentage increase in cost of goods sold. As a result, the percentage increase in gross profit exceeded the percentage increase in sales.

Ex. 14–6

A. (1) Working Capital = Current Assets – Current Liabilities Current year:

$$\$1,170,000 = \$2,070,000 - \$900,000$$

$$\text{Previous year: } \$800,000 = \$1,600,000 - \$800,000$$

$$(2) \text{ Current Ratio} = \frac{\text{Current Assets (Cash, Marketable Securities, Accounts Receivable)}}{\text{Current Liabilities}}$$

$$\text{Current year: } \frac{\$2,070,000}{\$900,000} = 2.3 \qquad \text{Previous year: } \frac{\$1,600,000}{\$800,000} = 2.0$$

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

$$\text{Current year: } \frac{\$1,530,000}{\$900,000} = 1.7 \qquad \text{Previous year: } \frac{\$1,120,000}{\$800,000} = 1.4$$

B. The liquidity of Nilo 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

$$A. (1) \text{ Current Ratio} = \frac{\text{Current Assets (Cash, Short-Term investments, Accounts Receivable)}}{\text{Current Liabilities}}$$

$$\text{Current year: } \frac{\$18,720}{\$17,089} = 1.1 \qquad \text{Previous year: } \frac{\$17,441}{\$18,154} = 1.0$$

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

$$\text{Current year: } \frac{\$13,660}{\$17,089} = 0.8 \qquad \text{Previous year: } \frac{\$11,337}{\$18,154} = 0.6$$

B. The liquidity of PepsiCo has increased slightly over this time period. The current ratio has increased from 1.0 to 1.1, and the quick ratio has increased by 0.2. PepsiCo appears to have ample resources to meet its short-term obligations, and these resources have remained constant during this time period.

Ex. 14-8

- 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

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

20Y3: $\frac{\$5,637,500}{\$687,500^*} = 8.2$	20Y2: $\frac{\$4,687,500}{\$625,000^{**}} = 7.5$
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* $\$687,500 = (\$725,000 + \$650,000) \div 2$

** $\$625,000 = (\$650,000 + \$600,000) \div 2$

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

20Y3: $\frac{\$687,500^1}{\$15,445^2} = 44.5 \text{ days}$	20Y2: $\frac{\$625,000^3}{\$12,842^4} = 48.7 \text{ days}$
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¹ Average accounts receivable = $\$687,500 = (\$725,000 + \$650,000) \div 2$

² Average daily sales = $\$15,445 = \$5,637,500 \div 365 \text{ days}$

³ Average accounts receivable = $\$625,000 = (\$650,000 + \$600,000) \div 2$

⁴ Average daily sales = $\$12,842 = \$4,687,500 \div 365 \text{ days}$

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 45 days. In the prior year, 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 the current year, the collection period is within the credit terms of the company.

Ex. 14–10

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

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

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

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

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

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

* Average daily sales = $\$23,287.7 = \$8,500,000 \div 365$ days

** Average daily sales = $\$12,561.6 = \$4,585,000 \div 365$ 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

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

$$\text{Current Year: } \frac{\$9,270,000}{(\$1,120,000 + \$940,000) \div 2} = 9.0$$

$$\text{Previous Year: } \frac{\$10,800,000}{(\$940,000 + \$860,000) \div 2} = 12.0$$

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

$$\text{Current Year: } \frac{(\$1,120,000 + \$940,000) \div 2}{\$25,397^*} = 40.6 \text{ days}$$

$$\text{Previous Year: } \frac{(\$940,000 + \$860,000) \div 2}{\$29,589^{**}} = 30.4 \text{ days}$$

* Average daily cost of goods sold = \$25,397 = \$9,270,000 ÷ 365 days

** Average daily cost of goods sold = \$29,589 = \$10,800,000 ÷ 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 appears to have declined faster than the inventory, resulting in a deteriorating inventory position.

Ex. 14-12

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

$$\text{QT: } \frac{\$44,754}{(\$1,382 + \$1,404) \div 2} = 32.1$$

$$\text{Elppa: } \frac{\$92,385}{(\$6,317 + \$7,490) \div 2} = 13.4$$

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

$$\text{QT: } \frac{(\$1,382 + \$1,404) \div 2}{\$122.6^*} = 11.4 \text{ days}$$

$$\text{Elppa: } \frac{(\$6,317 + \$7,490) \div 2}{\$253.1^{**}} = 27.3 \text{ days}$$

* Average daily cost of goods sold = \$122.6 = \$44,754 ÷ 365 days

** Average daily cost of goods sold = \$253.1 = \$92,385 ÷ 365 days

- B. QT has a much higher inventory turnover ratio than does Elppa (32.1 vs. 13.4). Likewise, QT has a much smaller number of days' sales in inventory (11.4 days vs. 27.3 days). These significant differences are a result of QT's make-to-order strategy. QT has successfully developed a manufacturing process that is able to fill a customer order quickly. As a result, QT does not pre-build many computers for inventory. Elppa, in contrast, pre-builds computers to be sold to 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.

Ex. 14-13

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

$$\text{Current Year: } \frac{\$2,124,000}{\$2,360,000} = 9.0$$

$$\text{Previous Year: } \frac{\$2,200,000}{\$2,000,000} = 1.1$$

$$\text{B. Times Interest Earned} = \frac{\text{Income Before Income Tax + Interest Expense}}{\text{Interest Expense}}$$

$$\text{Current Year: } \frac{\$480,000 + \$120,000^*}{\$120,000} = 5.0$$

$$\text{Previous Year: } \frac{\$420,000 + \$140,000^{**}}{\$140,000} = 4.0$$

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

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

- C. Both the ratio of liabilities to stockholders' equity and the number of times bond interest charges were earned have improved from the previous year. These results are the combined result of a larger income before income taxes and lower interest expense in the current year compared to the previous year.

Ex. 14-14

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

$$\text{Hasbro: } \frac{\$2,818,008}{\$1,507,379} = 1.9$$

$$\text{Mattel, Inc.: } \frac{\$3,459,741}{\$3,067,044} = 1.1$$

$$\text{B. Times Interest Earned} = \frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$\text{Hasbro: } \frac{\$453,402 + \$117,403}{\$117,403} = 4.9$$

$$\text{Mattel, Inc.: } \frac{\$945,045 + \$88,835}{\$88,835} = 11.6$$

- C. Hasbro carries a larger proportion of debt to the stockholders' equity than Mattel (1.9 and 1.1 times stockholders' equity). Both companies have strong interest coverage; however, Mattel's ratio is much stronger than Hasbro's. Together, these ratios indicate that both companies provide creditors with a sound margin of safety, but Mattel's interest coverage ratio is much stronger than Hasbro's. Together, these ratios indicate that earnings are more than enough to make interest payments. With that said, Mattel does provide creditors with a greater margin of safety than Hasbro.

Ex. 14–15

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

Mondelez: $\frac{\$14,873,000 + \$15,574,000 + \$12,816,000}{\$32,215,000} = 1.3$

Hershey: $\frac{\$1,471,110 + \$1,530,967 + \$716,013}{\$1,036,749} = 3.6$

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

Mondelez: $\frac{\$10,010,000}{\$28,390,000} = 0.4$

Hershey: $\frac{\$1,674,071}{\$2,246,980} = 0.7$

C. Hershey uses more debt than does Mondelez. As a result, Hershey's total liabilities to stockholders' equity ratio is higher than Mondelez's (3.6 vs. 1.3). Mondelez 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 Mondelez is aggressive, with fixed assets covering only 40% of the long-term debt. That is, the creditors of Mondelez have 40 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 70 cents 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 Mondelez.

Ex. 14-16

A.
$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Average Total Assets}}$$

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

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

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

- B. The asset turnover ratio 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 each company's asset efficiency. Union Pacific earns only 40 cents for every dollar of assets. This is because railroads are very asset intensive. The company must invest in locomotives, railcars, terminals, tracks, right-of-way, and information systems in order to earn revenues. These investments are significant. YRC has a slightly higher asset turnover ratio and is able to earn \$1.50 for every dollar of assets. This is because the motor carrier invests in trucks, trailers, and terminals, which require less investment per dollar of revenue than 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, the transportation arranger, hires transportation services from motor carriers and railroads but does not own these assets itself. The transportation arranger's assets are in the form of accounts receivable and information systems. However, the company does not require transportation assets; thus, it is able to earn the highest revenue per dollar of assets (\$4.80).

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

$$\text{A. Return on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

$$20Y7: \frac{\$372,000 + \$180,000^1}{\$4,600,000^2} = 12.0\%$$

$$20Y6: \frac{\$492,000 + \$180,000^3}{\$4,200,000^4} = 16.0\%$$

¹ Interest expense = \$2,250,000 × 8%

² Average total assets = (\$4,800,000 + \$4,400,000) ÷ 2

³ Interest expense = \$2,250,000 × 8%

⁴ Average total assets = (\$4,400,000 + \$4,000,000) ÷ 2

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

$$20Y7: \frac{\$372,000}{\$2,148,000^*} = 17.3\%$$

$$20Y6: \frac{\$492,000}{\$1,736,000^{**}} = 28.3\%$$

* Average total stockholders' equity = (\$2,324,000 + \$1,972,000) ÷ 2

** Average total stockholders' equity = (\$1,972,000 + \$1,500,000) ÷ 2

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

$$20Y7: \frac{\$372,000 - \$20,000^1}{\$1,648,000^2} = 21.4\%$$

$$20Y6: \frac{\$492,000 - \$20,000^3}{\$1,236,000^4} = 38.2\%$$

¹ Preferred dividends = \$500,000 × 4%

² Average common stockholders' equity = (\$1,824,000 + \$1,472,000) ÷ 2

³ Preferred dividends = \$500,000 × 4%

⁴ Average common stockholders' equity = (\$1,472,000 + \$1,000,000) ÷ 2

- B.** The profitability ratios indicate that the company's profitability has deteriorated. Most of this change is from net income falling from \$492,000 in 20Y6 to \$372,000 in 20Y7. Because the return on common stockholders' equity exceeds the return on total assets in both years, there is positive leverage from the use of debt. However, this leverage is greater in 20Y6 because the return on total assets exceeds the return on common stockholders' equity by a greater amount in 20Y6.

Ex. 14-18

A.
$$\text{Return on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

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

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

B.
$$\text{Return on Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}}$$

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

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

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

Ex. 14-19

A.
$$\frac{\text{Ratio of Fixed Assets to Long-Term Liabilities}}{\frac{\$3,200,000}{\$2,000,000}} = \frac{\text{Fixed Assets (net)}}{\text{Long-Term Liabilities}} = 1.6$$

B.
$$\frac{\text{Ratio of Liabilities to Stockholders' Equity}}{\frac{\$3,000,000}{\$5,000,000}} = \frac{\text{Total Liabilities}}{\text{Total Stockholders' Equity}} = 0.6$$

C.
$$\frac{\text{Asset Turnover}}{\frac{\$18,900,000}{\$4,500,000^*}} = \frac{\text{Sales}}{\text{Average Total Assets (excluding long-term investments)}} = 4.2$$

* Average total assets = [(\$7,000,000 + \$8,000,000) ÷ 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.
$$\frac{\text{Return on Total Assets}}{\frac{\$930,000 + \$120,000^*}{\$7,500,000^{**}}} = \frac{\text{Net Income + Interest Expense}}{\text{Average Total Assets}} = 14.0\%$$

* Interest expense = \$2,000,000 × 6%

** Average total assets = (\$7,000,000 + \$8,000,000) ÷ 2

E.
$$\frac{\text{Return on Stockholders' Equity}}{\frac{\$930,000}{\$4,785,000^*}} = \frac{\text{Net Income}}{\text{Average Total Stockholders' Equity}} = 19.4\%$$

* Average total stockholders' equity = [(\$1,570,000 + \$2,000,000 + \$1,000,000) + \$5,000,000] ÷ 2

F.
$$\frac{\text{Return on Common Stockholders' Equity}}{\frac{\$930,000 - \$100,000^*}{\$3,785,000^{**}}} = \frac{\text{Net Income - Preferred Dividends}}{\text{Average Common Stockholders' Equity}} = 19.4\%$$

* Preferred dividends = (\$1,000,000 ÷ \$100) × \$10

** Average common stockholders' equity = [(\$2,000,000 + \$1,570,000) + (\$2,000,000 + \$2,000,000)] ÷ 2

Ex. 14–20

$$\begin{aligned}
 \text{A.} \quad \text{Times Interest Earned} &= \frac{\text{Income Before Income Tax} + \text{Interest Expense}}{\text{Interest Expense}} \\
 &= \frac{\$3,000,000 + \$400,000^*}{\$400,000} = 8.5 \text{ times}
 \end{aligned}$$

* Interest expense = \$5,000,000 bonds payable × 8%

$$\begin{aligned}
 \text{B.} \quad \text{Earnings per Share} &= \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Common Stock Outstanding}} \\
 \text{on Common Stock} & \\
 &= \frac{\$1,800,000 - \$200,000}{500,000 \text{ shares}^*} = \$3.20
 \end{aligned}$$

* Shares of common stock outstanding = \$5,000,000 ÷ \$10 par value per share

$$\begin{aligned}
 \text{C.} \quad \text{Price-Earnings Ratio} &= \frac{\text{Market Price per Share of Common Stock}}{\text{Earnings per Share}} \\
 &= \frac{\$32.00}{\$3.20} = 10.0
 \end{aligned}$$

$$\begin{aligned}
 \text{D.} \quad \text{Dividends per Share} &= \frac{\text{Dividends on Common Stock}}{\text{Shares of Common Stock Outstanding}} \\
 \text{of Common Stock} & \\
 &= \frac{\$1,200,000}{500,000 \text{ shares}} = \$2.40
 \end{aligned}$$

$$\begin{aligned}
 \text{E.} \quad \text{Dividend Yield} &= \frac{\text{Dividends per Share of Common Stock}}{\text{Market Price per Share of Common Stock}} \\
 &= \frac{\$2.40}{\$32.00} = 7.5\%
 \end{aligned}$$

Ex. 14-21

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

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

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

** Shares of common stock outstanding = $\$10,000,000 \div \20

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

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

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

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

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

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

Ex. 14–22

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

$$\text{Deere \& Company: } \frac{\$86.20}{\$8.71} = 9.9$$

$$\text{Google: } \frac{\$873.32}{\$36.75} = 23.8$$

$$\text{The Coca-Cola Company: } \frac{\$39.79}{\$1.97} = 20.2$$

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

$$\text{Deere \& Company: } \frac{\$2.04}{\$86.20} = 2.4\%$$

$$\text{Google: } \frac{\$0.00}{\$873.32} = 0.0\%$$

$$\text{The Coca-Cola Company: } \frac{\$1.02}{\$39.79} = 2.6\%$$

- B.** Coca-Cola has a large dividend yield and a high price-earnings ratio. Stock market participants value Coca-Cola common stock on the basis of both its dividend and its potential share price appreciation. 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. has the lowest price-earnings ratio. Deere & Co. has a solid dividend, producing a yield of 2.4%. Deere & Co. is expected to produce shareholder returns through a combination of some share price appreciation and a moderate dividend. However, the market does not expect the same share price appreciation they expect from Coca-Cola.

Appendix 1 Ex. 14–23

A. Earnings per share on income before discontinued operations:

Net income.....	\$4,000,000
Gain on discontinued operations.....	<u>(400,000)</u>
Income before discontinued operations.....	<u>\$3,600,000</u>

$$\begin{aligned} \text{Earnings Before Disc. Operations} & & \text{Income Before Discontinued Operations} \\ \text{per Share on Common Stock} & = & \frac{\text{-- Preferred Dividends}}{\text{Shares of Common Stock}} \\ & & \text{Outstanding} \\ \frac{\$3,600,000 - \$200,000^*}{500,000 \text{ shares}} & = & \$6.80 \text{ per share} \end{aligned}$$

* Preferred dividends = 100,000 shares × \$2.00 per share

$$\begin{aligned} \text{B. Earnings per Share on} & & \text{Net Income -- Preferred Dividends} \\ \text{Common Stock} & = & \frac{\text{Shares of Common Stock Outstanding}}{\text{}} \\ \frac{\$4,000,000 - \$200,000}{500,000 \text{ shares}} & = & \$7.60 \text{ per share} \end{aligned}$$

Appendix 1 Ex. 14–24

A.

Apex Inc. Partial Income Statement For the Year Ended December 31	
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
Net income	\$ 360,000

* Income tax expense = \$1,000,000 × 40%

B.

Apex Inc. Partial Income Statement For the Year Ended December 31	
Earnings per common share:	
Income from continuing operations	\$30.00 ¹
Loss from discontinued operations	12.00 ²
Net income	\$18.00

¹EPS on Income from continuing operations = \$30.00 = \$600,000 ÷ 20,000

²EPS on Loss from discontinued operations = \$12.00 = \$240,000 ÷ 20,000

Appendix 1 Ex. 14–25

- 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.

Appendix 2 Ex. 14–26

A.

Anson Industries, Inc. Income Statement For the Year Ended December 31, 20Y1	
Sales	\$4,000,000
Cost of goods sold	2,300,000
Gross profit	\$1,700,000
Operating expenses	1,000,000
Income from operations	\$ 700,000
Income tax expense	280,000
Net income	\$ 420,000
Other comprehensive income	450,000
Comprehensive income	\$ 870,000

B.

Anson Industries, Inc. Income Statement For the Year Ended December 31, 20Y1	
Sales	\$4,000,000
Cost of goods sold	2,300,000
Gross profit	\$1,700,000
Operating expenses	1,000,000
Income from operations	\$ 700,000
Income tax expense	280,000
Net income	\$ 420,000

Anson Industries, Inc. Statement of Comprehensive Income For the Year Ended December 31, 20Y1	
Net income	\$420,000
Other comprehensive income	450,000
Comprehensive income	\$870,000

PROBLEMS

Prob. 14-1A

1.

McDade Company Comparative Income Statement For the Years Ended December 31, 20Y2 and 20Y1				
	20Y2	20Y1	Increase (Decrease)	
			Amount	Percent
Sales	\$16,800,000	\$15,000,00	\$1,800,00	12.0%
Cost of goods sold	11,500,000	10,000,00	1,500,00	15.0%
Gross profit	\$ 5,300,000	\$ 5,000,000	\$ 300,000	6.0%
Selling expenses	\$ 1,770,000	\$ 1,500,000	\$ 270,000	18.0%
Administrative expenses	1,220,000	1,000,000	220,000	22.0%
Total operating expenses	\$ 2,990,000	\$ 2,500,000	\$ 490,000	19.6%
Income from operations	\$ 2,310,000	\$ 2,500,000	\$ (190,000)	(7.6%)
Other income	256,950	225,000	31,950	14.2%
Income before income tax	\$ 2,566,950	\$ 2,725,000	\$ (158,050)	(5.8%)
Income tax expense	1,413,000	1,500,000	(87,000)	(5.8%)
Net income	\$ 1,153,950	\$ 1,225,000	\$ (71,050)	(5.8%)

2. Net income has declined from 20Y1 to 20Y2. Sales have increased by 12.0%; however, the cost of goods sold has increased by 15.0%, causing the gross profit to increase at a slower pace than sales. In addition, total operating expenses have increased at a faster rate than sales (19.6% increase vs. 12.0% sales increase). Increases in costs and expenses that are higher than the increase in sales have caused the net income to decline by 5.8%.

Prob. 14-2A

1.

Tri-Comic Company				
Comparative Income Statement				
For the Years Ended December 31, 20Y2 and 20Y1				
	20Y2		20Y1	
	Amount	Percent	Amount	Percent
Sales	\$1,500,000	100.0%	\$1,250,000	100.0%
Cost of goods sold	510,000	34.0%	475,000	38.0%
Gross profit	\$ 990,000	66.0%	\$ 775,000	62.0%
Selling expenses	270,000	18.0%	200,000	16.0%
Administrative expenses	180,000	12.0%	156,250	12.5%
Total operating expenses	\$ 450,000	30.0%	\$ 356,250	28.5%
Income from operations	\$ 540,000	36.0%	\$ 418,750	33.5%
Other income	60,000	4.0%	50,000	4.0%
Income before income tax	\$ 600,000	40.0%	\$ 468,750	37.5%
Income tax expense	450,000	30.0%	375,000	30.0%
Net income	\$ 150,000	10.0%	\$ 93,750	7.5%

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 7.5% to 10.0%. 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

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		
				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

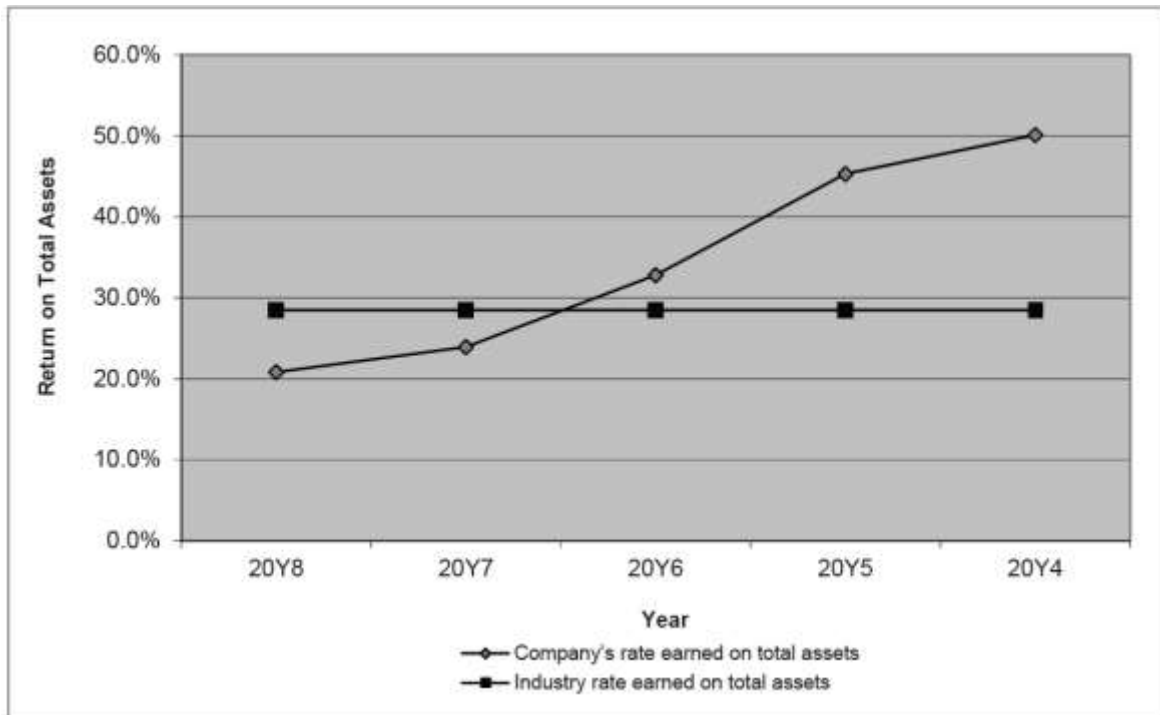
Prob. 14-4A

1. Working Capital: $\$2,464,000 - \$880,000 = \$1,584,000$

Ratio	Numerator	Denominator	Calculated Value
2. Current ratio	\$2,464,000	\$880,000	2.8
3. Quick ratio	\$1,936,000	\$880,000	2.2
4. Accounts receivable turnover	\$10,850,000	$(\$585,000 + \$500,000) \div 2$	20.0
5. Number of days' sales in receivables	$(\$585,000 + \$500,000) \div 2$	$\$10,850,000 \div 365$	18.3
6. Inventory turnover	\$6,000,000	$(\$420,000 + \$380,000) \div 2$	15.0
7. Number of days' sales in inventory	$(\$420,000 + \$380,000) \div 2$	$\$6,000,000 \div 365$	24.3
8. Ratio of fixed assets to long-term liabilities	\$5,760,000	\$3,200,000	1.8
9. Ratio of liabilities to stockholders' equity	\$4,080,000	\$4,944,000	0.8
10. Times interest earned	$\$1,020,000 + \$132,000$	\$132,000	8.7
11. Asset turnover	\$10,850,000	$(\$8,224,000 + \$7,454,000) \div 2$	1.4
12. Return on total assets	$\$600,000 + \$132,000$	$(\$9,024,000 + \$8,254,000) \div 2$	8.5%
13. Return on stockholders' equity	\$600,000	$(\$4,944,000 + \$4,454,000) \div 2$	12.8%
14. Return on common stockholders' equity	$\$600,000 - \$10,000$	$(\$4,694,000 + \$4,204,000) \div 2$	13.3%
15. Earnings per share on common stock	$\$600,000 - \$10,000$	100,000	\$5.90
16. Price-earnings ratio	82.60	5.90	14.0
17. Dividends per share of common stock	\$100,000	100,000	\$1.00
18. Dividend yield	\$1.00	\$82.60	1.2%

Prob. 14-5A

1. A.



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

$$20Y8: \frac{\$889,453}{\$4,270,764} = 20.8\%$$

$$20Y5: \frac{\$1,379,000}{\$3,044,250} = 45.3\%$$

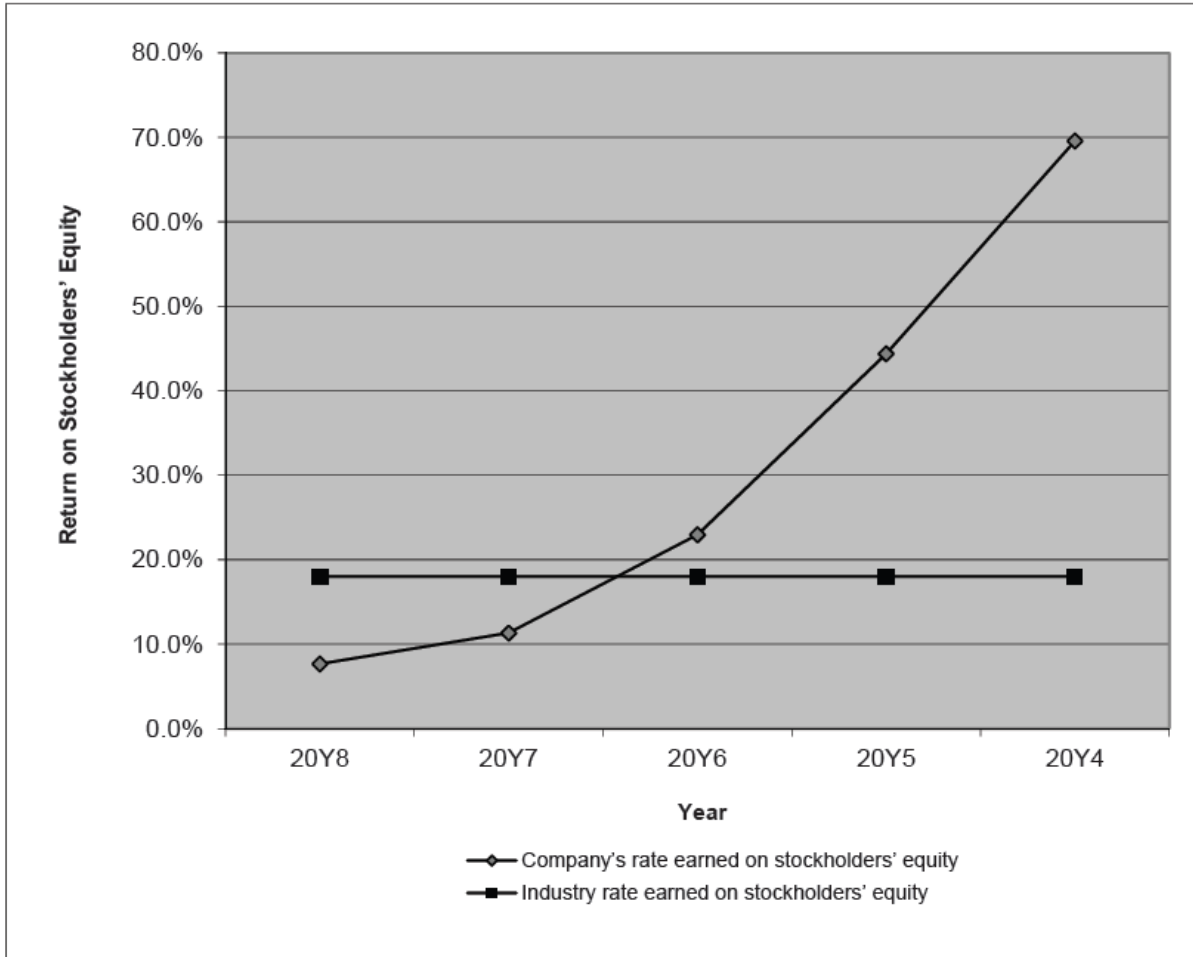
$$20Y7: \frac{\$939,979}{\$3,928,396} = 23.9\%$$

$$20Y4: \frac{\$1,240,000}{\$2,475,000} = 50.1\%$$

$$20Y6: \frac{\$1,159,341}{\$3,535,472} = 32.8\%$$

Prob. 14-5A (Continued)

1. B.



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

$$20Y8: \frac{\$273,406}{\$3,569,855} = 7.7\%$$

$$20Y5: \frac{\$884,000}{\$1,992,000} = 44.4\%$$

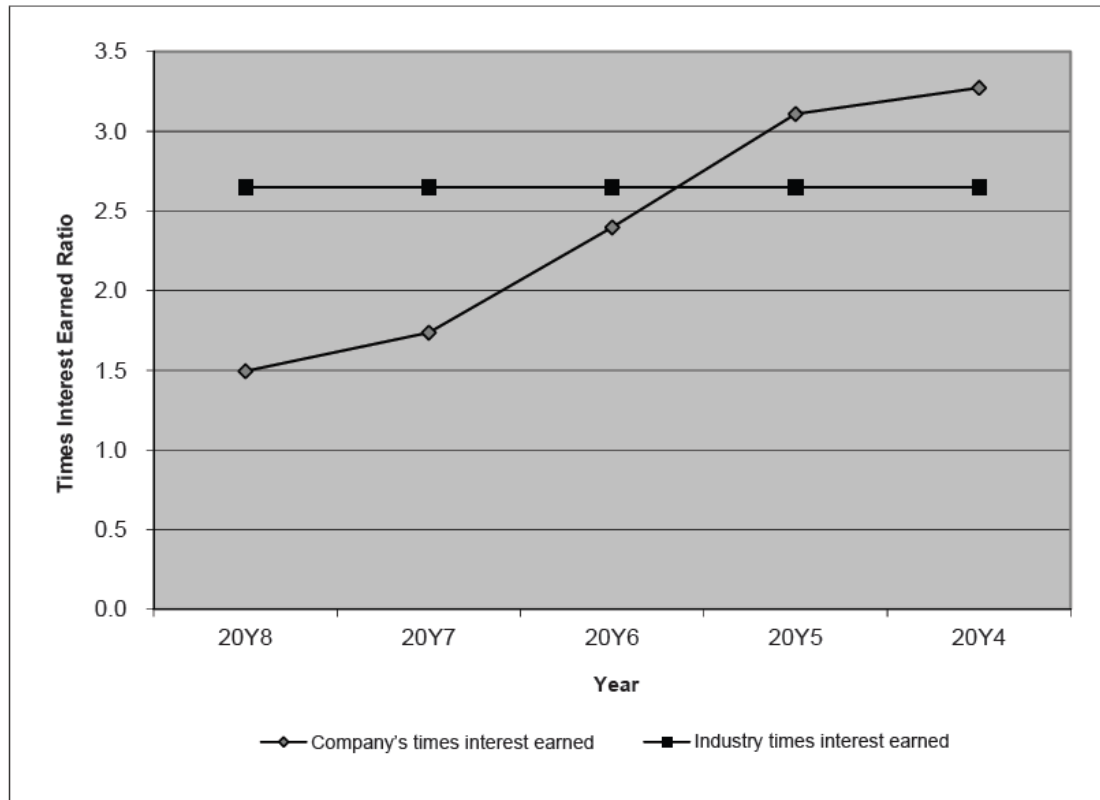
$$20Y7: \frac{\$367,976}{\$3,249,164} = 11.3\%$$

$$20Y4: \frac{\$800,000}{\$1,150,000} = 69.6\%$$

$$20Y6: \frac{\$631,176}{\$2,749,588} = 23.0\%$$

Prob. 14-5A (Continued)

1. C.



$$\text{Times Interest Earned} = \frac{\text{Net Income} + \text{Income Tax Expense} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$20Y8: \frac{\$921,202}{\$616,047} = 1.5$$

$$20Y5: \frac{\$1,539,000}{\$495,000} = 3.1$$

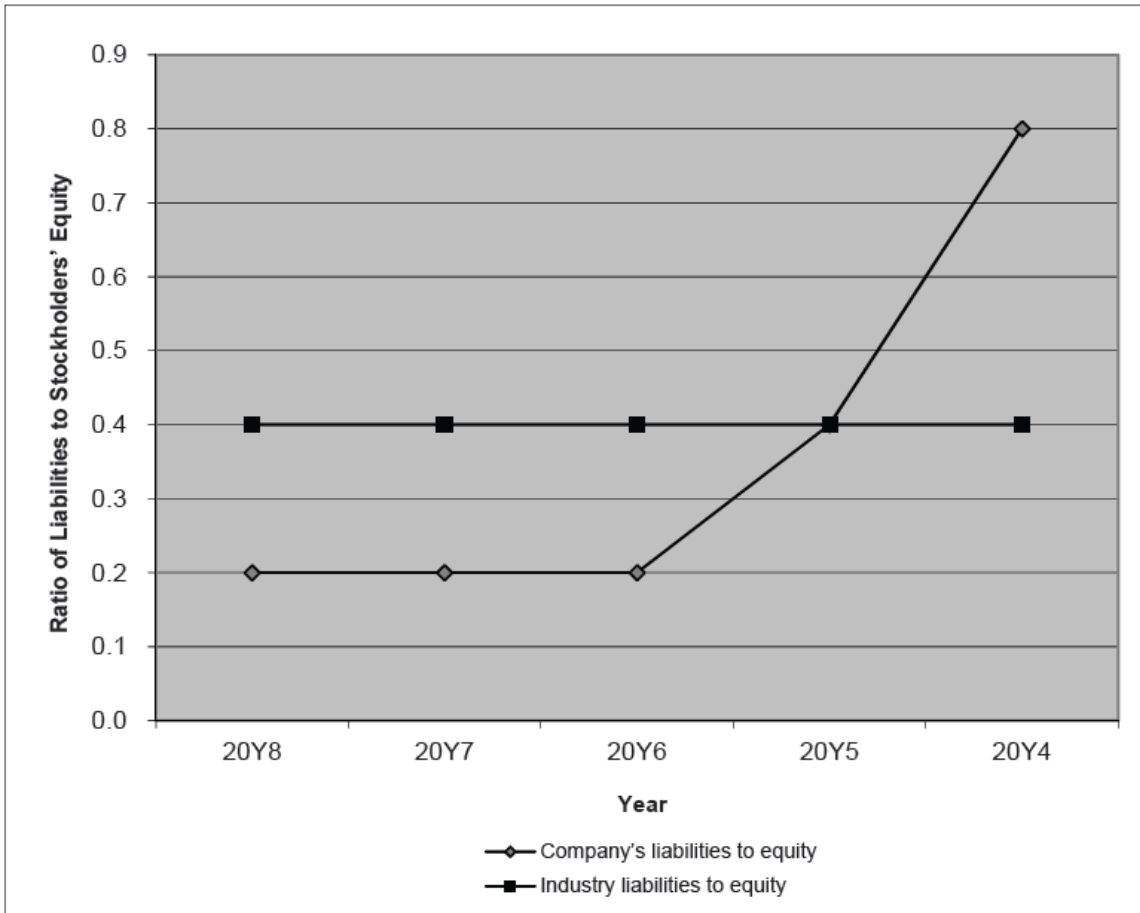
$$20Y7: \frac{\$993,539}{\$572,003} = 1.7$$

$$20Y4: \frac{\$1,440,000}{\$440,000} = 3.3$$

$$20Y6: \frac{\$1,266,061}{\$528,165} = 2.4$$

Prob. 14-5A (Continued)

1. D.



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

$$20Y8: \frac{\$710,621}{\$3,706,557} = 0.2$$

$$20Y5: \frac{\$904,500}{\$2,434,000} = 0.4$$

$$20Y7: \frac{\$691,198}{\$3,433,152} = 0.2$$

$$20Y4: \frac{\$1,200,000}{\$1,550,000} = 0.8$$

$$20Y6: \frac{\$667,267}{\$3,065,176} = 0.2$$

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

Prob. 14–5A (Concluded)

- 2. Both the return on total assets and the return 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 times interest earned has been falling below the industry average for several years. This is the result of low profitability combined with high interest costs. The times interest earned fell to a dangerously low level in 20Y8.**

Prob. 14-1B

1.

Macklin Inc.				
Comparative Income Statement				
For the Years Ended December 31, 20Y2 and 20Y1				
	20Y2	20Y1	Increase (Decrease)	
			Amount	Percent
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 20Y1 to 20Y2. Sales have increased by 30% over the 20Y1 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

1.

Fielder Industries Inc.				
Comparative Income Statement				
For the Years Ended December 31, 20Y2 and 20Y1				
	20Y2		20Y1	
	Amount	Percent	Amount	Percent
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 between 20Y1 and 20Y2. 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

1. A. Working Capital = Current Assets – Current Liabilities

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

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

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

C. 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		
				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

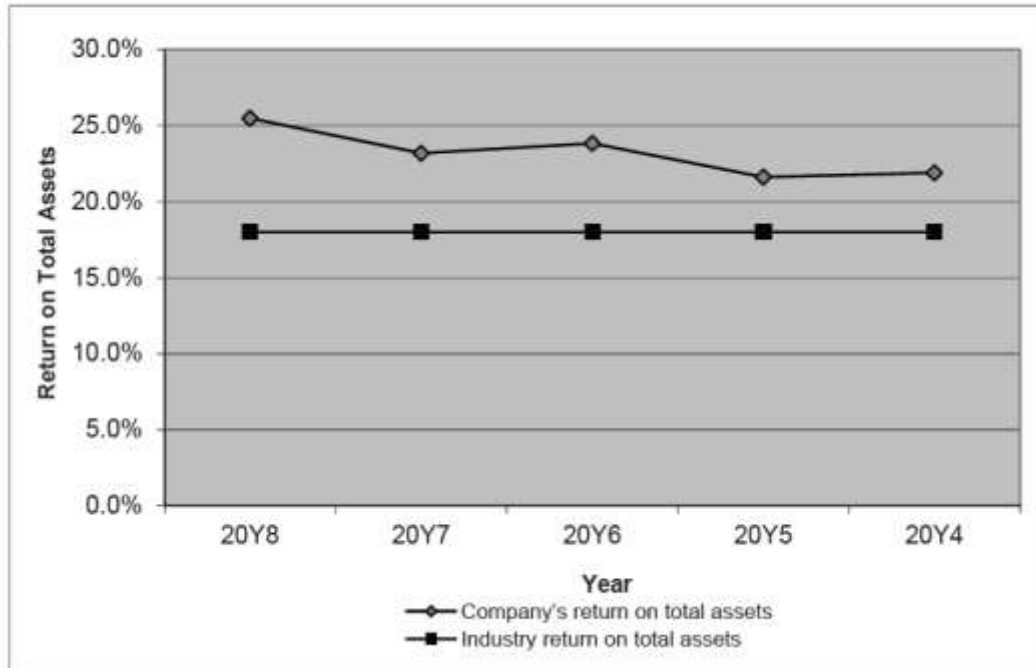
Prob. 14-4B

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. Times interest earned	$\$1,130,000 + \$170,000$	\$170,000	7.6
11. Asset turnover	10,000,000	$(\$7,430,000 + \$6,455,000) \div 2$	1.4
12. Return on total assets	$\$900,000 + \$170,000$	$(\$9,780,000 + \$8,755,000) \div 2$	11.5%
13. Return on stockholders' equity	\$900,000	$(\$7,180,000 + \$6,375,000) \div 2$	13.3%
14. Return on common stockholders' equity	$\$900,000 - \$45,000$	$(\$6,680,000 + \$5,875,000) \div 2$	13.6%
15. Earnings per share on common stock	$\$900,000 - \$45,000$	100,000	\$8.55
16. Price-earnings ratio	119.70	8.55	14.0
17. Dividends per share of common stock	\$50,000	100,000	\$0.50
18. Dividend yield	\$0.50	\$119.70	0.4%

Prob. 14-5B

1. A.



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

$$20Y8: \frac{\$6,623,780}{\$25,988,665} = 25.5\%$$

$$20Y5: \frac{\$2,458,000}{\$11,370,240} = 21.6\%$$

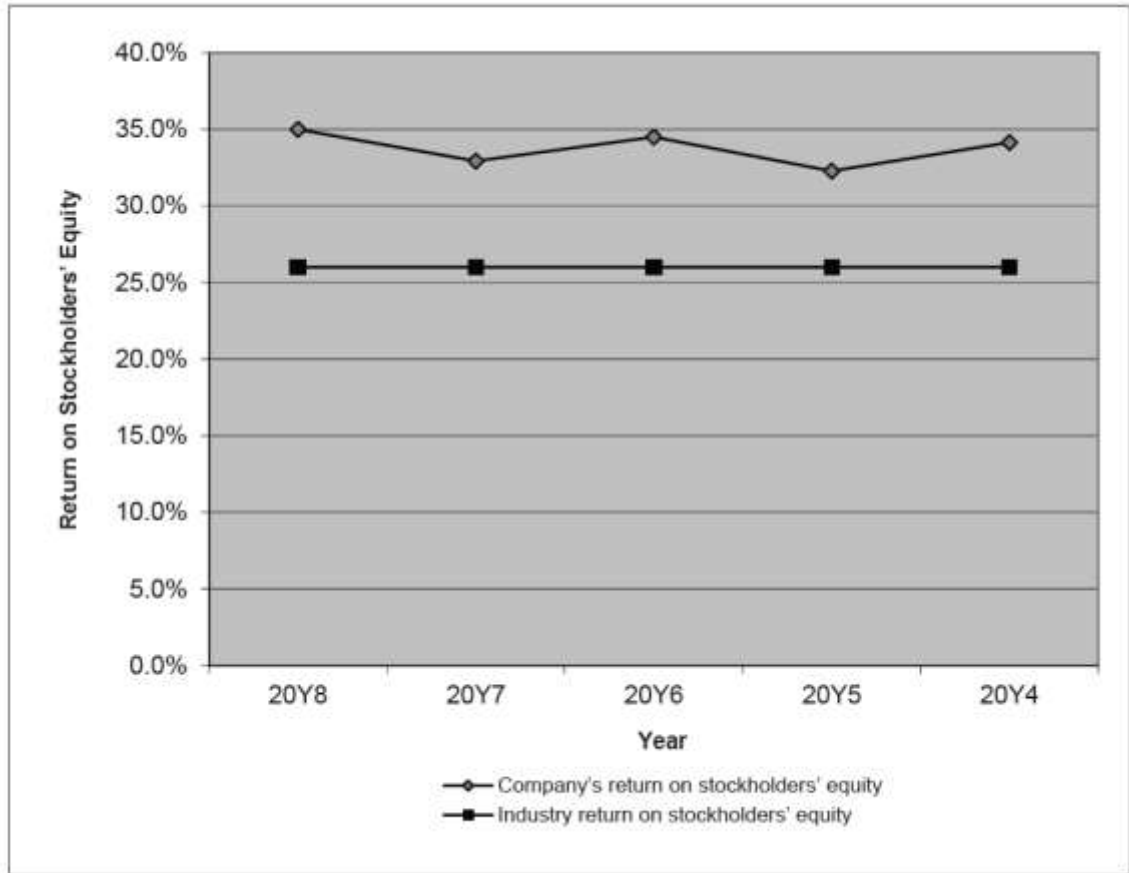
$$20Y7: \frac{\$4,606,056}{\$19,859,586} = 23.2\%$$

$$20Y4: \frac{\$1,900,000}{\$8,676,000} = 21.9\%$$

$$20Y6: \frac{\$3,540,600}{\$14,854,406} = 23.8\%$$

Prob. 14-5B (Continued)

1. B.



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

$$20Y8: \frac{\$5,571,720}{\$15,920,340} = 35.0\%$$

$$20Y5: \frac{\$1,848,000}{\$5,724,000} = 32.3\%$$

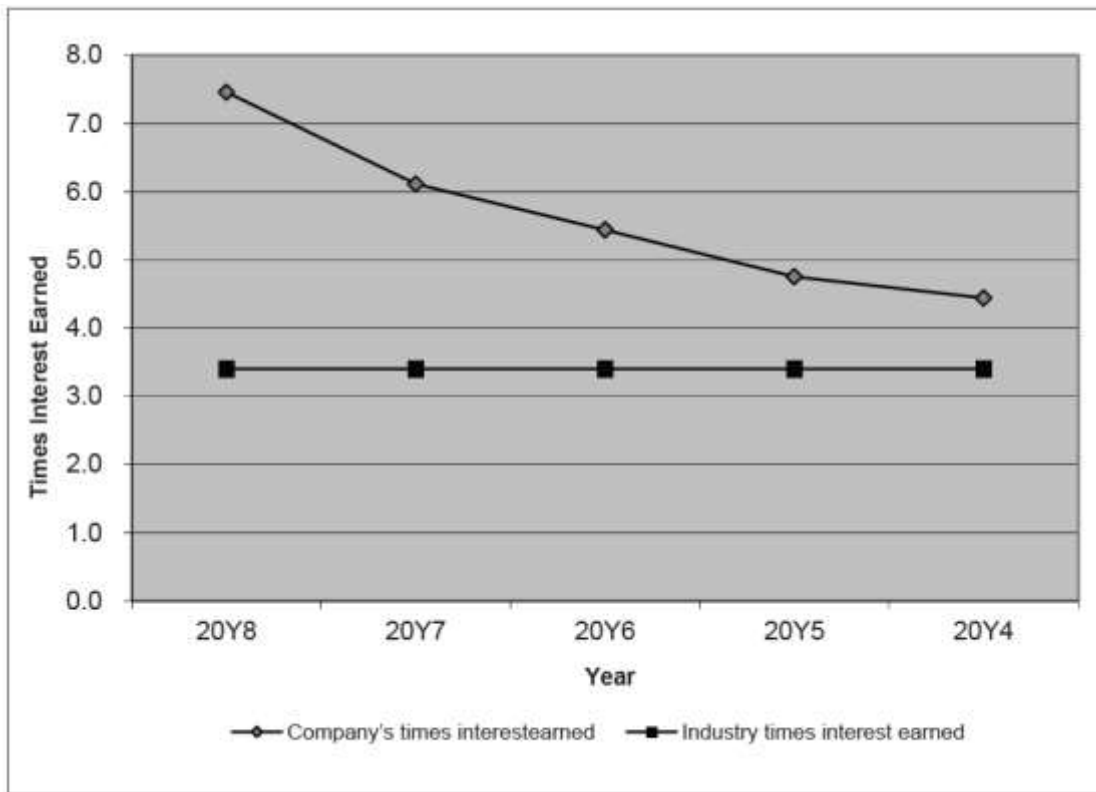
$$20Y7: \frac{\$3,714,480}{\$11,277,240} = 32.9\%$$

$$20Y4: \frac{\$1,400,000}{\$4,100,000} = 34.1\%$$

$$20Y6: \frac{\$2,772,000}{\$8,034,000} = 34.5\%$$

Prob. 14-5B (Continued)

1. C.



$$\text{Times Interest Earned} = \frac{\text{Net Income} + \text{Income Tax Expense} + \text{Interest Expense}}{\text{Interest Expense}}$$

$$20Y8: \frac{\$7,849,352}{\$1,052,060} = 7.5$$

$$20Y5: \frac{\$2,899,600}{\$610,000} = 4.8$$

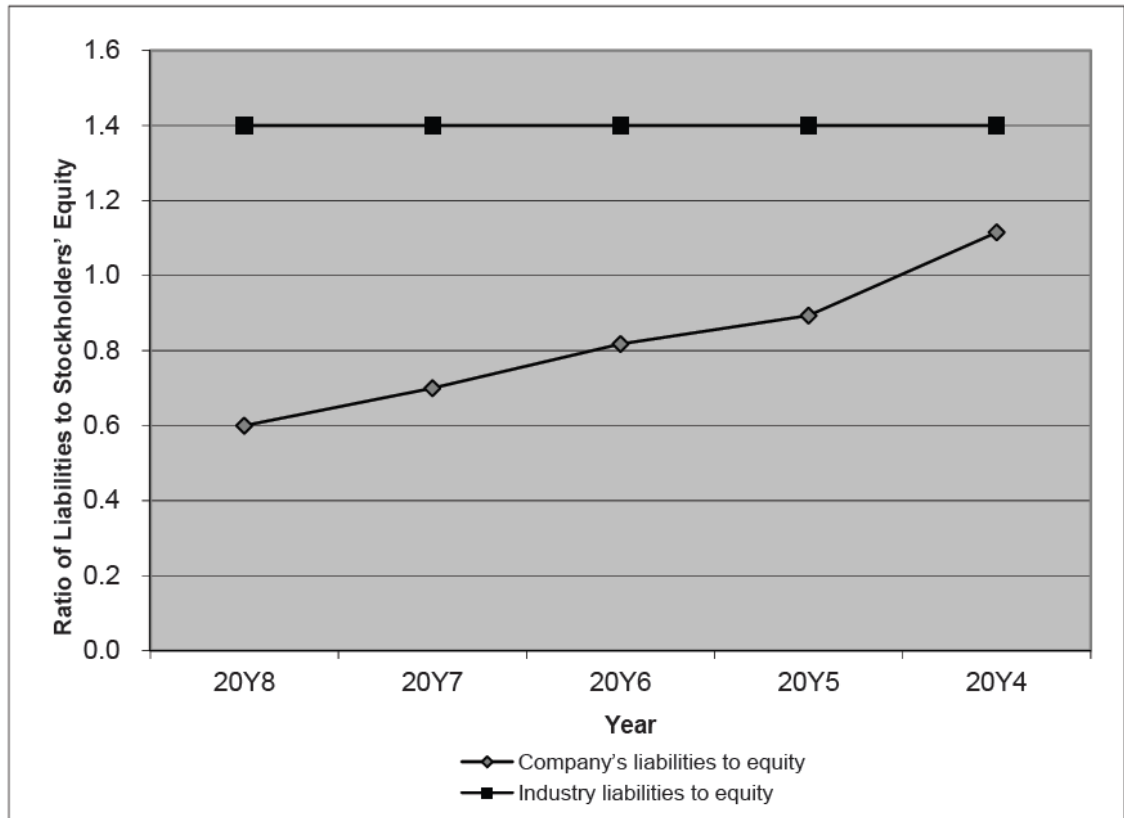
$$20Y7: \frac{\$5,451,278}{\$891,576} = 6.1$$

$$20Y4: \frac{\$2,220,000}{\$500,000} = 4.4$$

$$20Y6: \frac{\$4,180,920}{\$768,600} = 5.4$$

Prob. 14-5B (Continued)

1. D.



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

$$20Y8: \frac{\$10,672,291}{\$18,706,200} = 0.6$$

$$20Y5: \frac{\$5,940,480}{\$6,648,000} = 0.9$$

$$20Y7: \frac{\$9,464,359}{\$13,134,480} = 0.7$$

$$20Y4: \frac{\$5,352,000}{\$4,800,000} = 1.1$$

$$20Y6: \frac{\$7,700,333}{\$9,420,000} = 0.8$$

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

Prob. 14–5B (Concluded)

- 2. Both the return on total assets and the return on stockholders' equity are above the industry average for all five years. The return on total assets is actually improving gradually. The return on stockholders' equity exceeds the return 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 times interest earned ratio 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 2015	Fiscal 2014
1. A. Current assets	\$15,976.0	\$13,696.0
Current liabilities	<u>6,334.0</u>	<u>5,027.0</u>
Working capital	<u>\$ 9,642.0</u>	<u>\$ 8,669.0</u>
B. Current assets.....	\$15,976.0	\$13,696.0
÷ Current liabilities	<u>6,334.0</u>	<u>5,027.0</u>
Current ratio	<u>2.5</u>	<u>2.7</u>
C. Quick assets:		
Cash	\$ 3,852.0	\$ 2,220.0
Short-term investments	2,072.0	2,922.0
Accounts receivable	<u>3,358.0</u>	<u>3,434.0</u>
Total quick assets	\$ 9,282.0	\$ 8,576.0
÷ Current liabilities	<u>6,334.0</u>	<u>5,027.0</u>
Quick ratio	<u>1.5</u>	<u>1.7</u>
D. Sales.....	<u>\$30,601.0</u>	<u>\$27,799.0</u>
Accounts receivable (net):		
Beginning of year	\$ 3,434.0	\$ 3,117.0
End of year	<u>3,358.0</u>	<u>3,434.0</u>
Total.....	\$ 6,792.0	\$ 6,551.0
Average accounts receivable (Total ÷ 2).....	<u>3,396.0</u>	<u>3,275.5</u>
Accounts receivable turnover (Sales ÷ Average accounts receivable)	<u>9.0</u>	<u>8.5</u>
E. Average daily sales:		
Sales	\$30,601.0	\$27,799.0
÷ 365	<u>365</u>	<u>365</u>
Average daily sales (Sales ÷ 365).....	83.8	76.2
Average accounts receivable (Total ÷ 2).....	3,396.0	3,275.5
÷ Average daily sales	<u>83.8</u>	<u>76.2</u>
Number of days' sales in receivables	<u>40.5</u>	<u>43.0</u>
F. Cost of goods sold	<u>\$16,534.0</u>	<u>\$15,353.0</u>
Inventories:		
Beginning of year	\$ 3,947.0	\$ 3,484.0
End of year	<u>4,337.0</u>	<u>3,947.0</u>
Total.....	\$ 8,284.0	\$ 7,431.0
Average inventory (Total ÷ 2)	<u>4,142.0</u>	<u>3,715.5</u>
Inventory turnover (Cost of goods sold ÷ Average inventory).....	<u>4.0</u>	<u>4.1</u>

NIKE, INC., PROBLEM (Continued)

	<u>Fiscal 2015</u>	<u>Fiscal 2014</u>
G. Inventory (average).....	\$ 4,142.0	\$ 3,715.5
Cost of goods sold	16,534.0	15,353.0
Average daily cost of goods sold	<u>45.3</u>	<u>42.1</u>
Number of days' sales in inventory (Average inventory ÷ Average daily cost of goods sold).....	<u>91.4</u>	<u>88.3</u>
H. Total liabilities.....	\$ 8,893.0	\$ 7,770.0
÷ Total stockholders' equity	<u>12,707.0</u>	<u>10,824.0</u>
Ratio of liabilities to stockholders' equity	<u>0.7</u>	<u>0.7</u>
I. Sales	<u>\$30,601.0</u>	<u>\$27,799.0</u>
Total assets (excluding long-term investments):		
Beginning of year	\$18,594.0	\$17,545.0
End of year	<u>21,600.0</u>	<u>18,594.0</u>
Total	\$40,194.0	\$36,139.0
Average total assets	<u>20,097.0</u>	<u>18,069.5</u>
Asset turnover	<u>1.5</u>	<u>1.5</u>
J. Net income	\$ 3,273.0	\$ 2,693.0
Interest expense	<u>28.0</u>	<u>24.0</u>
Total	<u>\$ 3,301.0</u>	<u>\$ 2,717.0</u>
Total assets:		
Beginning of year	\$18,594.0	\$17,545.0
End of year	<u>21,600.0</u>	<u>18,594.0</u>
Total.....	\$40,194.0	\$36,139.0
Average total assets	<u>20,097.0</u>	<u>18,069.5</u>
Return on total assets [(Net income + Interest expense) ÷ Average total assets]	<u>16.4%</u>	<u>15.0%</u>
K. Net income	<u>\$ 3,273.0</u>	<u>\$ 2,693.0</u>
Stockholders' equity:		
Beginning of year	\$10,824.0	\$11,081.0
End of year	<u>12,707.0</u>	<u>10,824.0</u>
Total.....	\$23,531.0	\$21,905.0
Average common stockholders' equity	<u>11,765.5</u>	<u>10,952.5</u>
Return on common stockholders' equity	<u>27.8%</u>	<u>24.6%</u>
L. Market price per share of common stock.....	\$ 101.67	\$ 76.91
Earnings per share on common stock.....	<u>3.80</u>	<u>3.05</u>

Price-earnings ratio.....	<u>26.8</u>	<u>25.2</u>
NIKE, INC., PROBLEM (Concluded)		
	Fiscal	Fiscal
	2015	2014
M. Net income.....	\$ 3,273.0	\$ 2,693.0
Sales	<u>30,601.0</u>	<u>27,799.0</u>
Net income to sales.....	<u>10.7%</u>	<u>9.7%</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 increased between 2014 and 2015.
 - B. and C. The current and quick ratios both decreased during 2015.
 - D. and E. The accounts receivable turnover and the number of days' sales in receivables indicate an increase in the efficiency of collecting accounts receivable. The accounts receivable turnover increased from 8.5 to 9.0. The number of days' sales in receivables decreased slightly from 43.0 to 40.5. 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 decrease in inventory turnover and an increase 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 constant. 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 return on total assets increased during 2015. This increase was from Nike's net income increasing at a faster pace than total assets during 2015. Overall, returns on assets that exceed 10% are usually considered good performance.
 - K. The return on common stockholders' equity increased. This increase was due to Nike's strong earnings performance in 2015.
 - L. The price-earnings ratio increased somewhat from 2014 to 2015. This increase was driven by an increase in Nike's earnings per share (from \$3.05 in fiscal 2014 to \$3.80 in fiscal 2015) combined with a sizable increase in stock price during the same period.
 - M. The percent of net income to sales increased during 2015.

ANALYSIS FOR DECISION MAKING

ADM-1

1.

	Amazon	Best Buy	Walmart
Sales	100.0%	100.0%	100.0%
Cost of sales	<u>70.5%</u>	<u>77.6%</u>	<u>75.2%</u>
Gross profit	29.5%	22.4%	24.8%
Selling, general, and administrative expenses	29.3%	18.8%	19.2%
Operating expenses	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>
Income from operations	<u>0.2%</u>	<u>3.6%</u>	<u>5.6%</u>

2. Amazon has the highest gross profit on a percentage basis, but has the lowest income from operations on a percentage basis. This is because of the relatively large percentage of sales that is used for selling, general, and administrative activities. Walmart has the lowest gross profit on a percentage basis, but generates a very strong income from operations on a percentage basis. This is consistent with the company's business strategy, in that it seeks to sell a large quantity of items at a very low margin. Comparatively, Best Buy has relatively strong gross profit and income from operations percentages. This is also consistent with Best Buy's strategy, which is to sell fewer goods at a higher profit margin.

ADM-2

1.

A.
$$\text{Return on Total Assets} = \frac{\text{Net Income} + \text{Interest Expense}}{\text{Average Total Assets}}$$

Year 3:
$$\frac{\$3,064.7 + \$782.8}{\$52,237} = 7.4\%$$

Year 2:
$$\frac{\$2,799.9 + \$759.4}{\$45,737} = 7.8\%$$

Year 1:
$$\frac{\$1,865.0 + \$811.4}{\$42,200} = 6.4\%$$

B.
$$\text{Return on Total Stockholders' Equity} = \frac{\text{Net Income}}{\text{Average Stockholders' Equity}}$$

Year 3:
$$\frac{\$3,064.7}{\$6,821} = 44.9\%$$

Year 2:
$$\frac{\$2,799.9}{\$6,545} = 42.8\%$$

Year 1:
$$\frac{\$1,865.0}{\$5,555} = 33.6\%$$

ADM-2 (Concluded)

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

$$\text{Year 3: } \frac{\$3,064.7 - \$0}{397} = \$7.72$$

$$\text{Year 2: } \frac{\$2,799.9 - \$0}{417} = \$6.71$$

$$\text{Year 1: } \frac{\$1,865.0 - \$0}{424} = \$4.40$$

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

$$\text{Year 3: } \frac{\$1.79}{\$79.27} = 2.3\%$$

$$\text{Year 2: } \frac{\$1.52}{\$80.48} = 1.9\%$$

$$\text{Year 1: } \frac{\$1.16}{\$61.18} = 1.9\%$$

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

$$\text{Year 3: } \frac{\$79.27}{\$7.72} = 10.3$$

$$\text{Year 2: } \frac{\$80.48}{\$6.71} = 12.0$$

$$\text{Year 1: } \frac{\$61.18}{\$4.40} = 13.9$$

2. Deere's profitability, as measured by earnings per share, has improved significantly during the three-year period presented. The returns on total assets and total stockholders' equity have also improved significantly during this period. This is most likely due to the significant improvement in the overall economy, as well as in the construction industry, which improved during Year 2. The rebound in these metrics during the period can be attributed to improved capital equipment spending and to a jump in commodity prices that fueled increases in the sales of farm equipment. The dividend yield increased significantly in Year 3 due to a large increase in the cash dividend. The price-earnings ratio has deteriorated during this three-year period as the share price has increased at a slower pace than earnings.

ADM-3

1.

A. Return 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. Return 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. Times Interest 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. 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
A. Return on total assets	7.5%	1.7%
B. Return on stockholders' equity	33.6%	1.3%
C. Times interest earned	4.1	2.9
D. Ratio of liabilities to stockholders' equity	4.7	0.4

ADM-3 (Concluded)

- 2. Marriott has a higher return on total assets (7.5% vs. 1.7%) and a higher return 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 ratio of liabilities to stockholders' equity, which shows that the relative debt held by Marriott is 4.7 times stockholders' equity, compared to 0.4 times for Hyatt. The times interest earned ratio 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 return 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.**

TAKE IT FURTHER

TIF 14–1

No, Josh did not behave ethically. The Sarbanes-Oxley Act of 2002 requires a report on internal control by management. This report acknowledges management's responsibility for establishing and maintaining internal control. In addition, management's assessment of the effectiveness of internal controls over financial reporting is included in the report. Josh committed a violation of the Sarbanes-Oxley Act when he falsely reported that the company's internal controls were effective. This is punishable by both fines and imprisonment.

TIF 14–2

Sample solution based on Nike's 2014 financial statements.

	<u>Fiscal</u> <u>2014</u>
A. (1) Current assets.....	\$13,696.0
Current liabilities	<u>5,027.0</u>
Working capital	<u>\$ 8,669.0</u>
(2) Current assets.....	\$13,696.0
÷ Current liabilities.....	<u>5,027.0</u>
Current ratio	<u>2.7</u>
(3) Quick assets:	
Cash	\$ 2,220.0
Short-term investments	2,922.0
Accounts receivable	<u>3,434.0</u>
Total quick assets	\$ 8,576.0
÷ Current liabilities.....	<u>5,027.0</u>
Quick ratio	<u>1.7</u>
(4) Sales.....	<u>\$27,799.0</u>
Accounts receivable (net):	
Beginning of year	\$ 3,117.0
End of year	<u>3,434.0</u>
Total.....	\$ 6,551.0
Average accounts receivable (Total ÷ 2)	<u>3,275.5</u>
Accounts receivable turnover	
(Sales ÷ Average accounts receivable).....	<u>8.5</u>
(5) Accounts receivable (average)	\$ 3,275.5
Sales.....	27,799.0
Average daily sales (Sales ÷ 365)	<u>76.2</u>
Number of days' sales in receivables	
(Average accounts receivable ÷ Average daily sales).....	<u>43.0</u>
(6) Cost of goods sold.....	<u>\$15,353.0</u>
Inventories:	
Beginning of year	\$ 3,484.0
End of year	<u>3,947.0</u>
Total.....	\$ 7,431.0
Average inventory (Total ÷ 2).....	<u>3,715.5</u>
Inventory turnover	
(Cost of goods sold ÷ Average inventory).....	<u>4.1</u>

TIF 14–2 (Continued)

	<u>Fiscal 2014</u>
(7) Inventory (average).....	\$ 3,715.5
Cost of goods sold	15,353.0
Average daily cost of goods sold (COGS ÷ 365)	<u>42.1</u>
Number of days' sales in inventory (Average inventory ÷ Average daily cost of goods sold).....	<u>88.3</u>
B. (1) Total liabilities	\$ 7,770.0
÷ Total stockholders' equity	<u>10,824.0</u>
Ratio of liabilities to stockholders' equity.....	<u>0.7</u>
(2) Nike has minimal interest expense. As a result, the times interest earned ratio is not applicable.	
C. (1) Sales	<u>\$27,799.0</u>
Total assets (excluding long-term investments*):	
Beginning of year.....	\$17,545.0
End of year.....	<u>18,594.0</u>
Total.....	\$36,139.0
Average total assets (Total ÷ 2)	<u>18,069.5</u>
Asset turnover (Sales ÷ Average total assets)	<u>1.5</u>
* Note: Nike had \$0 long-term investments.	
(2) Net income	\$ 2,693.0
Interest expense	<u>23.0</u>
Total.....	<u>\$ 2,716.0</u>
Total assets:	
Beginning of year.....	\$17,545.0
End of year.....	<u>18,594.0</u>
Total.....	\$36,139.0
Average total assets (Total ÷ 2)	<u>18,069.5</u>
Return on total assets	
[(Net income + Interest expense) ÷ Average total assets]	<u>15.0%</u>
(3) Net income	<u>\$ 2,693.0</u>
Stockholders' equity:	
Beginning of year.....	\$11,081.0
End of year.....	<u>10,824.0</u>
Total.....	\$21,905.0
Average stockholders' equity (Total ÷ 2)	<u>10,952.5</u>
Return on stockholders' equity	
(Net income ÷ Average common stockholders' equity).....	<u>24.6%</u>

TIF 14–2 (Concluded)

(4) Net income	\$ 2,693.0
÷ Number of shares of common stock	<u>882.9</u>
Earnings per share.....	<u>\$ 3.05</u>
(5) Market price per share of common stock.....	\$ 101.67
Earnings per share on common stock	<u>3.05</u>
Price-earnings ratio.....	<u>33.3</u>

TIF 14–3

To: Boss Freeman
From: A+ Student
Re: Debt vs. Equity Financing

I have reviewed your company history and appreciate the challenges your company has faced during economic downturns. While your conservative approach to debt financing is commendable, your unwillingness to issue debt could limit your potential for future success. Financing future growth exclusively through retained earnings and additional stock sales does not allow the shareholders to take advantage of leverage. As a result, the return on stockholders' equity is limited. While no debt does provide the company great flexibility in the event of a national calamity, the probability of this happening is very low. During normal business operations, your company can assume some debt without significantly increasing the risk of losing control of the company. Freeman Industries is competing against companies that will not be so inclined to avoid debt. As a result, your competitors will likely be able to grow faster. Management should carefully consider the strategic risks that could result from the company's conservative financing policies when establishing the company's debt load.