Chapter 18

Financial Statement Analysis

Questions

1. Three groups of users of accounting information are managers, investors and creditors. *Managers* monitor operations and make business decisions. *Investors* pick certain shares to buy, and, after making an investment, they must decide whether to keep the shares or sell them. *Banks* (and other creditors) decide which loans (and other debt) to approve.

2. *Horizontal analysis* is the study of percentage changes in comparative financial statements. Decision makers may trace the percentage changes in accounts over time to analyze trends.

3. *Vertical analysis* of a financial statement shows the relationship of each statement item to a base amount: total assets on the balance sheet and total revenues on the income statement. Its purpose is to show what percent of the base is represented by each item listed on a financial statement.

4. Common-size statements are used to compare a company from period to period, a company to its industry average, and companies of different sizes. They present statement information in percentages (not dollar amounts). The purpose of common-size statements is to ease the comparison of financial statement information. Common-size statements may identify the need for corrective action.

5. Benchmarking is the practice of comparing a company to other companies. An example of benchmarking is the comparison of a company’s financial information to the industry average or to a leading company in the industry.

6. Two ratios used to measure the ability to pay current liabilities are the current ratio and the acid-test ratio. These ratios are computed as follows:

|  |  |  |
| --- | --- | --- |
| Current ratio | = | Current assets |
| Current liabilities |
|  |  |  |
| Acid-test ratio | = | Cash + short-term investments + net current receivables | |
| Current liabilities | |

7. The acid-test ratio is called by this name because it measures the company’s ability to pay its current liabilities if they were to come due immediately (that is, if the company were put to the “acid test” of having to pay all its bills immediately).

8. The inventory turnover ratio measures the number of times a company sells its average level of inventory during a year.

9. An increase in days’ sales in receivables is generally a negative sign about a company. It indicates that the length of time it takes to collect receivables is increasing. The credit and collection department of the company should identify why the ratio has increased and determine the most effective way to improve collections.

10. An increase in a company’s debt ratio is important to the company’s creditors. This increase means that the company has a growing proportion of liabilities to assets. This growth in turn increases the risk that the company will not be able to pay its debts and generally results in the company having to pay a higher interest rate on new borrowings, if new loans are allowed. It would also concern common shareholders, whose chance of getting dividends decreases if the company must pay off debt and pay interest on that debt.

11. (a) The debt ratio—the ratio of total liabilities to total assets—measures the effect of debt on financial position (the balance sheet).

(b) The times-interest-earned ratio—the ratio of income from operations to interest expense—measures the effect of debt on the company’s ability to pay interest expense (the income statement).

12. (a) Either the grocery store chain or the furniture store could have the higher current ratio because of the importance of inventory to each business’s asset structure.

(b) The grocery store chain is likely to have the higher inventory turnover because its inventory is made up of low-cost items such as breakfast cereal and toothpaste, which turn over rapidly. The furniture store’s inventory is more expensive and usually takes longer to sell, so inventory turns over more slowly.

(c) The furniture store is likely to have the higher return on sales because its sales are composed of high-priced items that each bear a higher rate of profit when sold than the grocer’s inventory.

13. Four ratios that measure the ability to earn profits are:

* return on sales
* return on total assets
* return on common shareholders’ equity
* earnings per common share

14. A price–earnings ratio of 3.64 for Air Canada, compared to 10.1 for WestJet Airlines, indicates that the market favours WestJet. The market assigns a price of $3.64 for each $1 of Air Canada earnings, and a price of $10.10 for each $1 of WestJet earnings. In other words, the market is willing to pay a higher price for WestJet relative to its earnings.

15. TransCanada Corporation’s dividend yield is 0.0082, or 0.82% ($0.501÷$61.04). Dividend yield measures the percentage of a share’s market value that is returned annually as dividends to the shareholders.

16. a. Good news—profitability has increased

b. Bad news—amount of earnings for each share has decreased

c. Good news—the company’s ability to pay current liabilities with current assets has increased

d. Bad news—the company is not turning inventory as quickly

e. Bad news—the company is increasingly financing assets with debt

17. Market price generally exceeds book value. An investor may come across a share whose market price is falling to near its book value. He or she may purchase these shares in the hope that they will rise to a higher price in the future.

18. Ratio analysis may indicate that a company has a weakness (as a high temperature indicates to a physician that a patient is ill). However, ratios usually do not reveal what the problem is or how to solve it.

19. An annual report is a document prepared by corporations to share information with owners or other potential investors. Information included goes beyond comparative financial statements. It includes a report from the president, an auditor’s report, the MD&A (management discussion and analysis) section, the notes to the financial statements, and other letters from management.

20. The procedures for analyzing financial statements under ASPE and IFRS are the same. While the absolute numbers may differ, the method for determining the relationships between them and among them are the same.

Starters

*(5-10 min.)* **S18-1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Air Canada** | | | | | **Increase (Decrease)** | | | |
|  | **(*Amounts in millions*)** | | | | **2016** | | **2015** | |
|  | 2016 | 2015 | | 2014 | Amount | Percent | Amount | Percent |
| Net sales | $14,667 | $13,868 | $13,272 | | $799 | 5.76% | $596 | 4.49% |
| Cost of sales | 11,094 | 10,427 | 9,513 | | 667 | 6.40% | 914 | 9.61% |
| Gross margin | $3,573 | $3,441 | $3,759 | | $132 | 3.84% | ($318) | (8.46%) |

*(5-10 min.)* **S18-2**

1. Trend percentages:

2016 2015 2014

Net sales 111% 104% 100%

Net income 876 303 100

2. Net sales increased in both years, but net income increased at a significantly faster rate.

*(10 min.)* **S18-3**

|  |  |  |
| --- | --- | --- |
|  | **Amount** | **Percent** |
| Net sales | $310,550 | 100.0% |
| Cost of goods sold | 148,800 | 47.9 |
| Gross margin | 161,750 | 52.1 |
| Selling and general expenses | 107,150 | 34.5 |
| Income from operations | 54,600 | 17.6 |
| Income tax expense | 20,725 | 6.7 |
| Net income | $ 33,875 | 10.9 |

Expenses are lower than the benchmark. KONE has selling and general expenses that are 34.5 percent of sales, while its competitors have expenses that are 37 percent of their sales.

*(5-10 min.)* **S18-4**

Vertical analysis of assets:

|  |  |  |
| --- | --- | --- |
|  | **2020** | |
|  | **Amount** | **Percent** |
| Cash and receivables | $ 80,640 | 29% |
| Inventory | 56,840 | 20 |
| Property, plant, and equipment, net | 142,520 | 51 |
| Total assets | $280,000 | 100% |

*(10 min.)* **S18-5**

1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **HomePro Corp.** | | **Away Inc.** | |
| **(Amount in thousands)** | **Amount** | **Percent** | **Amount** | **Percent** |
| Net sales | $18,978 | 100.0% | $39,072 | 100.0% |
| Cost of goods sold | 11,570 | 61.0 | 28,202 | 72.2 |
| Other expenses | 6,228 | 32.8 | 8,994 | 23.0 |
| Net income | $ 1,180 | 6.2% | $ 1,876 | 4.8% |

2. Away Inc. earns more net income (in dollars). Students can argue that Away Inc. is more profitable because it earns more net income than HomePro Corp.

3. HomePro Corp.’s net income is a higher percentage of net sales. Other students can argue that HomePro Corp. is more profitable because it earns a higher percentage of profit on each dollar of sales than Away Inc. does.  
  
These data show how common-size financial statements enable us to compare companies of different sizes.

*(5 min.)* **S18-6**

1. g

2. d

3. e

4. c

5. b

6. a

7. f

*(5 min.)* **S18-7**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ratio | Liquidity | Efficiency | Solvency | Profitability |
| Return on common shareholders’ equity |  |  |  | ✓ |
| Inventory turnover |  | ✓ |  |  |
| Current ratio | ✓ |  |  |  |
| Debt/equity ratio |  |  | ✓ |  |
| Acid-test ratio | ✓ |  |  |  |
| Accounts receivable turnover |  | ✓ |  |  |
| Return on sales |  |  |  | ✓ |

*(5 min.)* **S18-8**

Ratios for which a higher result is better are indicated with a check mark:

\_\_✓\_\_\_ Current ratio \_ \_\_ \_ Debt/equity ratio

\_\_✓\_\_\_ Accounts receivable turnover \_\_✓\_\_ Earnings per common share

\_\_✓\_\_\_ Return on assets \_\_✓\_\_ Return on sales

\_\_✓\_\_\_ Book value per common share \_\_\_\_\_ Days’ sales in inventory

*(5-10 min.)* **S18-9**

1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | *(Dollar amounts in millions)* | | |
| Current Ratio |  | **2020** |  | **2019** |
| Total current assets | = | $13.7 |  | $11.1 |
| Total current liabilities | $ 8.8 |  | $ 7.2 |
|  |  |  |  |  |
|  | = | 1.56 | = | 1.54 |
| Acid-test Ratio | |  | | |
|  |  | 2020 |  | 2019 |
| Cash + short term investments |  |  |  |  |
| + net current receivables | = | $3.7 |  | $2.5 |
| Total current liabilities | $8.8 |  | $7.2 |
|  |  |  |  |  |
|  | = | 0.42 | = | 0.35 |

2. Bastion Computer Corp.’s ratios improved during 2020.

*(5-10 min.)* **S18-10**

|  |  |  |
| --- | --- | --- |
|  |  | *(Dollar amounts in millions)* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. Inventory turnover | = | Cost of goods sold | = | $42.4 |
| Average inventory | ($9.2 + $8.0)÷2 |

|  |  |  |
| --- | --- | --- |
| = | $42.4 | = 4.93 times |
| $8.6 |

|  |  |
| --- | --- |
| 2. Days’ sales in receivables: |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| One day’s sales | = | $61.6 | = | $0.169 |  |  |
| 365 |
| Days’ sales in receivables | = | Average net receivables | = | $0.450\* | = | 2.66 days |
| One day’s sales | $0.169 |

|  |
| --- |
| \* ($0.5 + $0.4)÷2 = $0.45 |

*(5 min.)* **S18-11**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | *(Dollar amounts in millions)* | | | |
| 1. | Debt ratio | = | Total liabilities | | = | $17.4 | = | | 0.45 |
| Total assets | | $38.3 |
|  | Debt/equity ratio | = | Total liabilities | | = | $17.4 | = | | 0.83 |
| Total equity | | $20.9 |

2. Both of the debt-related ratios are low. The company’s ability to pay its liabilities appears strong and its level of debt is not risky.

*(10 min.)* **S18-12**

*(Dollar amounts in millions)*

1. a. 

b. 

c. Return on common  
shareholder’s equity =

2. These rates of return are quite good.

*(5-10 min.)* **S18-13**

*(Dollar amounts in millions except EPS amounts)*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1. EPS | = | Net income − Preferred dividends | = | $3.6 − $0 | = | $4.50 |
| Number of common shares outstanding | 0.8 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2. Price–earnings ratio | = | Market price per common share | = | $131 | = | 29.11 times |
| EPS | $4.50 |

*(10-15 min.)* **S18-14**

|  |  |
| --- | --- |
| **Income Statement** | |
| Net sales | $3,600 |
| Cost of goods sold | 2,118 (A) |
| Selling and administrative expenses | 855 |
| Interest expenses | 52 (B) |
| Other expenses | 75 |
| Income before taxes | 500 |
| Income tax expense | 158 (C) |
| Net income | $ 342 (D) |

(A) = $395 + $375 × 5.5

2

= $2,118  
  
(B) = $3,600 − $2,118 − $855 − $75 − $500 = $52  
  
(D) = $3,600 × 0.095 = $342  
  
(C) = $500 − $342 = $158

*(15-20 min.)* **S18-15**

|  |  |  |  |
| --- | --- | --- | --- |
| **PASMORE LTD.** | | | |
| Balance Sheet | | | |
| March 31, 2019 | | | |
| **Assets** |  | **Liabilities** |  |
| Current assets |  |  |  |
| Cash | $ 25 |  |  |
| Accounts receivable | 290 (A) | Total current liabilities | $1,050 |
| Inventories | 375 | Long-term note payable | 740 (E) |
| Prepaid expenses | 45 (B) | Other long-term liabilities | 410 |
| Total current assets | 735 (C) |  |  |
| Property, plant, and equipment, net | 1,590 (D) |  |  |
| Other assets | 1,075 | **Shareholders’ equity** | 1,200 |
| Total assets | $3,400 | Total liabilities and equity | $3,400 (F) |

(F) = $3,400 (same as total assets)  
  
(E) = $3,400 − $1,050 − $410 − $1,200 = $740  
  
(C) = $1,050 × 0.70 = $735  
  
(A) = $1,050 × 0.30 = $315; $315− $25 = $290  
  
(B) = $735 − $25 − $290 − $375 = $45  
  
(D) = $3,400 − $735 − $1,075 = $1,590

Exercises

*(10-15 min.*) **E18-1**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **BRIGHT TUTORING INC.** | | | | |
| Horizontal Analysis of Comparative Income Statement | | | | |
| For the Years Ended December 31, 2020 and 2019 | | | | |
|  | **2020** | **2019** | **Increase (Decrease)** | |
| **Amount** | **Percent** |
| Net sales | $533,000 | $465,000 | $68,000 | 14.6% |
|  |  |  |  |  |
| Expenses |  |  |  |  |
| Cost of goods sold | 235,000 | 202,000 | 33,000 | 16.3 |
| Selling and general expenses | 140,000 | 135,000 | 5,000 | 3.7 |
| Interest expense | 10,000 | 6,000 | 4,000 | 66.7 |
| Wages expense | 51,000 | 41,000 | 10,000 | 24.4 |
| Total expenses | 436,000 | 384,000 | 52,000 | 13.5 |
| Net income | $ 97,000 | $81,000 | $ 16,000 | 19.8% |

Net income increased by a higher percentage (19.8%) than did net sales during 2020 because net saes increased at a faster rate (14.6%) than did total expenses (13.5%).

(5-15 min.) **E18-2**

Trend percentages of Ceder Inc.

**2020 2019 2018 2017 2016**

Net sales 124.6% 112.7% 105.4% 92.0% 100%

Net income 141.9% 124.8% 95.2% 78.1% 100%

Net income grew by 41.9 percent during the period, compared to 24.6 percent for net sales.

(10-15 min.) **E18-3**

|  |  |  |
| --- | --- | --- |
| **PURPOSEFUL PRODUCTS INC.** | | |
| Vertical Analysis of Balance Sheet | | |
| December 31, 2020 | | |
|  | **Amount** | **Percent** |
| **Assets** |  |  |
| Total current assets | $219,000 | 41.6% |
| Property, plant, and equipment, net | 267,000 | 50.8 |
| Other assets | 40,000 | 7.6 |
| Total assets | $526,000 | 100.0% |
|  |  |  |
| **Liabilities** |  |  |
| Total current liabilities | $ 85,000 | 16.2% |
| Long-term debt | 156,000 | 29.7 |
| Total liabilities | 241,000 | 45.8\* |
|  |  |  |
| **Shareholders’ Equity** |  |  |
| Total shareholders’ equity | 285,000 | 54.2 |
| Total liabilities and shareholders’ equity | $526,000 | 100.0% |

\*Amounts do not add up due to rounding.

(10-15 min.) **E18-4**

|  |  |  |
| --- | --- | --- |
| **BRIGHT TUTORING INC**. | | |
| Comparative Common-Size Income Statement | | |
| For the Years Ended December 31, 2020 and 2019 | | |
|  | **2020** | **2019** |
| Net sales | 100.0% | 100.0% |
| Expenses |  |  |
| Cost of goods sold | 44.1 | 43.4 |
| Selling and general expenses | 26.3 | 29.0 |
| Interest expense | 1.9 | 1.3 |
| Wages expense | 9.6 | 8.8 |
| Total expenses | 81.8 | 82.6 |
| Net income | 18.2% | 17.4% |

(10 min.) **E18-5**

*Req. 1*

1.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Assets (Amounts in Millions)** | **BHAGWAN INC.** | | **BIGWIG LTD.** | |
| **Amount** | **Percent** | **Amount** | **Percent** |
| Current assets |  |  |  |  |
| Cash and equivalents | $   462 | 4.1% | $   472 | 2.4% |
| Short-term investments | — | — | 804 | 4.1 |
| Accounts receivable, net | 2,898 | 25.6 | 882 | 4.5 |
| Inventories | 2,082 | 18.4 | 5,380 | 27.3 |
| Other current assets | 408 | 3.6 | 134 | 0.7 |
| Total current assets | 5,850 | 51.7 | 7,672 | 38.9 |
| Property, plant, and equipment, net | 4,960 | 43.8 | 11,280 | 57.2 |
| Goodwill and other intangibles | 206 | 1.8 | 226 | 1.1 |
| Other assets | 302 | 2.7 | 540 | 2.7 |
| Total assets | $11,318 | 100.0% | $19,718 | 100.0% |

*Req. 2*

2. Current assets appear more important to Bhagwan Inc. (51.7% of total assets).

*Req. 3*

3. Bigwig Ltd. places more emphasis on property, plant, and equipment (property, plant and equipment is 57.2% of total assets).

*(5-15 min*.) **E18-6**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **JUTI CORP**. | | | | | | | |
|  | **2020** | | **2019** | | | **2018** | |
| Total current assets | $92,250 | | $87,000 | | | $78,750 | |
| Total current liabilities | 37,200 | | 34,750 | | | 42,500 | |
| Working capital | $55,050 | | $52,250 | | | $36,250 | |
|  | |  | |  |  | |
|  | | Increase, $2,800 5.4% | |  | Increase, $16,000 44.1% | |

The increase in working capital from 2018 to 2020 was favourable. However, the increase from 2018 to 2019 was much greater than the increase from 2019 to 2020. The 2020 to 2018 change in working capital will be important as it will identify the ongoing trend.

(10 min.) **E18-7**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Ratio** | **2020** | **2019** | **1. Change** | **Benchmark** | **2. Performance 2020 vs. Benchmark** |
| Current ratio | 1.5 | 1.7 | – | 2:1 | – |
| Acid-test ratio | 0.83 | 0.85 | – | 0.95 | – |
| Inventory turnover | 8 | 7 | + | 10 | – |
| Accounts receivable turnover | 12 | 14 | – | 13 | – |
| Debt ratio | 0.3 | 0.2 | – | 0.7 | + |
| Times-interest-earned ratio | 7 | 6 | + | 4 | + |
| Return on assets | 0.06 | 0.04 | + | 0.05 | + |
| Return on common shareholders’ equity | 0.24 | 0.23 | + | 0.14 | + |

+ indicates favourable or good

− indicates unfavourable or bad

(10-15 min.) **E18-8**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a. Current ratio | = |  | | | | $106,000 | |  | | | = | 1.54 |
|  | | | | $69,000 | |  | | |
|  |  |  | | | |  | |  | | |  |  |
| b. Acid-test ratio | = |  | $11,500 + $6,500 + $39,000 | | | | | | |  | = | 0.83 |
|  | $69,000 | | | | | | |  |
|  |  |  | |  | | |  | | | |  |  |
| c. Inventory turnover | = |  | | | $138,500 | | | |  | | = | 3.30 times |
|  | | | ($45,500 + $38,500)÷2 | | | |  | |
|  |  |  | | |  | | | |  | |  |  |
| d. Days’ sales in | =  = |  | | | 365 days | | | |  | | =  = | 110.61 days |
| inventory |  | | | 3.30 | | | |  | |
|  |  |  | | |  | | | |  | |  |  |
| e. Accounts receivable turnover | = |  | | | $248,500 | | | |  | | = | 6.72 times |
|  | | | ($39,000 + $35,000)÷2 | | | |  | |
|  |  |  | | |  | | | |  | |  |  |
| f. Days’ sales in receivables | = |  | | | ($39,000 + $35,000)÷2 | | | |  | | = | 54.35 days |
|  | | | $248,500÷365 | | | |  | |

(15-20 min.) **E18-9**

a. Current ratio:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,000 + $15,000 + $59,500 + $125,000 + $9,000 | | |  | = | 2.04 |
|  | $108,500 | | |  |
|  |  |  | | |  |  |  |
| 2019: |  | | $25,500 + $65,500 + $135,000 + $5,500 |  | | = | 1.78 |
|  | | $130,000 |  | |

b. Acid-test ratio:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,000 + $15,000 + $59,500 | | |  | = | 0.81 | | | |
|  | $108,500 | | |  |
|  |  |  | | | | | |  |  |  |
| 2019: |  | | $25,500 + $65,500 |  | | = | 0.70 | | | |
|  | | $130,000 |  | |

c. Debt ratio:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $137,000 |  | = | 0.50 | | | |
|  | $275,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $143,000 |  | = | 0.55 | | | |
|  | $260,000 |  |

d. Debt/equity ratio:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $137,000 |  | = | 0.99 | | | |
|  | $138,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $143,000 |  | = | 1.22 | | | |
|  |  | $117,000 |  |  |  | | | |

Total assets – Total liabilities = Total equity

2020: $275,000 - $137,000 = $138,000

2019: $260,000 - $143,000 = $117,000

*(continued)* **E18-9**

e. Times-interest-earned ratio:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $99,000 |  | = | 4.40 | | | |
|  | $22,500 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $82,500 |  | = | 3.93 | | | |
|  | $21,000 |  |

Summary: The company’s ability to pay its current liabilities has improved based on the comparison of current and acid-test ratios for 2020 over 2019.

The ability to cover long-term debt has also improved as evidenced by the improvement of the debt ratio, debt/equity ratio, and the times-interest-earned ratios.

(10-15 min.) **E18-10**

a. Return on sales:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,425 |  | = | 6.9% | | | |
|  | $195,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $22,650 |  | = | 13.0% | | | |
|  | $174,000 |  |

b. Return on assets:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,425 + $25,400 |  | = | 16.9% | | | | |
|  | $230,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $22,650 + $12,050 |  | = | 15.6% | | | | |
|  | $222,000 |  |

c. Return on common shareholders’ equity:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,425 – $5,000 |  | = | 8.3% | | | | |
|  | $102,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $22,650 – $5,000 |  | = | 18.0% | | | | |
|  | $98,000 |  |

d. Earnings per common share:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $13,425 – $5,000 |  | = | $0.34 | | | | |
|  | 25,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $22,650 – $5,000 |  | = | $0.71 | | | | |
|  | 25,000 |  |

Although sales increased by 12 percent, the company’s operating performance deteriorated during 2020. Three of the profitability measures decreased primarily due to the increase in selling and general, and interest expenses. The improvement in return on assets was due to the high level of interest expense added back.

(10-15 min) **E18-11**

a. Price–earnings ratio:

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | | | $4.83 |  | | = | 12.82 | | | |
|  | | | ($33,000 – $4,750\*)÷75,000 |  | |
|  |  |  | | | | | | |  |  |  |
| 2019: |  | | $3.89 | | |  | = | 12.28 | | | |
|  | | ($27,000 – $3,250\*\*)÷75,000 | | |  |

b. Dividend yield:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $14,250†÷75,000 |  | = | 3.93% | | | |
|  | $4.83 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $9,750††÷75,000 |  | = | 3.34% | | | |
|  | $3.89 |  |

c. Book value per common share:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2020: |  | $275,000 |  | = | $3.67 | | | |
|  | 75,000 |  |
|  |  |  | | | |  |  |  |
| 2019: |  | $250,000 |  | = | $3.33 | | | |
|  | 75,000 |  |

The shares’ attractiveness increased somewhat during the year, as shown by the increase in book value per share. The dividend yield has also increased. The increase in the price–earnings ratio is an indication that investors are prepared to pay more for the company’s earnings. Overall, however, the change has not significantly increased the attractiveness of the common shares of Payment Software Inc.

\* $19,000 × 0.25 = $4,750

\*\* $13,000 × 0.25 = $3,250

† $19,000 – $4,750 = $14,250

†† $13,000 – $3,250 = $9,750

(20-30 min.) **E18-12**

|  |  |  |  |
| --- | --- | --- | --- |
| **Step (order of calculations)** |  | **Thousands** | |
| Given | Current assets |  | $24,498 |
| 4 | Property, plant, and equipment | $36,155\* |  |
| Given | Less: Accumulated amortization | 7,854 | 28,301 |
| 3 | Total assets ($29,204 ÷ 0.55312) |  | $52,799 |
| 1 | Current liabilities ($24,498 ÷ 1.75) |  | $13,999 |
| 2 | Long-term liabilities ($29,204 – $13,999) |  | 15,205 |
| 6 | Shareholders’ equity ($52,799 – $13,999 – $15,205) |  | 23,595 |
| 5 | Total liabilities and shareholders’ equity |  | $52,799 |

\*Property, plant, and equipment, net = $52,799 – $24,498 = $28,301

Property, plant, and equipment = $28,301 + $7,854 = $36,155

Serial Exercise *(60-70 min.)* E18-13

*Req. 1*

| **Ratio** | **Formula** |  | **Result** |
| --- | --- | --- | --- |
| 1. Current ratio | Total current assets ÷ Total current liabilities |  |  |
| PC – 2024 | $209,370 ÷ $69,554 | = | 3.01 |
| PC – 2023 | $197,850 ÷ $60,232 | = | 3.28 |
| RLV – 2024 | $198,490 ÷ $90,810 | = | 2.19 |
| RLV – 2023 | $196,780 ÷ $90,010 | = | 2.19 |
|  |  |  |  |
| 1. Inventory turnover | Cost of goods sold ÷ Average inventory |  |  |
| PC – 2024 | $258,756 ÷ (($79,919 + $66,341) ÷ 2) | = | 3.54 |
| PC – 2023 | $256,797 ÷ (($66,341 + $76,363) ÷ 2) | = | 3.60 |
| RLV – 2024 | $299,110 ÷ (($68,500 + $65,230) ÷ 2) | = | 4.47 |
| RLV – 2023 | $280,190 ÷ (($65,230 + $59,930) ÷ 2) | = | 4.48 |
|  |  |  |  |
| 1. Accounts receivable turnover | Net credit sales ÷ Average net accounts receivable |  |  |
| PC – 2024 | $430,489 ÷ (($44,798 + $44,452) ÷ 2) | = | 9.65 |
| PC – 2023 | $425,410 ÷ (($44,452 + $44,104) ÷ 2) | = | 9.61 |
| RLV – 2024 | $410,570 ÷ (($39,810 + $38,650) ÷ 2) | = | 10.47 |
| RLV – 2023 | $383,870 ÷ (($38,650 + $36,460) ÷ 2) | = | 10.22 |
|  |  |  |  |
| 1. Gross margin percentage | Gross margin ÷ Net sales revenue |  |  |
| PC – 2024 | $171,733 ÷ $430,489 | = | 39.89% |
| PC – 2023 | $168,613 ÷ $425,410 | = | 39.64% |
| RLV – 2024 | $111,460 ÷ $410,570 | = | 27.15% |
| RLV – 2023 | $103,680 ÷ $383,870 | = | 27.01% |
|  |  |  |  |
| 1. Debt ratio | Total liabilities ÷ Total assets |  |  |
| PC – 2024 | $101,236 ÷ $299,204 | = | 33.84 |
| PC – 2023 | $90,168 ÷ $288,626 | = | 31.24 |
| RLV – 2024 | $187,120 ÷ $315,250 | = | 59.36 |
| RLV – 2023 | $195,900 ÷ $313,050 | = | 62.58 |
|  |  |  |  |

*(continued)***E18-13**

| **Ratio** | **Formula** |  | **Result** |
| --- | --- | --- | --- |
| 1. Return on Assets | (Net Income + Interest Expense) ÷ Average total assets |  |  |
| PC – 2024 | ($11,851+$865) ÷ (($299,204 + $288,626) ÷ 2) | = | 0.04 |
| PC – 2023 | ($11,094+788) ÷ (($288,626 + $276,482) ÷ 2) | = | 0.04 |
| RLV – 2024 | ($21,610+2,780) ÷ (($315,250 + $313,050) ÷ 2) | = | 0.08 |
| RLV – 2023 | ($21,240+2,980) ÷ (($313,050 + $310,640) ÷ 2) | = | 0.08 |
|  |  |  |  |
| 1. Rate of return on common shareholders’ equity | (Net income – Preferred dividends) ÷ Average common shareholders’ equity |  |  |
| PC – 2024 | ($11,851 – $0) ÷ (($197,968 + $198,458) ÷ 2) | = | 5.98% |
| PC – 2023 | ($11,094 – $0) ÷ (($198,458 + $197,668) ÷ 2) | = | 5.60% |
| RLV – 2024 | ($21,610 – $0) ÷ (($128,130 + $117,150) ÷ 2) | = | 17.62% |
| RLV – 2023 | ($21,240 – $0) ÷ (($117,150 + $103,840) ÷ 2) | = | 19.22% |
|  |  |  |  |
| 1. Earnings per share | (Net income – Preferred dividends) ÷ Weighted average number of common shares outstanding |  |  |
| PC – 2024 | ($11,851 – $0) ÷ 9,000 shares | = | $1.32 |
| PC – 2023 | ($11,094 – $0) ÷ 8,000 shares | = | $1.39 |
| RLV – 2024 | ($21,610 – $0) ÷ 9,000 shares | = | $2.40 |
| RLV – 2023 | ($21,240 – $0) ÷ 8,000 shares | = | $2.66 |
|  |  |  |  |
| 1. Price–earnings ratio | Market price per common share ÷ Earnings per share |  |  |
| PC – 2024 | $21.38 ÷ $1.32 | = | 16.20 |
| PC – 2023 | $33.82 ÷ $1.39 | = | 24.33 |
| RLV – 2024 | $46.37 ÷ $2.40 | = | 19.32 |
| RLV – 2023 | $51.64 ÷ $2.66 | = | 19.41 |
|  |  |  |  |
| 1. Dividend yield | Annual dividend per share ÷ Market price per share |  |  |
| PC – 2024 | $0.32 ÷ $21.38 | = | 1.50% |
| PC – 2023 | $0.30 ÷ $33.82 | = | 0.89% |
| RLV – 2024 | $0.53 ÷ $46.37 | = | 1.14% |
| RLV – 2023 | $0.45 ÷ $51.64 | = | 0.87% |

*(continued)***E18-13**

*Req. 2*

ANALYSIS

**Ability to pay current liabilities**

Paddle Company has higher current ratios and cash ratios, indicating it is better able to pay current liabilities.

**Ability to sell inventory and collect receivables**

Recreational Life Vests has higher inventory and accounts receivable turnovers, indicating it is better able to sell inventory and collect receivables. However, Paddle Company has higher gross margin percentages, indicating it is better at earning a gross margin on its inventory.

**Ability to pay long-term debt**

Recreational Life Vests has significantly higher debt ratios, indicating it has higher financial risk. Based on the debt ratio, Paddle Company would have a better ability to pay long-term debt.

**Profitability**

While Paddle Company has higher gross margin percentages, Recreational Life Vests has higher profit margin ratios, indicating RLV is better at controlling total costs and earning more net profit on each dollar of sales. Paddle Company has slightly higher asset turnovers, but Recreational Life Vests has significantly higher rates of return on shareholders’ equity and earnings per share.

**Attractiveness as an investment**

Recreational Life Vests has a stable PE ratio, while Paddle Company had a significant decrease in PE ratio. Paddle Company has slightly higher dividend yields and dividend payouts, but both companies are increasing these two ratios.

CONCLUSION AND RECOMMENDATION

Overall, both companies appear to be stable, with little fluctuation between the two years. Recreational Life Vests appears to be a greater risk in the long term due to its higher debt ratios. Since Canyon Canoe Company is looking for a short-term investment in trading securities, it should buy Paddle Company because it has a higher dividend yield and dividend payout. In the short term, dividends are the most important factor because they will be Canyon’s primary return.

**Challenge Exercises**

(20-30 min.) **E18-14**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **POSPISIL TENNIS SHOPS INC.** | | | | |
| Balance Sheet | | | | |
| December 31, 2019 | | | | |
| **Assets** | | | **Liabilities** | |
| Total current assets |  | $1,216,000 | Total current liabilities | $ 760,000 |
| Property, plant, and equipment | $3,584,000 |  | Long-term liabilities | 780,000 |
| Less: Accumulated amortization | 2,000,000 |  | Total liabilities | 1,540,000 |
| Property, plant, and equipment, net |  | 1,584,000 | **Shareholders’ equity** | 1,260,000 |
| Total assets |  | $2,800,000 | Total liabilities and shareholder’s equity | $2,800,000 |

|  |  |  |  |
| --- | --- | --- | --- |
| Current liabilities | = | Current assets ÷ Current ratio | $1,216,000 ÷ 1.60 = $760,000 |
| Long-term liabilities | = | Total liabilities – Current liabilities | $1,540,000 – $760,000 = $780,000 |
| Total Assets | = | Total liabilities ÷ Debt ratio | $1,540,000 ÷ 0.55 = $2,800,000 |
| PPE, net | = | Total assets – Total current assets | $2,800,000 – $1,216,000 = $1,584,000 |
| PPE | = | PPE, net + Accumulated amortization | $1,584,000 + $2,000,000 = $3,584,000 |

(20-30 min.) **E18-15**

*Req. 1 (ASPE)*

a. Current ratio = Current assets ÷ Current liabilities:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $16,359 + $138,397 |  | = | 0.39 |
|  | $268,796 + $102,433 + $28,903 |  |

b. Acid-test ratio = (Cash + Short-term investments + Net current receivables)

Current liabilities

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $16,359 + $138,397 |  | = | 0.39 |
|  | $268,796 + $102,433 + $28,903 |  |

c. Debt ratio = Total liabilities ÷ Total assets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $3,516,209 |  | = | 0.87, or 87% |
|  | $4,029,922 |  |

d. Return on assets = (Net income + Interest expense) ÷ Average total assets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | ($96,083) + $154,899 + 11,916 |  | = | 0.019, or 1.9% |
|  | ($4,029,922 + $3,531,608)÷2 |  |

(continued) **E18-15**

*Req. 2 (IFRS)*

a. Current ratio = Current assets ÷ Current liabilities:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $276,387 |  | = | 0.62 |
|  | $443,436 |  |

b. Acid-test ratio = (Cash + Short-term investments + Net current receivables)

Current liabilities

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $16,359 + $65,390 |  | = | 0.18 |
|  | $443,436 |  |

c. Debt ratio = Total liabilities ÷ Total assets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | $3,537,868 |  | = | 0.85 |
|  | $4,144,636 |  |

d. Return on assets = (Net income + Interest expense) ÷ Average total assets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2019: |  | ($276,653) + $166,815 |  | = | (0.028), or -2.8% |
|  | ($4,144,636 + $3,817,479)÷2 |  |

Beyond the Numbers

(10-15 min.) **BN18-1**

*Req. 1*

Dividend yield is the ratio of dividends per share to the market value of a share. Dividend yield can be high because the share’s market value is low. This may signal that the company is in trouble. The dividend yield can also be high because the company pays a high dividend, leaving less money to invest in the business. A wise investor should also examine other information to evaluate a company as an investment. Examples include the trends of earnings per share, current ratio, debt ratio, rate of return on total assets, and rate of return on common shareholders’ equity.

*Req. 2*

Days’ sales in receivables ratio is computed as follows:

|  |
| --- |
| Average net accounts receivable |
| One day’s sales |

This ratio can increase because the company has extended its credit terms (say from 30 to 45 days) or accounts receivable are not being collected in a timely manner or are not being written off as bad debt expense in a timely manner, because sales are declining (perhaps due to a general decline in the economy), or a combination of all of these. The owners are wise to be concerned, unless they have extended credit terms to increase sales or there is some other reason for the delay in collections, such as staff issues, because an increase in days’ sales in receivables may signal a future cash shortage.

(10-15 min.) **BN18-2**

Recording payments in December, but mailing the cheques in January, understates Accounts Payable and Cash at year-end. This action makes the current ratio and acid-test ratio look better than they really are—so long as the ratio values exceed 1.0. These data are illustrative, but not required:

Correct Amounts Amount Incorrect Reported Amounts

(No cash payment of cash (January cash payment

entries in December) Amount payment recorded in December)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Current assets | | = | | $100 | | = | | 2.0 | | –$10 | = | $100 – $10 | | | = | | $90 | | = | | 2.25 | |
| Current liabilities | | $50 | | –$10 | $50 – $10 | | | $40 | |
| Cash + ST Investments + A/R | = | | $40 | | = | | 0.80 | | –$10 | | = | | $40 – $10 | = | | $30 | | = | | 0.75 | |
| Current liabilities | $50 | | –$10 | | $50 – $10 | $40 | |

Ethical Issue

*Req. 1*

Reclassifying the long-term investments as short-term will increase current assets and therefore increase the current ratio. Harrison Outfitters Inc.’s financial position is not improved by this reclassification because the company’s asset position has not changed.

*Req. 2*

Reclassifying a long-term investment as current to meet a debt agreement does not brand Harrison Outfitters Inc.’s managers as unethical. The managers may have honestly intended to sell the investments in order to meet obligations. In that case, the managers took appropriate action.

Reclassifying the equity investments from current back to long-term may suggest to some observers that the managers are playing a shell game. However, the case states that sales subsequent to the first reclassification have improved the current ratio. Under these circumstances, Harrison Outfitters Inc. may not need to sell the investments. The managers may prefer to hold the short-term investments beyond one year and therefore need to reclassify them as long-term. In that case, the managers’ action is appropriate.

This case illustrates how complicated accounting can be when not every rule can be interpreted exactly the same way every time. Here the debt agreement depends on the current ratio, which is affected by an asset classification that managers control simply by their intentions. Because the managers’ intentions cannot be observed, it would be hard to prove that the managers are behaving unethically.

Problems

Group A

(20-30 min.) **P18-1A**

Req. 1

Horizontal Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2020** | **2019** | **Amount** | **Percent** |
| Net sales | $1,806 | $1,757 | $49 | 2.79% |
| Net income | 144 | 120 | 24 | 20.00% |
| Ending common shareholders’ equity | 940 | 860 | 80 | 9.30% |

Net income increased at a faster rate than other accounts.

Req. 2

Trend Percentages

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **2020** | **2019** | **2018** | **2017** | **2016** | **2015** |
| Net sales | 114% | 111% | 101% | 107% | 103% | 100% |
| Net income | 150 | 125 | 93 | 131 | 104 | 100 |
| Ending common shareholders’ equity | 157 | 143 | 129 | 114 | 105 | 100 |

Req. 3

Expense Analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| (Amounts in thousands) | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|  |  | | | | | |
| Net sales | $1,806 | $1,757 | $1,606 | $1,704 | $1,638 | $1,588 |
| Net income | 144 | 120 | 89 | 126 | 100 | 96 |
| Expenses (sales less net income) | 1,662 | 1,637 | 1,517 | 1,578 | 1,538 | 1,492 |
| Expense trend | 111% | 110% | 102% | 106% | 103% | 100% |
| Net sales\* (from Req. 2) | 114% | 111% | 101% | 107% | 103% | 100% |

Expenses are increasing more slowly than sales.

(20-25 min.) **P18-2A**

*Req. 1*

|  |  |  |
| --- | --- | --- |
| **MACKEY CAR PARTS, INC**. | | |
| Vertical Analysis of the Income Statement | | |
| For the Year Ended December 31, 2020 | | |
|  |  | **Percent of Tota**l |
| Net sales | $ 778,000 | 100.0% |
| Cost of goods sold | 522,816 | 67.2 |
| Gross margin | 255,184 | 32.8 |
| Operating expenses | 161,046 | 20.7 |
| Operating income | 94,138 | 12.1 |
| Other expenses | 4,668 | 0.6 |
| Net income | $ 89,470 | 11.5% |

|  |  |  |
| --- | --- | --- |
| **MACKEY CAR PARTS, INC.** | | |
| Vertical Analysis of the Balance Sheet | | |
| December 31, 2020 | | |
|  |  | **Percent of Total** |
| Current assets | $ 325,440 | 67.8% |
| Property, plant, and equipment, net | 120,960 | 25.2 |
| Intangible assets, net | 8,640 | 1.8 |
| Other assets | 24,960 | 5.2 |
| Total assets | $ 480,000 | 100.0% |
|  |  |  |
| Current liabilities | $ 222,720 | 46.4% |
| Long-term liabilities | 107,520 | 22.4 |
| Total liabilities | 330,240 | 68.8 |
| Shareholders’ equity | 149,760 | 31.2 |
| Total liabilities and shareholders’ equity | $ 480,000 | 100.0% |

*Req. 2*

Mackey’s gross profit percentage is less than the industry average. They have a slightly higher investment in fixed and intangible assets than the industry average.

(20-30 min.) **P18-3A**

Req. 1

|  |  |  |
| --- | --- | --- |
| **COMPUTER DOCTOR LTD**. | | |
| Common-Size Income Statement Compared to Industry Average | | |
| For the Year Ended December 31, 2020 | | |
|  | **Computer Doctor Ltd.** | **Industry Average** |
| Net sales | 100.0% | 100.0% |
| Cost of goods sold | 58.8 | 53.2 |
| Gross margin | 41.2 | 46.8 |
| Operating expenses | 20.5 | 21.3 |
| Operating income | 20.7 | 25.5 |
| Other expenses | 4.8 | 5.2 |
| Net income | 15.9% | 20.3% |

|  |  |  |
| --- | --- | --- |
| **COMPUTER DOCTOR LTD.** | | |
| Common-Size Balance Sheet Compared to Industry Average | | |
| December 31, 2020 | | |
|  | **Computer Doctor Ltd.** | **Industry Average** |
| Current assets | 64.1% | 62.5% |
| Property and equipment, net | 33.6 | 35.2 |
| Other assets | 2.3 | 2.3 |
| Total assets | 100.0% | 100.0% |
|  |  |  |
| Current liabilities | 44.3% | 42.5% |
| Long-term liabilities | 24.6 | 32.5 |
| Shareholders’ equity | 31.1 | 25.0 |
| Total liabilities and shareholders’ equity | 100.0% | 100.0% |

(continued) **P18-3A**

Req. 2

Computer Doctor Ltd.’s common-size income statement shows that its (a) ratio of gross margin to net sales, (b) ratio of operating income to net sales, and (c) ratio of net income to net sales are all lower than the industry averages. The company’s profit performance is below average for the industry, which could be cause for concern.

Req. 3

Computer Doctor Ltd.’s common-size balance sheet shows that its (a) ratio of current assets to total assets is better than the industry average. Its (b) ratio of shareholders’ equity to total assets is better than the industry average. Overall, the company’s financial position is *better* than the industry average.

Req. 1 (ratios before the transactions) (30-40 min.) **P18-4A**

MKR Dealer Supplies Ltd.

(Dollar Amounts in Thousands)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Current Ratio |  |  | Debt Ratio |  | Earnings per Share | | | |
| $300.5 |  |  | $379.5 |  |  |  |  |  |
| $68 + $97.5 + $129+ $6 | = | 1.71 | $39 + $109.5 + $27 + $204 | = | 0.61 | $108 | = | $2.70 |
| $39 + $109.5 + $27 | $625 | 40 |
| $175.5 |  |  |  |  |  |  |  |  |

Req. 2 (ratios after the transactions)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| (Dollar Amounts in Thousands) | | | | | | | |
| Trans. | Current Ratio |  |  | Debt Ratio |  |  | Earnings per Share |
| a. | $300.5 + $43 | = | 1.57 | $379.5+ $43 | = | 0.63 | No effect |
| $175.5+ $43 | $625+ $43 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| b. | $300.5 – $40 | = | 1.48 | $379.5 – $40 | = | 0.58 | No effect |
| $175.5 | $625– $40 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| c. | $300.5 | = | 1.28 | $379.5 + $60 | = | 0.70 | No effect |
| $175.5 + $60 | $625 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| d. | $300.5 + $50 | = | 2.00 | $379.5 + $50 | = | 0.64 | No effect |
| $175.5 | $625 + $50 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e. | $300.5 + $140 | = | 2.51 | $379.5 | = | 0.50 | $108 | = | $2.16 |
| $175.5 | $625 + $140 | 40 + 10 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| f. | No effect |  |  | No effect |  |  | No effect |
|  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| g. | $300.5 – $25 | = | 1.83 | $379.5 – $25 | = | 0.59 | No effect |
| $175.5 – $25 | $625 – $25 |

Req. 1 (30-40 min.) **P18-5A**

**OLD TYME CANDIES CORP.**

(Dollar amounts below shown in thousands)

**2020 2019**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a. Current ratio: |  | $227.5 |  | = | 2.45 |  | $209 |  | = | 2.07 |
|  | $93 |  |  | $100.725 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b. Inventory turnover: |  | $148.85 |  | = | 1.22 times |  | $147.0 |  | = | 1.38 times |
|  | ($127.5 + $117.5) ÷ 2 |  |  | ($117.5 + $95) ÷ 2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| c. Accounts receivable turnover: |  | $311.85 |  | = | 4.80 times |  | $297 |  | = | 5.17 times |
|  | ($67.5 + $62.5) ÷ 2 |  |  | ($62.5 + $52.5) ÷ 2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| d. Debt/equity ratio: |  | $210.5 |  | = | 1.79 |  | $228.225 |  | = | 2.90 |
|  | $117.5 |  |  | $78.775 |  |

Total equity = Total assets – total liabilities

2020: $328,000 – $210,500 = $117,500

2019: $307,000 – $228,225 = $78,775

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e. Times-interest-earned ratio: |  | $83.75 |  | = | 6.70 |  | $73.00 |  | = | 5.21 |
|  | $12.5 |  |  | $14 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| f. Return on assets: |  | $53.4 + $12.5 |  | = | 20.76% |  | $44.4 + $14 |  | = | 19.39% |
|  | ($328 + $307) ÷ 2 |  |  | ($307 + $295.5) ÷ 2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| g. Return on common shareholders’ equity: |  | $53.4– $1.25 |  | = | 55.99% |  | ($44.4– $1.25) |  | = | 74.22% |
|  | ($112.5 + $73.775) ÷ 2 |  |  | ($73.775 + $42.5) ÷ 2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| h. Earnings per common share: |  | $53.4 – $1.25 |  | = | $5.22\* |  | $44.4 – $1.25 |  | = | $5.75\* |
|  | 10 |  |  | 7.5 |  |

(continued) **P18-5A**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i. Price–earnings ratio: |  | $24.00\* |  | = | 4.60 |  | $12.00\* |  | = | 2.09 |
|  | $5.22\* |  |  | $5.75\* |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| j. Book value per common share: |  | $112.5 |  | = | $11.25\* |  | $73.775 |  | = | $9.84\* |
|  | 10 |  |  | 7.5 |  |

\* Not in thousands

Req. 2

The company’s financial position improved during 2020, as shown by increases in the current ratio and the times-interest-earned ratio and the decrease in the debt/equity ratio. The Inventory and Accounts Receivable turnovers decreased somewhat, which could be due to year-end holiday sales.

1. The *common shares’ attractiveness* grew during 2020, as shown by the rise in the shares’ market price. This increase in market price is consistent with the increases in return on assets, price-earnings ratio, and book value per share. The return on common shareholders’ equity and earnings per share dropped due to the increase in common shares outstanding in 2020.

(20-25 min.) **P18-6A**

|  |  |
| --- | --- |
| **KAYMA CARPET CORP.** | |
| Income Statement | |
| For the Year Ended May 31, 2020 | |
|  | (Thousands) |
| Net sales | $30,718 |
| Cost of goods sold | 13,328 (a) |
| Gross margin | 17,390 (b) |
| Selling and general expenses | 9,654 |
| Other expense (income) | 1,130 |
| Income before income tax | 6,606 (c) |
| Income tax expense (25%) | 1,652 (d) |
| Net income | $  4,954 (e) |

|  |  |
| --- | --- |
| **KAYMA CARPET CORP.** | |
| Balance Sheet | |
| May 31, 2020 | |
| **Assets** | (Thousands) |
| Current assets |  |
| Cash | $   1,030 (f) |
| Short-term investments | 1,852 |
| Receivables, net | 4,224 |
| Inventories | 1,300 |
| Prepaid expenses | 193 (g) |
| Total current assets | $8,599 (h) |
| Property, plant, and equipment, net | 22,354 |
| Total assets | $30,953 (i) |
| **Liabilities** |  |
| Current liabilities | $  9,270 |
| Long-term liabilities | 14,010 (j) |
| Total liabilities | 23,280 (k) |
| **Shareholders’ Equity** |  |
| Common shareholders’ equity | 7,673(l) |
| Total liabilities and equity | $30,953 (m) |

(continued) **P18-6A**

|  |  |
| --- | --- |
| **KAYMA CARPET CORP.** | |
| Cash Flow Statement | |
| For the Year Ended May 31, 2020 | |
|  | (Thousands) |
| Net cash inflow from operating activities | $4,324 |
| Net cash outflow from investing activities | (2,464) |
| Net cash outflow from financing activities | (1,130) |
| Net increase (decrease) in cash during fiscal 2020 | $   730 (n) |

Calculations:

|  |  |  |  |
| --- | --- | --- | --- |
| a | = | ($1,300 + $1,046) | × 11.3620 = $13,328 |
| 2 |

b = $30,718 – $13,328 = $17,390

c = $17,390 – $9,654 – $1,130 = $6,606

d = $6,606 × 0.25 = $1,652

e = $6,606 – $1,652 = $4,954

n = $4,324 – $2,464 – $1,130 = $730

f = $300 + $730 = $1,030

h = $9,270 × 0.9276 = $8,599

g = $8,599 – $1,030 – $1,852 – $4,224 – $1,300 = $193

i = $8,599 + $22,354 = $30,953

m = $30,953 (same as I; or add $9,270 + j + l)

k = $30,953 × 0.7521 = $23,280

j = $23,280 – $9,270 = $14,010

l = $30,953 – $23,280 = $7,673

(45-60 min.) **P18-7A**

(Dollar Amounts in Thousands)

**FixRight Ltd. FastFix Inc.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a. Current ratio: |  | $124 |  | = | 1.86 |  | $111.375 |  | = | 2.56 |
|  | $66.75 |  |  | $43.5 |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b. Acid-test ratio: |  | $17.25 + $11.5 + $32.3 |  | = | 0.91 |  | $18.5 + $9.75 + $26.1 | = | 1.25 |
|  | $66.75 |  |  | $43.5 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| c. Inventory turnover: |  | $187.7 |  | = | 3.31 |  | $154.25 | = | 2.85 |
|  | ($60.95 + $52.5)÷2 |  |  | ($55.775 + $52.5)÷2 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| d. Days’ sales in inventory: |  | 365 |  | = | 110.27 days |  | 365 | = | 128.07 days |
|  | 3.31 |  |  | 2.85 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e. Accounts receivable turnover: |  | $323.05 |  | = | 10.33 |  | $231.875 | = | 11.02 |
|  | ($32.3 + $30.25)÷2 |  |  | ($26.1 + $16)÷2 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| f. Days’ sales in receivables: |  | ($32.3 + $30.25)÷2 |  | = | 35.34 days |  | ($26.1 + $16)÷2 |  | = | 33.15 days |
|  | $323.05÷365 |  |  | $231.875÷365 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| g. Debt ratio: |  | $97.5 |  | = | 0.43 |  | $68.5 |  | = | 0.41 |
|  | $225 |  |  | $169 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| h. Debt/equity ratio: |  | $97.5 |  | = | 0.77 |  | $68.5 |  | = | 0.68 |
|  | $127.5 |  |  | $100.5 |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i. Times-interest-earned ratio: |  | $89.5 |  | = | 5.97 |  | $48.75 | |  | = | 19.50 |
|  | $15 |  |  | $2.5 |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| j. Return on sales: |  | $70 |  | | = | 21.67% |  | | $36.55 | |  | | = | | 15.76% | |
|  | $323.05 | |  |  |  | |  | | $231.875 | |  | |  | |  | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| k. Return on assets: |  | $70 + $15 |  | = | 36.56% |  | $36.55 + $2.5 |  | = | 21.60% |
|  | ($225 + $240)÷2 |  |  | ($169 + $192.5)÷2 |  |

(continued) **P18-7A**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| l. Return on common shareholders’ equity: |  | $70 – (250 × $3÷1,000)\* |  | = | 71.95% |  | $36.55 |  | = | 38.88% |
|  | [($127.5 – $12.5) + ($90 – $12.5)]÷2 |  |  | ($100.5 + $87.5)÷2 |  |

\*All amounts are in thousands, so the $3 dividend is divided by 1000 to make it equivalent

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| m. Earnings per common share: |  | $70 – (250 × $3÷1,000) |  | = | $9.89\* |  | $36.55 |  | = | $9.14\* |
|  | 7 |  |  | 4 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n. Price–earnings ratio: |  | $10.00\* |  | = | 1.01 |  | $10.00\* |  | = | 1.09 |
|  | $9.89\* |  |  | $9.14\* |  |

\* Not in thousands.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| o. Book value per common share: |  | $127.5 – $12.5 |  | = | $16.43\* |  | $100.5 |  | = | $25.13\* |
|  | 7 |  |  | 4 |  |

\* Not in thousands.

*Decision:* FixRight Ltd.’s common shares seem to fit the investment strategy better. Its price–earnings ratio is lower than that of FastFix Inc., but FixRight Ltd. appears to be in better shape financially than FastFix Inc. given the higher net income and higher profitability ratios. The rest of the ratios give a mixed impression of the firm as some are higher and some are lower.

(40-60 min.) **P18-8A**

Req. 1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WATERLOO CHIP LTD.** | | | | | |
| Horizontal Analysis of Balance Sheets | | | | | |
| December 31, 2020 and 2019 | | | | | |
|  | **2020** | **2019** | **Change** | **Percent** |
| **Assets** |  |  |  |  |
| Cash | $ 92,000 | $ 45,000 | $47,000 | 104.4 |
| Accounts receivable | 84,000 | 92,000 | (8,000) | (8.7) |
| Inventory | 102,000 | 118,000 | (16,000) | (13.6) |
| Prepaid expenses | 8,000 | 6,000 | 2,000 | 33.3 |
| Property, plant, and equipment | 498,000 | 474,000 | 24,000 | 5.1 |
| Less: Accumulated amortization | 106,000 | 70,000 | (36,000) | 51.4 |
| Goodwill | 40,000 | 40,000 | 0 | 0 |
| Total assets | $718,000 | $705,000 | $13,000 | 1.8% |
|  |  |  |  |  |
| **Liabilities** |  |  |  |  |
| Accounts payable | $ 30,100 | $ 43,000 | $ (12,900) | (30.0) |
| Note payable (due in 30 days) | 3,000 | 10,000 | (7,000) | (70.0) |
| Mortgage payable | 68,800 | 130,000 | (61,200) | (47.1) |
| Total liabilities | 101,900 | 183,000 | (81,100) | (44.3) |
|  |  |  |  |  |
| **Shareholders’ Equity** |  |  |  |  |
| Preferred shares (1,250 shares; $20.00) callable at $210.00 per share) | $240,000 | $240,000 | 0 | 0 |
| Common shares (2020—12,000 shares; 2019—6,000 shares) | 168,000 | 120,000 | 48,000 | 40.0 |
| Retained earnings | 208,100 | 162,000 | 46,100 | 28.5 |
| Total shareholders’ equity | 616,100 | 522,000 | 94,100 | 18.0 |
|  |  |  |  |  |
| Total liabilities and shareholders’ equity | $718,000 | $705,000 | $13,000 | 1.8% |

(continued) **P18-8A**

Students’ comments may focus on a number of changes, but the most significant are these:

• The changing composition of the assets, with the inventory decreasing by 13.6%. Some concern would be for the ability to meet customer demand with the reduced inventory. Cash is up 104.4% and liabilities are down by 44.3%, which is a good sign.

• The changing composition of the liabilities and shareholders’ equity, with the reduction in the mortgage payable being offset by an increase in common shares. This would reduce the risk of the creditors, but may have caused a reduction in control.

Req. 2

|  |  |  |
| --- | --- | --- |
| **WATERLOO CHIP LTD.** | | |
| Vertical Income Statement Analysis | | |
| December 31, 2020 | | |
|  | **Amount** | **Percent** |
| Net sales | $945,000 | 100.0 |
| Cost of goods sold | 610,000 | 64.6 |
| Gross margin | 335,000 | 35.4 |
| Operating expenses |  |  |
| Selling expenses | 128,200 | 13.6 |
| Administrative expenses | 78,000 | 8.3 |
| Interest expense | 22,000 | 2.3 |
| Total operating expenses | 228,200 | 24.1 |
| Operating income | 106,800 | 11.3 |
| Income tax | 26,700 | 2.8 |
| Net income | $ 80,100 | 8.5 |

Compared to the industry, the gross margin percentage is right where it should be.

The net income is too low at 8.5 percent compared with the benchmark of 12 percent, which may indicate that the expenses are too high or the gross margin is too low.

Req. 3 (continued) **P18-8A**

a. Current ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($92,000 + $84,000 + $102,000 + $8,000) |  | = | 8.64 |
| ($30,100 + $3,000) |

b. Acid-test ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($92,000 + $84,000) |  | = | 5.32 |
| ($30,100 + $3,000) |

c. Inventory turnover:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $610,000 |  | = | 5.55 times |
| ($118,000 + $102,000)÷2 |

d. Days’ sales in inventory:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 365 |  | = | 65.77 days |
| 5.55 |

e. Accounts receivable turnover:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $945,000 |  | = | 10.74 |
| ($92,000 + $84,000)÷2 |

f. Days’ sales in receivables:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($92,000 + $84,000)÷2 |  | = | 33.99 days |
| ($945,000÷365) |

g. Debt ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $101,900÷$718,000 |  | = | 0.14 |

h. Debt/equity ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $101,900 |  | = | 0.17 |
| $616,100 |

(continued) **P18-8A**

i. Times-interest-earned ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($106,800 + $22,000) |  | = | 5.85 times |
| $22,000 |

j. Return on sales:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $80,100÷$945,000 |  | = | 8.48% |

k. Return on assets:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($80,100 + $22,000) |  | = | 14.35% |
| ($718,000 + $705,000)÷2 |

l. Return on common shareholders’ equity:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($80,100 – $25,000) |  | = | 16.75% |
| ($282,000 + $376,100)÷2 |

m. Price–earnings ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $30.00 |  | = | 4.90 |
| ($80,100 – $25,000)÷[(12,000 + 6,000)÷2] |

n. Dividend yield:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $9,000÷12,000 |  | = | 2.50% |
| $30.00 |

(continued) **P18-8A**

Req. 4

a. Current ratio: The company’s current ratio is far higher than the industry standard, which indicates a very conservative company.

e. Debt ratio: The company’s debt ratio is far below the industry standard, which indicates it is not making efficient use of its borrowing power.

j. Price–earnings ratio: This company requires an investment of $4.90 to get a dollar of earnings. This is lower than the industry standard and suggests the shares are under-priced.

k. Dividend yield: The dividend yield is below the standard for the industry

*Overall:* Waterloo Chip Ltd. is very conservative; most of its ratios are better than the industry average. Inventory may be too low to support increased sales. The market is undervaluing the company’s shares despite the generally good rates of return on net sales, assets, and common shareholder’s equity.

Problems

Group B

(20-30 min.) **P18-1B**

Req. 1

Horizontal Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2020** | **2019** | **Amount** | **Percent** |
| Net sales | $804 | $912 | ($108) | ($11.84%) |
| Net income | 112 | 92 | 20 | 21.74% |
| Total assets | 654 | 610 | 44 | 7.21% |

Net income increased at a faster rate than other accounts.

Req. 2

Trend Percentages

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **2020** | **2019** | **2018** | **2017** | **2016** | **2015** |
| Net sales | 133% | 151% | 110% | 118% | 102% | 100% |
| Net income | 193 | 159 | 112 | 141 | 117 | 100 |
| Total assets | 160 | 149 | 127 | 115 | 113 | 100 |

Req. 3

Expense Analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| (Amounts in thousands) | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|  |  | | | | | |
| Net sales | $ 804 | $ 912 | $ 662 | $ 714 | $ 616 | $ 604 |
| Net income | 112 | 92 | 65 | 82 | 68 | 58 |
| Expenses (sales - net income) | 692 | 820 | 597 | 632 | 548 | 546 |
| Expense trend | 127% | 150% | 109% | 116% | 100% | 100% |
| Net sales\* (from Req. 2) | 133% | 151% | 110% | 118% | 102% | 100% |

Expenses are increasing more slowly than sales.

Req. 4

Total assets are increasing more quickly than sales.

(20-25 min.) **P18-2B**

*Req. 1*

|  |  |  |
| --- | --- | --- |
| **WESTERN FARM SUPPLIES INC.** | | |
| Vertical Analysis of the Income Statement | | |
| For the Year Ended December 31, 2020 | | |
|  |  | **Percent of Total** |
| Net sales | $782,000 | 100.0% |
| Cost of goods sold | 528,632 | 67.6 |
| Gross margin | 253,368 | 32.4 |
| Operating expenses | 163,438 | 20.9 |
| Operating income | 89,930 | 11.5 |
| Other expenses | 4,692 | 0.6 |
| Net income | $ 85,238 | 10.9% |

|  |  |  |
| --- | --- | --- |
| **WESTERN FARM SUPPLIES INC.** | | |
| Vertical Analysis of the Balance Sheet | | |
| December 31, 2020 | | |
|  |  | **Percent of Total** |
|  |  |
| Current assets | $303,750 | 67.5% |
| Property, plant, and equipment, net | 117,000 | 26.0 |
| Intangible assets, net | 5,850 | 1.3 |
| Other assets | 23,400 | 5.2 |
| Total assets | $450,000 | 100.0% |
|  |  |  |
| Current liabilities | $208,800 | 46.4% |
| Long-term liabilities | 102,600 | 22.8 |
| Total liabilities | 311,400 | 69.2 |
| Shareholders’ equity | 138,600 | 30.8 |
| Total liabilities and shareholders’ equity | $450,000 | 100.0% |

*Req. 2*

Western’s gross profit percentage is less than the industry average. They have a slightly higher investment in fixed and intangible assets than the industry average. The percentage of current liabilities is lower than the industry average.

Req. 1 (20-30 min.) **P18-3B**

|  |  |  |
| --- | --- | --- |
| **TILT WINDOWS INC.** | | |
| Common-Size Income Statement Compared to Industry Average | | |
| For the Year Ended December 31, 2020 | | |
|  | **Tilt**  **Windows** | **Industry Average** |
| Net sales | 100.0% | 100.0% |
| Cost of goods sold | 60.3 | 65.9 |
| Gross margin | 39.7 | 34.1 |
| Operating expenses | 28.7 | 28.1 |
| Operating income | 11.0 | 6.0 |
| Other expenses | 0.7 | 0.4 |
| Net income | 10.3% | 5.6% |

|  |  |  |
| --- | --- | --- |
| **TILT WINDOWS INC.** | | |
| Common-Size Balance Sheet Compared to Industry Average | | |
| December 31, 2020 | | |
|  | **Tilt**  **Windows** | **Industry Average** |
| Current assets | 55.9% | 66.6% |
| Property, plant, equip., net | 43.0 | 32.3 |
| Other assets | 1.1 | 1.1 |
| Total assets | 100.0% | 100.0% |
|  |  |  |
| Current liabilities | 33.3% | 35.6% |
| Long-term liabilities | 28.0 | 19.0 |
| Shareholders’ equity | 38.7 | 45.4 |
| Total liabilities and shareholders’ equity | 100.0% | 100.0% |

(continued) **P18-3B**

Req. 2

Tilt Windows Inc.’s common-size income statement shows that its (a) ratio of gross margin to net sales, (b) ratio of operating income to net sales, and (c) ratio of net income to net sales are *better* than the industry averages. Overall, Tilt Windows Inc.’s profit performance is *better* than average for the industry.

Req. 3

Tilt Windows Inc.’s common-size balance sheet shows that its (a) ratio of current assets to total assets and the ratio of shareholders’ equity to total assets are *worse* than the industry averages. However, property, plant, and equipment and long-term liabilities are *higher* than industry averages, likely for future growth. Overall, Tilt Windows Inc.’s financial position is *slightly worse* than average for companies in its industry. However, it may have future plans that explain the discrepancy with industry averages.

Req. 1 (ratios before transactions) (40-50 min.) **P18-4B**

**XI SUPPLIES INC.**

(Dollar amounts in thousands)

Earnings

Current Ratio Debt Ratio per Share

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $441 |  |  | $483 |  |  |  |  |  |
| $53 + $127 + $251 + $10 | = | 1.88 | $80 + $91 + $64 + $248 | = | 0.52 | $147 | = | $3.34 |
| $80 + $91 + $64 | $922 | 44 |
| $235 |  |  |  |  |  |  |  |  |

Req. 2 (ratios after the transactions)

**Dollar Amounts in Thousands**

**Trans. Current Ratio Debt Ratio Earnings per Share**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a. | $441 + $100 | = | 2.30 | $483+ $100 | = | 0.57 | No effect |
| $235 | $922 + $100 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b. | $441 + $180 | = | 2.64 | $483 | = | 0.44 | $147 | = | $2.63 |
| $235 | $922 + $180 | 44 + 12 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| c. | No effect |  |  | No effect |  |  | No effect |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| d. | $441 – $50 | = | 2.11 | $483 – $50 | = | 0.50 | No effect |
| $235 – $50 | $922 – $50 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| e. | $441 + $62 | = | 1.69 | $483 + $62 | = | 0.55 | No effect |
| $235 + $62 | $922 + $62 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| f. | $441 – $15 | = | 1.81 | $483 – $15 | = | 0.52 | No effect |
| $235 | $922 – $15 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| g. | $441 | = | 1.60 | $483 + $40 | = | 0.57 | No effect |
| $235 + $40 | $922 |

Req. 1 (40-50 min.) **P18-5B**

**AVENGER HARDWARE LTD**.

(Dollar amounts in thousands)

**2020 2019**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a. Current ratio: |  | $292 |  | = | 2.07 |  | $251.5 | = |  | 1.82 | |
|  | $141 |  |  | $138.5 |  | | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b. Inventory turnover: |  | $201 |  | = | 1.41 |  | $155 |  | = | 1.39 |
|  | ($149 + $137)÷2 |  |  | ($137 + $86)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| c. Accounts receivable turnover: |  | $351.5 |  | = | 3.58 |  | $310 |  | = | 4.34 |
|  | ($116 + $80.5)÷2 |  |  | ($80.5 + $62.5)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| d. Debt/equity ratio: |  | $255.5 |  | = | 1.34 |  | $259.5 |  | = | 1.92 |
|  | $191 |  |  | $135.5 |  |

Total equity = Total assets – total liabilities

2020: $446,500 – $255,500 = $191,000

2019: $395,000 - $259,500 = $135,500

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e. Times-interest-earned ratio: |  | $85.5 |  | = | 3.29 |  | $84 |  | = | 4.20 |
|  | $26 |  |  | $20 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| f. Return on assets: |  | $40.5 + $26 |  | = | 15.81% |  | $41.5 + $20 |  | = | 16.48% |
|  | ($446.5 + $395÷2 |  |  | ($395 + $351.5)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| g. Return on common shareholders’ equity: |  | $40.5 – $3 |  | = | 28.14% |  | $41.5 – $3 |  | = | 41.73% |
|  | ($161 + $105.5)÷2 |  |  | ($105.5 + $79)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| h. Earnings per common share: |  | $40.5 – $3 |  | = | $2.50\* |  | $41.5 – $3 |  | = | $3.21\* |
|  | 15 |  |  | 12 |  |

(continued) **P18-5B**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i. Price–earnings ratio: |  | $19.00\* |  | = | 7.60 |  | $31.00\* |  | = | 9.66 |
|  | $2.50\* |  |  | $3.21\* |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| j. Book value per common share: |  | $161 |  | = | $10.73\* |  | $105.5 |  | = | $8.79\* |
|  | 15 |  |  | 12 |  |

\* Not in thousands.

Req. 2

1. The company had mixed results in its ability to pay its debts and sell inventory.

* The current ratio, debt/equity ratio, and inventory turnover had better results in the most current year, so overall, there is an improvement.
* The receivable turnover weakened in the current year. This seems to signal a concern with an individual account balance and should be monitored.
* The times-interest-earned ratio also weakened in the current year indicating that the company is not earning enough to sustain the interest costs.

1. The common shares’ attractiveness dropped during 2020, as shown by the decrease in the market price of the common shares. This decrease is consistent with the decreases in return on assets, return on common shareholders’ equity, earnings per common share, and the price-earnings ratio. Of the last five ratios, only book value per common share increased.

(20-25 min.) **P18-6B**

|  |  |
| --- | --- |
| **BEACH PARADISE CORP.** | |
| Income Statement | |
| For the Year Ended December 31, 2020 | |
|  | (Thousands) |
| Net sales | $32,548 |
| Cost of goods sold | 12,217 (a) |
| Gross margin | 20,331 (b) |
| Selling and general expenses | 13,624 |
| Other expense (income) | 480 |
| Income before income tax | 6,227 (c) |
| Income tax expense (35%) | 2,179 (d) |
| Net income | $  4,048 (e) |

|  |  |
| --- | --- |
| **BEACH PARADISE CORP.** | |
| Balance Sheet | |
| December 31, 2020 | |
|  | (Thousands) |
| **Assets** |  |
| Current assets |  |
| Cash | $2,654 (f) |
| Short-term investments | 1,702 |
| Receivables, net | 3,600 |
| Inventories | 2,428 |
| Prepaid expenses | 336 (g) |
| Total current assets | 10,720 (h) |
| Property, plant, and equipment, net | 19,632 |
| Total assets | $30,352 (i) |
| **Liabilities** |  |
| Current liabilities | $  14,204 |
| Long-term liabilities | 3,722 (j) |
| Total liabilities | 17,926 (k) |
| **Shareholders’ Equity** |  |
| Common shareholders’ equity | 12,426 (l) |
| Total liabilities and shareholders' equity | $30,352 (m) |

(continued) **P18-6B**

|  |  |
| --- | --- |
| **BEACH PARADISE CORP.** | |
| Cash Flow Statement | |
| For the Year Ended December 31, 2020 | |
|  | (Thousands) |
| Net cash inflow from operating activities | $  6,640 |
| Net cash outflow from investing activities | (2,420) |
| Net cash outflow from financing activities | (4,094) |
| Net increase (decrease) in cash during 2020 | $      126 (n) |

Calculations:

|  |  |  |  |
| --- | --- | --- | --- |
| a | = | ($2,428 + $2,196) | × 5.2840 = $12,217 |
| 2 |

b = $32,548 – $12,217 = $20,331

c = $20,331 – $13,624 – $480 = $6,227

d = $6,227 × 0.35 = $2,179

e = $6,227 – $2,179 = $4,048

n = $6,640 – $2,420 – $4,094 = $126

f = $2,528 + $126 = $2,654

h = $14,204 × 0.7547 = $10,720 (rounded)

g = $10,720 – $2,654 – $1,702 – $3,600 – $2,428 = $336

i = $10,720 + $19,632 = $30,352

m = $30,352 (same as i, or $14,204 + j + l)

k = $30,352 × 0.5906 = $17,926 (rounded)

j = $17,926 – $14,204 = $3,722

l = $30,352– $17,926 = $12,426

(40-60 min.) **P18-7B**

(Dollar Amounts in Thousands)

**BFI TRADING LTD. LIN CORP.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a. Current ratio: |  | $894 |  | = | 1.20 |  | $1,002 |  | = | 1.25 |
|  | $748 |  |  | $800 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| b. Acid-test ratio: |  | $134 + $0 + $312 |  | = | 0.60 |  | $110 + $24 + $392 |  | = | 0.66 |
|  | $748 |  |  | $800 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| c. Inventory turnover: |  | $602 |  | = | 1.38 |  | $722 |  | = | 1.57 |
|  | ($424 + $448)÷2 |  |  | ($448 + $470)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| d. Days’ sales in inventory: |  | 365 |  | = | 264.49 days |  | 365 |  | = | 232.48 days |
|  | 1.38 |  |  | 1.57 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| e. Accounts receivable turnover: |  | $1,060 |  | = | 3.30 |  | $1,246 |  | = | 3.71 |
|  | ($312 + $330)÷2 |  |  | ($392 + $280)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| f. Days’ sales in receivables: |  | ($312 + $330)÷2 |  | = | 110.54 days |  | ($392 + $280)÷2 |  | = | 98.42 days |
|  | $1,060÷365 |  |  | $1,246÷365 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| g. Debt ratio: |  | $1,444 |  | = | 0.70 |  | $1,508 |  | = | 0.64 |
|  | $2,070 |  |  | $2,344 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| h. Debt/equity ratio: |  | $1,444 |  | = | 2.31 |  | $1,508 |  | = | 1.80 |
|  | $626 |  |  | $836 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i. Times-interest-earned ratio: |  | $186 |  | = | 4.65 |  | 202 |  | = | 20.20 |
|  | $40 |  |  | 10 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| j. Return on sales: |  | $82 |  | = | 7.74% |  | $124 |  | = | 9.95% |
|  | $1,060 |  |  | $1,246 |  |

(continued) **P18-7B**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| k. Return on assets: |  | $82 + $40 |  | = | 6.04% |  | $124 + 10 |  | = | 6.59% |
|  | ($1,970 + $2,070)÷2 |  |  | ($1,720 + $2,344)÷2 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| l. Return on common shareholders’ equity: |  | $82 – (300 × $10÷1,000)\* |  | = | 14.82% |  | $124 |  | = | 15.94% |
|  | [($560 – $60) + ($626 – $60]÷2 |  |  | ($836 + $720)÷2 |  |

\* All amounts in thousands. $10 per share needs to be converted to value in thousands.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| m. Earnings per common share: |  | $82 – (300 × $10÷1,000) |  | = | $7.90\* |  | $124 |  | = | $1.65\* |
|  | 10 |  |  | 75 |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n. Price–earnings ratio: |  | $84.00\* |  | = | 10.63 |  | $55.00\* |  | = | 33.33 |
|  | $7.90\* |  |  | $1.65\* |  |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| o. Book value per common share: |  | $626 – $60 |  | = | $56.60\* |  | $836 |  | = | $11.15\* |
|  | 10 |  |  | 75 |  |

\* Not in thousands.

*Decision:* Lin Corp.’s common shares seem to fit the investment strategy better. Its price-earnings ratio is higher than that of BFI Trading Ltd., but Lin Corp. appears to be in slightly better shape financially than BFI Trading Ltd. On several of the ratios, the two companies are relatively close. Those that tip the decision in favour of Lin Corp. are primarily the three rates of return; the company also has a better debt ratio and appears to be able to collect its receivables faster. There are a few troubling issues with Lin Corp., but there are more positives than negatives.

Students could argue, however, that since Lin’s price–earnings ratio is much higher than that of BFI Trading and the investment strategy is to purchase shares with low price–earnings ratios if all other ratios are good, then they would choose BFI Trading Ltd. based on these criteria.

Req. 1 (40-60 min.) **P18-8B**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CRUZ BURGERS INC.** | | | | |
| Horizontal Analysis of Balance Sheets | | | | |
| December 31, 2020 and 2019 | | | | |
|  | **2020** | **2019** | **Change** | **Percent** |
| **Assets** |  |  |  |  |
| Cash | $ 21,600 | $ 15,600 | $ 6,000 | 38.5 |
| Accounts receivable | 33,050 | 21,000 | 12,050 | 57.4 |
| Inventory | 38,000 | 42,000 | (4,000) | (9.5) |
| Prepaid expenses | 1,000 | 1,500 | (500) | (33.3) |
| Property, plant, and equipment | 170,000 | 157,000 | 13,000 | 8.3 |
| Less: Accumulated amortization | 34,000 | 24,000 | 10,000 | 41.7 |
| Goodwill | 15,000 | 15,000 | 0 | 0 |
| Total assets | $244,650 | $228,100 | $16,550 | 7.3 |
|  |  |  |  |  |
| **Liabilities** |  |  |  |  |
| Accounts payable | $ 15,000 | $ 18,500 | (3,500) | (18.9) |
| Note payable | 2,000 | 3,500 | (1,500) | (42.9) |
| Mortgage payable | 40,000 | 45,000 | (5,000) | (11.1) |
| Total liabilities | 57,000 | 67,000 | (10,000) | (14.9) |
|  |  |  |  |  |
| **Shareholders’ Equity** |  |  |  |  |
| Preferred shares (8,000 shares, $2.00) | 48,000 | 48,000 | 0 | 0.0 |
| Common shares (2020—12,000 shares; 2019—8,000 shares) | 81,000 | 65,000 | 16,000 | 24.6 |
| Retained earnings | 58,650 | 48,100 | 10,550 | 21.9 |
| Total shareholders’ equity | 187,650 | 161,100 | 26,550 | 16.5 |
|  |  |  |  |  |
| Total liabilities and shareholders’ equity | $244,650 | $228,100 | $16,550 | 7.3 |

*(continued)* **P18-8B**

Students’ comments may focus on a number of changes, but the most significant are these:

• The changing composition of the assets; with the merchandise inventory decreasing by 9.5 percent, which would allow for the increase in property, plant, and equipment. Some concern would be for the ability to meet customer demand with the reduced inventory.

* The steep increase in the accounts receivable balance could be an item of concern due to the large percentage increase. When the days’ sales in receivables ratio is calculated below, it will be seen that collections are indeed going well. The volume of sales increased from the prior year, so the amount of receivables increased too. This just goes to show that a substantial change in any one figure on a financial statement cannot be analyzed in isolation.

• The changing composition of the liabilities and shareholders’ equity, with the reduction in the liabilities being offset by an increase in common shares. This would reduce the risk of the creditors but may have caused a reduction in control.

Req. 2

|  |  |  |
| --- | --- | --- |
| **CRUZ BURGERS INC.** | | |
| Vertical Income Statement Analysis | | |
| December 31, 2020 | | |
|  | **Amount** | **Percent** |
| Net sales | $330,000 | 100% |
| Cost of goods sold | 190,000 | 57.6 |
| Gross margin | 140,000 | 42.4 |
| Operating expenses |  |  |
| Selling expenses | 40,000 | 12.1 |
| Administrative expenses | 23,000 | 7.0 |
| Interest expense | 6,000 | 1.8 |
| Total operating expenses | 69,000 | 20.9 |
|  |  |  |
| Operating income | 71,000 | 21.5 |
| Income tax | 21,300 | 6.5 |
| Net income | $ 49,700 | 15.1 |

Compared to the industry, the gross margin percentage is only slightly below the benchmark. The difference of 2.6 percent would mean $8,500 more gross margin if the benchmark were met.

The net income is right at the benchmark of 15 percent of net sales.

Req. 3 (continued) **P18-8B**

a. Current ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($21,600 + $33,050 + $38,000 + $1,000) |  | = | 5.51 |
| ($15,000 + $2,000) |

b. Acid-test ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($21,600 + $33,050) |  | = | 3.21 |
| ($15,000 + $2,000) |

c. Inventory turnover:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $190,000 |  | = | 4.75 times |
| ($38,000 + $42,000)÷2 |

d. Days’ sales in inventory:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 365 |  | = | 76.84 |
| 4.75 |

e. Accounts receivable turnover:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $330,000 |  | = | 12.21 |
| ($33,050 + $21,000)÷2 |

f. Days’ sales in receivables:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($33,050 + $21,000)÷2 |  | = | 29.89 days |
| ($330,000÷365) |

g. Debt ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $57,000÷$244,650 |  | = | 0.23 |

h. Debt/equity ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $57,000 |  | = | 0.30 |
| $187,650 |

i. Times-interest-earned ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($71,000 + $6,000) |  | = | 12.83 times |
| $6,000 |

(continued) **P18-8B**

j. Return on sales:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $49,700÷$330,000 |  | = | 15.06% |

k. Return on assets:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($49,700 + $6,000) |  | = | 23.56% |
| ($244,650 + $228,100)÷2 |

l. Return on common shareholders’ equity:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ($49,700 – $16,000) |  | = | 26.67% |
| [($161,100 – $48,000) + ($187,650 – $48,000)]÷2 |

m. Price–earnings ratio:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $9.00 |  | = | 2.67 |
| ($49,700 – $16,000)÷[(12,000 + 8,000)÷2] |

n. Dividend yield:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | $23,150÷12,000 |  | = | 21.44% |
| $9.00 |

(continued) **P18-8B**

Req. 4

a. Current ratio: Cruz Burgers Inc.’s current ratio is far higher than the industry standard, which indicates a very conservative company. It could probably use its cash to invest in short-term securities and increase net income. Caution should be exercised because “too much” cash is not good either. Management should also consider using those funds to grow the business.

e. Debt ratio: Cruz Burgers Inc.’s debt ratio is well below the industry standard, which indicates it may not be making efficient use of its borrowing power.

j. Price–earnings ratio: This company requires an investment of $3.20 to get one dollar of earnings. This is below the industry standard and indicates that the market considers the shares not to have good potential.

k. Dividend yield: The dividend yield is far higher than the standard for the industry. It appears that the company has paid a special dividend as the dividends amount to 46.6 percent of net income for the year.

*Overall:* Cruz Burgers Inc. could improve its ratios by making better use of its debt to retire some/all of the preferred shares, which are receiving an extremely high dividend rate. This in turn would provide the ability to increase the return to the common shareholders.

Challenge Problems

Req. 1 (20-30 min.) **P18-1C**

**Income Statement Analyzed Balance Sheet Analyzed**

Overstated Understated Overstated

Sales Cost of goods sold Accounts receivable (due to the

overstatement of sales)

Gross margin Inventory (causes the

understatement of cost of

goods sold)

All income amounts Property, plant, and equipment (the

including net income question said property, plant,  
 and equipment was overstated)

Income tax expense Accrued liabilities (income tax

payable—due to the

overstatement of income

before tax)

Retained earnings (due to

overstatement of net income)

Req. 2

This question is designed to consider the whole incentive issue related to management performance. The key point is that management incentive systems (bonuses, stock options) can promote inappropriate/dishonest behaviour by managers.

Management bonuses are a potential “red flag” because there is an incentive for management to commit fraud to increase their bonus.

(20-30 min.) **P18-2C**

Req. 1

Receivable turnover would be too high. Sales were overstated so the numerator would be overstated. The denominator would also be overstated since account receivables were overstated but the numerator increased at a greater rate than the denominator.

Req. 2

Sales and receivables should grow at approximately the same rate because a credit sale increases both accounts. This would not be true if the company’s business is changing—i.e., it is selling more for cash and less on credit (but not an issue in this case).

Req. 3

Cost of goods sold (numerator) was understated and closing inventory (denominator) was overstated. The too-low numerator divided by the too-high denominator produced an inventory turnover value that was too low.

Req. 4

A fast-growing company would likely have a higher-than-average inventory turnover, whereas the company’s inventory turnover was quite low relative to its competitors.

Req. 5

High receivables turnover suggests strong sales and quick collection of receivables. The low inventory turnover suggests difficulty in selling merchandise. The combination of the two ratios suggests a “red flag.”

Decision Problem

(20-30 min.) **DP18-1**

To reduce losses and establish profitable operations, WinterWorld Inc. should take some of the following steps:

1. The company must reduce its inventory. It has 67.1 percent of its assets tied up in inventory, which takes up space and costs money to hold. Any slow-moving items should be sold off cheaply in order to concentrate on those lines that sell well. This will initially reduce the gross margin, but it will free up cash to pay down the debt.

2. The company should reduce and perhaps eliminate sales on credit. The customers are borrowing money from the company at no interest while the company borrows that same money at 6 percent from the bank or on note payable at 8 percent. We cannot tell from the information given whether the credit sales affect the company’s gross sales.

In short, reduce or eliminate the accounts receivable and the bank loan.

3. Reduce the amount of interest-bearing debt. The company’s interest-bearing short-term note payable equal 6.0 percent of total assets compared to 0.0 percent for the industry average. Interest-bearing long-term debt equals 16.0 percent of total assets, compared to 14.0 percent for the industry. WinterWorld Inc.’s total interest-bearing debt is 40 percent (18.0% + 6.0% + 16.0% = 40%) of total assets, compared to only 28 percent (14.0% + 0.0% + 14.0% = 28%) for the industry. This debt burden causes the company to pay more interest expense than the norm for the industry (3.1 percent of net sales, compared to only 1.2 percent for the average company in the industry). The high level of interest expense drags profits down.

4. Sell higher profit-margin products or increase the price slightly to improve the margin. Cost of sales is 61.2 percent of sales, compared to 55.4 percent for the industry average. Consequently, gross margin is only 38.8 percent of net sales, which is less than the 44.6 percent industry average. An increase of approximately 10 percent on the selling price would bring the gross margin up to the industry average.

5. Cut operating expenses below their current level of 40.2 percent of sales by finding cheaper ways of doing business. The company should consider spending less on advertising, laying off employees, and other cost-cutting measures to trim operating expenses.

6. Do not pay the suppliers so quickly; take advantage of the suppliers’ credit terms. The company’s payables are 4 points lower than the industry average. Instead of paying the suppliers, pay down the short-term notes and some interest. Only pay suppliers quickly if they offer a discount for prompt payment.

*Note:* The question asked for only three courses of action.

Financial Statement Case

*(20-30 min.)* FSC18-1

Req. 1

**INDIGO BOOKS & MUSIC INC.**

Trend Analysis Using 2013 as Base

**2017 2016 2015 2014 2013**

Total revenues 116.1% 113.1% 101.9% 98.7% 100.0%

Earnings (loss) before income taxes 690.5 526.2 — — 100.0

Earnings per common share 464.7 647.1 — — 100.0

Losses are not shown as negative percentages as the difference is more than 100%.

Req. 2

Sales have increased steadily since 2013, with the exception of 2014, when there was a brief decline.

While 2014 and 2015 were challenging years for profits, there has been a steady (and significant) increase in the last two years.

An increasingly competitive market has meant that there has been a shift in where sales happen. Small stores showed only a small increase in sales while online and superstore sales have increased dramatically.