

# CHAPTER 18

## Financial Statement Analysis

### ASSIGNMENT CLASSIFICATION TABLE

<u>Study Objectives</u>	<u>Questions</u>	<u>Brief Exercises</u>	<u>Exercises</u>	<u>Problems</u>
1. Discuss the need for comparative analysis.	1, 2, 3, 5	1		
2. Identify the tools of financial statement analysis.	2, 3, 5, 6	2		
3. Explain and apply horizontal analysis.	3, 4, 5	2, 3, 5, 6, 7	1, 3, 4	
4. Describe and apply vertical analysis.	3, 4, 5	2, 4, 8	2, 3, 4	1
5. Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.	5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19	2, 9, 10, 11, 12, 13	5, 6, 7, 8, 9, 10, 11	1, 2, 3, 4, 5, 6, 7
6. Understand the concept of earning power, and how irregular items are presented.	20, 21, 22, 23	14, 15	12, 13	8, 9
7. Understand the concept of quality of earnings.	24			

## ASSIGNMENT CHARACTERISTICS TABLE

<b>Problem Number</b>	<b>Description</b>	<b>Difficulty Level</b>	<b>Time Allotted (min.)</b>
1	Prepare vertical analysis and comment on profitability.	Simple	20–30
2	Compute ratios from balance sheet and income statement.	Simple	20–30
3	Perform ratio analysis, and evaluate financial position and operating results.	Simple	20–30
4	Compute ratios, and comment on overall liquidity and profitability.	Moderate	30–40
5	Compute selected ratios, and compare liquidity, profitability, and solvency for two companies.	Moderate	50–60
6	Compute numerous ratios.	Simple	30–40
7	Compute missing information given a set of ratios.	Complex	30–40
8	Prepare income statement with discontinued operations and extraordinary loss.	Moderate	30–40
9	Prepare income statement with nontypical items.	Moderate	30–40

# BLOOM'S TAXONOMY TABLE

Correlation Chart between Bloom's Taxonomy, Study Objectives and End-of-Chapter Exercises and Problems

Study Objective	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
1. Discuss the need for comparative analysis.		Q18-1 Q18-2 Q18-3				
2. Identify the tools of financial statement analysis.	Q18-6 BE18-2	Q18-2 Q18-3	BE18-2			
3. Explain and apply horizontal analysis.	BE18-2	Q18-3 Q18-5	Q18-4 BE18-2 BE18-3 BE18-5 BE18-6	BE18-7 E18-1 E18-3 E18-4		
4. Describe and apply vertical analysis.	BE18-2	Q18-3 Q18-5	Q18-4 BE18-2 BE18-4 BE18-8	E18-2 E18-3 E18-4	P18-1	
5. Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.	Q18-6 Q18-8 BE18-2	Q18-5 Q18-7 Q18-9 Q18-10 Q18-11 Q18-12	Q18-13 Q18-14 Q18-15 Q18-16 Q18-17 Q18-18	E18-8 E18-9 E18-10 E18-10 E18-6 E18-7	BE18-11 BE18-12 BE18-13 E18-5 E18-11 P18-1	P18-2 P18-3 P18-4 P18-5 P18-7
6. Understand the concept of earning power, and how irregular items are presented.		Q18-20 Q18-21 Q18-22	BE18-14 BE18-15 E18-12	E18-13 P18-8 P18-9		
7. Understand the concept of quality of earnings.		Q18-24				
Broadening Your Perspective		Communication Decision Making Across the Organization		Financial Reporting Comp. Analysis Exploring the Web		Comp. Analysis Financial Reporting Decision Making Across the Organization Ethics Case All About You

# ANSWERS TO QUESTIONS

1. (a) Juan is not correct. There are three characteristics: liquidity, profitability, and solvency.  
(b) The three parties are not primarily interested in the same characteristics of a company. Short-term creditors are primarily interested in the liquidity of the enterprise. In contrast, long-term creditors and stockholders are primarily interested in the profitability and solvency of the company.
2. (a) Comparison of financial information can be made on an intracompany basis, an intercompany basis, and an industry average basis (or norms).
  - (1) An **intracompany basis** compares an item or financial relationship within a company in the current year with the same item or relationship in one or more prior years.
  - (2) The **industry averages basis** compares an item or financial relationship of a company with industry averages (or norms) published by financial rating services.
  - (3) An **intercompany basis** compares an item or financial relationship of one company with the same item or relationship in one or more competing companies.

(b) The **intracompany basis** of comparison is useful in detecting changes in financial relationships and significant trends within a company.  
The **industry averages basis** provides information as to a company's relative performance within the industry.  
The **intercompany basis** of comparison provides insight into a company's competitive position.
3. Horizontal analysis (also called trend analysis) measures the dollar and percentage increase or decrease of an item over a period of time. In this approach, the amount of the item on one statement is compared with the amount of that same item on one or more earlier statements. Vertical analysis expresses each item within a financial statement in terms of a percent of a base amount.
4. (a)  $\$360,000 \times 1.245 = \$448,200$ , 2009 net income.  
(b)  $\$360,000 \div .06 = \$6,000,000$ , 2008 revenue.
5. A ratio expresses the mathematical relationship between one quantity and another. The relationship is expressed in terms of either a percentage (200%), a rate (2 times), or a simple proportion (2:1). Ratios can provide clues to underlying conditions that may not be apparent from individual financial statement components. The ratio is more meaningful when compared to the same ratio in earlier periods or to competitors' ratios or to industry ratios.
6. (a) Liquidity ratios: Current ratio, acid-test ratio, receivables turnover, and inventory turnover.  
(b) Solvency ratios: Debt to total assets and times interest earned.
7. Cindy is correct. A single ratio by itself may not be very meaningful and is best interpreted by comparison with: (1) past ratios of the same company, (2) ratios of other companies, or (3) industry norms or predetermined standards. In addition, other ratios of the enterprise are necessary to determine overall financial well-being.
8. (a) Liquidity ratios measure the short-term ability of the enterprise to pay its maturing obligations and to meet unexpected needs for cash.  
(b) Profitability ratios measure the income or operating success of a company for a given period of time.  
(c) Solvency ratios measure the ability of the company to survive over a long period of time.

## Questions Chapter 18 (Continued)

9. The current ratio relates current assets to current liabilities. The acid-test ratio relates cash, short-term investments, and net receivables to current liabilities. The current ratio includes inventory and prepaid expenses while the acid-test ratio excludes these. The acid-test ratio provides additional information about short-term liquidity and is an important complement to the current ratio.
10. Donte Company does not necessarily have a problem. The receivables turnover ratio can be misleading in that some companies encourage credit and revolving charge sales and slow collections in order to earn a healthy return on the outstanding receivables in the form of high rates of interest.
11. (a) Asset turnover.  
(b) Inventory turnover.  
(c) Return on common stockholders' equity.  
(d) Times interest earned.
12. The price earnings (P/E) ratio is a reflection of investors' assessments of a company's future earnings. In this question, investors favor Microsoft because it has the higher P/E ratio. The investors feel that Microsoft will be able to generate even higher future earnings and so the investors are willing to pay more for the stock.
13. The payout ratio is cash dividends paid divided by net income. In a growth company, the payout ratio is often low because the company is reinvesting earnings in the business.
14. (a) The increase in profit margin is good news because it means that a greater percentage of net sales is going towards income.  
(b) The decrease in inventory turnover signals bad news because it is taking the company longer to sell the inventory and consequently there is a greater chance of inventory obsolescence.  
(c) An increase in the current ratio signals good news because the company improved its ability to meet maturing short-term obligations.  
(d) The earnings per share ratio is a deceptive ratio. The decrease might be bad news to the company because it could mean a decrease in net income. If there is an increase in stockholders' investment (as a result of issuing additional shares) and a decrease in EPS, then this means that the additional investment is earning a lower return (as compared to the return on common equity before the additional investment). Generally, this is undesirable.  
(e) The increase in the price-earnings ratio is generally good news because it means that the market price per share of stock has increased and investors are willing to pay that higher price for the stock. An increase in the P/E ratio is good news for investors who own the stock and don't want to buy any more. It is bad news for investors who want to buy (or buy more of) the stock.  
(f) The increase in the debt to total assets ratio is bad news because it means that the company has increased its obligations to creditors and has lowered its equity "buffer."  
(g) The decrease in the times interest earned ratio is bad news because it means that the company's ability to meet interest payments as they come due has weakened.

## Questions Chapter 18 (Continued)

15. 
$$\text{Return on assets (7.6\%)} = \frac{\text{Net Income}}{\text{Average Assets}}$$

$$\text{Return on common stockholders' equity (12.8\%)} = \frac{\text{Net Income} - \text{Preferred Dividends}}{\text{Average Common Stockholders' Equity}}$$

The difference between the two rates can be explained by looking at the denominator value and by remembering the basic accounting equation,  $A = L + SE$ . The asset value will clearly be the larger of the two denominator values; therefore, it will also give the smaller return.

16. (a) The times interest earned ratio, which is an indication of the company's ability to meet interest payments, and the debt to total assets ratio, which indicates the company's ability to withstand losses without impairing the interests of creditors.
- (b) The current ratio and the acid-test ratio, which indicate a company's liquidity and short-term debt-paying ability.
- (c) The earnings per share and the return on stockholders' equity, both of which indicate the earning power of the investment.
17. Earnings per share means earnings per share of common stock. Preferred stock dividends are subtracted from net income in computing EPS in order to obtain income available to common stockholders.
18. (a) Trading on the equity means that the company has borrowed money at a lower rate of interest than it is able to earn by using the borrowed money. Simply stated, it is using money supplied by nonowners to increase the return to the owners.
- (b) A comparison of the return on total assets with the rate of interest paid for borrowed money indicates the profitability of trading on the equity.

19. 
$$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average common shares outstanding}} = \text{Earnings per share}$$

$$\frac{\$160,000 - \$40,000}{50,000} = \$2.40$$

EPS of \$2.40 is high relative to what? Is it high relative to last year's EPS? The president may be comparing the EPS of \$2.40 to the market price of the company's stock.

20. Discontinued operations refers to the disposal of a significant component of the business such as the stopping of an entire activity or eliminating a major class of customers. It is important to report discontinued operations separately from continuing operations because the discontinued component will not affect future income statements.
21. EPS on income before extraordinary items usually is more relevant to an investment decision than EPS on net income. Income before extraordinary items represents the results of continuing and ordinary business activity. It is therefore a better basis for predicting future operating results than an EPS figure which includes the effect of extraordinary items that are not expected to recur again in the foreseeable future.

## Questions Chapter 18 (Continued)

- 22.** Extraordinary items are events and transactions that are unusual in nature and infrequent in occurrence. Therefore, an extraordinary item is a one-time item which is not typical of the company's operations. When comparing EPS trends, extraordinary items should be omitted since they are not reflective of normal operations. In this example, the trend is unfavorable because EPS, exclusive of extraordinary items, has decreased from \$3.20 to \$2.99
- 23.** Items (a), (d), and (g) are extraordinary items.
- 24.** (1) Use of alternative accounting methods. Variations among companies in the application of generally accepted accounting principles may hamper comparability.
- (2) Use of pro forma income measures that do not follow GAAP. Pro forma income is calculated by excluding items that the company believes are unusual or nonrecurring. It is often difficult to determine what was included and excluded.
- (3) Improper revenue and expense recognition. Many high-profile cases of inappropriate accounting involve recording items in the wrong period.

# **SOLUTIONS TO BRIEF EXERCISES**

## **BRIEF EXERCISE 18-1**

**Dear Uncle Frank,**

**It was so good to hear from you! I hope you and Aunt Irene are still enjoying your new house.**

**You asked some interesting questions. They relate very well to the material that we are studying now in my financial accounting class. You said you heard that different users of financial statements are interested in different characteristics of companies. This is true. A short-term creditor, such as a bank, is interested in the company's liquidity, or ability to pay obligations as they become due. The liquidity of a borrower is extremely important in evaluating the safety of a loan. A long-term creditor, such as a bondholder, would be interested in solvency, the company's ability to survive over a long period of time. A long-term creditor would also be interested in profitability. They are interested in the likelihood that the company will survive over the life of the debt and be able to meet interest payments. Stockholders are also interested in profitability, and in the solvency of the company. They want to assess the likelihood of dividends and the growth potential of the stock.**

**It is important to compare different financial statement elements to other items. The amount of a financial statement element such as cash does not have much meaning unless it is compared to something else. Comparisons can be done on an intracompany basis. This basis compares an item or financial relationship within a company for the current year to one or more previous years. Intracompany comparisons are useful in detecting changes in financial relationships and significant trends. Comparisons can also be done with industry averages. This basis compares an item or financial relationship with industry averages or norms. Comparisons with industry averages provide information as to a company's relative performance within the industry. Finally, comparisons can be done on an intercompany basis. This basis compares an item or financial relationship with the same item or relationship in one or more competing companies. Intercompany comparisons are useful in determining a company's competitive position.**

**I hope this answers your questions. If it does not, or you have more questions, please write me again or call. We could even meet for lunch sometime; it would be great to see you!**

**Love,**

**Your niece (or nephew)**



## BRIEF EXERCISE 18-2

(a) The three tools of financial statement analysis are horizontal analysis, vertical analysis, and ratio analysis. Horizontal analysis evaluates a series of financial statement data over a period of time. Vertical analysis evaluates financial statement data by expressing each item in a financial statement as a percent of a base amount. Ratio analysis expresses the relationship among selected items of financial statement data.

### (b) Horizontal Analysis

	<u>2007</u>	<u>2008</u>	<u>2009</u>
Current assets	100%	115%	120%

(115 = \$230,000/\$200,000; 120 = \$240,000/\$200,000)

### Vertical Analysis

	<u>2007</u>	<u>2008</u>	<u>2009</u>
Current assets*	40%	38%	39%

\*as a percentage of total assets

(40% = \$200,000/\$500,000; 38% = \$230,000/\$600,000;

39% = \$240,000/\$620,000)

### Ratio Analysis

	<u>2007</u>	<u>2008</u>	<u>2009</u>
Current ratio	1.25	1.37	1.30

(1.25 = \$200,000/\$160,000; 1.37 = \$230,000/\$168,000;

1.30 = \$240,000/\$184,000)

## BRIEF EXERCISE 18-3

Horizontal analysis:

	<u>Dec. 31, 2009</u>	<u>Dec. 31, 2008</u>	<u>Increase or (Decrease)</u>	
			<u>Amount</u>	<u>Percentage</u>
Accounts receivable	\$ 520,000	\$ 400,000	\$120,000	30%
Inventory	\$ 840,000	\$ 600,000	\$240,000	40%
Total assets	\$3,000,000	\$2,500,000	\$500,000	20%
	$\frac{120,000}{400,000} = .30$	$\frac{240,000}{600,000} = .40$	$\frac{500,000}{2,500,000} = .20$	

## BRIEF EXERCISE 18-4

Vertical analysis:

	Dec. 31, 2009		Dec. 31, 2008	
	Amount	Percentage*	Amount	Percentage**
Accounts receivable	\$ 520,000	17.3%	\$ 400,000	16.0%
Inventory	\$ 840,000	28.0%	\$ 600,000	24.0%
Total assets	\$3,000,000	100%	\$2,500,000	100%

$$* \frac{520,000}{3,000,000} = .173$$

$$** \frac{400,000}{2,500,000} = .16$$

$$* \frac{840,000}{3,000,000} = .28$$

$$** \frac{600,000}{2,500,000} = .24$$

## BRIEF EXERCISE 18-5

	2009	2008	2007
Net income	\$522,000	\$450,000	\$500,000

	Increase or (Decrease)	
	Amount	Percentage
(a) 2007–2008	(50,000)	(10%)
(b) 2008–2009	72,000	16%

$$\frac{50,000}{500,000} = .10$$

$$\frac{72,000}{450,000} = .16$$

## BRIEF EXERCISE 18-6

	2009	2008	Increase
Net income	\$585,000	X	30%

$$.30 = \frac{585,000 - X}{X}$$

$$.30X = 585,000 - X$$

## BRIEF EXERCISE 18-6 (Continued)

$$1.30X = 585,000$$

$$X = 450,000$$

$$2008 \text{ Net income} = \underline{\$450,000}$$

## BRIEF EXERCISE 18-7

Comparing the percentages presented results in the following conclusions: The net income for Epstein increased in 2008 because of the combination of an increase in sales and a decrease in both cost of goods sold and expenses. However, the reverse was true in 2009 as sales decreased while both cost of goods sold and expenses increased. This resulted in a decrease in net income.

## BRIEF EXERCISE 18-8

	<u>2009</u>	<u>2008</u>	<u>2007</u>
Sales	100.0	100.0	100.0
Cost of goods sold	59.2	62.4	64.5
Expenses	<u>25.0</u>	<u>25.6</u>	<u>27.5</u>
Net income	<u>15.8</u>	<u>12.0</u>	<u>8.0</u>

Net income as a percent of sales for Charles increased over the three-year period because cost of goods sold and expenses both decreased as a percent of sales every year.

## BRIEF EXERCISE 18-9

(a) Working capital = Current assets – Current liabilities

Current assets	\$45,918,000
Current liabilities	<u>40,644,000</u>
Working capital	<u>\$ 5,274,000</u>

## BRIEF EXERCISE 18-9 (Continued)

(b) Current ratio:

$$\frac{\text{Current assets}}{\text{Current liabilities}} = \frac{\$45,918,000}{\$40,644,000}$$
$$= \underline{1.13:1}$$

(c) Acid-test ratio:

$$\frac{\text{Cash + Short-term investments} + \text{Receivables (net)}}{\text{Current liabilities}} = \frac{\$8,041,000 + \$4,947,000 + \$12,545,000}{\$40,644,000}$$
$$= \frac{\$25,533,000}{\$40,644,000}$$
$$= \underline{.63:1}$$

## BRIEF EXERCISE 18-10

(a) Asset turnover =  $\frac{\text{Net sales}}{\text{Average assets}}$

$$= \frac{\$80,000,000}{\frac{\$14,000,000 + \$18,000,000}{2}}$$
$$= \underline{5 \text{ times}}$$

(b) Profit margin =  $\frac{\text{Net income}}{\text{Net sales}}$

$$= \frac{\$11,440,000}{\$80,000,000}$$
$$= \underline{14.3\%}$$

## BRIEF EXERCISE 18-11

(a)  $\text{Receivables turnover} = \frac{\text{Net credit sales}}{\text{Average net receivables}}$

	2009	2008
(1)	$\frac{\$3,960,000}{\$535,000^*} = 7.4 \text{ times}$ $*(\$520,000 + \$550,000) \div 2$	$\frac{\$3,100,000}{\$500,000^{**}} = 6.2 \text{ times}$ $**(\$480,000 + \$520,000) \div 2$
(2)	Average collection period	
	$\frac{365}{7.4} = 49.3 \text{ days}$	$\frac{365}{6.2} = 58.9 \text{ days}$

(b) Marino Company should be pleased with the effectiveness of its credit and collection policies. The company has decreased the average collection period by 9.6 days and the collection period of approximately 49 days is well within the 60 days allowed in the credit terms.

## BRIEF EXERCISE 18-12

(a)  $\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$

	2009	2008																																								
(1)	$\frac{\$4,300,000}{\left(\frac{\$980,000 + \$1,020,000}{2}\right)} = 4.3 \text{ times}$	$\frac{\$4,541,000}{\left(\frac{\$860,000 + \$980,000}{2}\right)} = 4.9 \text{ times}$																																								
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Beginning inventory</td> <td style="text-align: right;">\$ 980,000</td> <td style="width: 50%;"></td> <td style="text-align: right;">\$ 860,000</td> </tr> <tr> <td>Purchases</td> <td style="text-align: right;"><u>4,340,000</u></td> <td></td> <td style="text-align: right;"><u>4,661,000</u></td> </tr> <tr> <td>Goods available for sale</td> <td style="text-align: right;">5,320,000</td> <td></td> <td style="text-align: right;">5,521,000</td> </tr> <tr> <td>Ending inventory</td> <td style="text-align: right;"><u>1,020,000</u></td> <td></td> <td style="text-align: right;"><u>980,000</u></td> </tr> <tr> <td>Cost of goods sold</td> <td style="text-align: right;"><u>\$4,300,000</u></td> <td></td> <td style="text-align: right;"><u>\$4,541,000</u></td> </tr> </table>	Beginning inventory	\$ 980,000		\$ 860,000	Purchases	<u>4,340,000</u>		<u>4,661,000</u>	Goods available for sale	5,320,000		5,521,000	Ending inventory	<u>1,020,000</u>		<u>980,000</u>	Cost of goods sold	<u>\$4,300,000</u>		<u>\$4,541,000</u>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> <td style="width: 50%;"></td> <td style="text-align: right;">\$ 860,000</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;"><u>4,661,000</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;">5,521,000</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;"><u>980,000</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: right;"><u>\$4,541,000</u></td> </tr> </table>				\$ 860,000				<u>4,661,000</u>				5,521,000				<u>980,000</u>				<u>\$4,541,000</u>
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(2) Days in inventory

$\frac{365}{4.3} = 84.9 \text{ days}$	$\frac{365}{4.9} = 74.5 \text{ days}$
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## BRIEF EXERCISE 18-12 (Continued)

- (b) Management should be concerned with the fact that inventory is moving slower in 2009 than it did in 2008. The decrease in the turnover could be because of poor pricing decisions or because the company is stuck with obsolete inventory.

## BRIEF EXERCISE 18-13

$$\text{Payout ratio} = \frac{\text{Cash dividends}}{\text{Net income}}$$

$$.20 = \frac{X}{\$66,000}$$

$$X = \$66,000 (.20) = \$13,200$$

$$\text{Cash dividends} = \underline{\underline{\$13,200}}$$

$$\text{Return on assets} = \frac{\text{Net income}}{\text{Average assets}}$$

$$.15 = \frac{\$66,000}{X}$$

$$.15X = \$66,000$$

$$X = \frac{\$66,000}{.15}$$

$$X = \$440,000$$

$$\text{Average assets} = \underline{\underline{\$440,000}}$$

**BRIEF EXERCISE 18-14****MING CORPORATION  
Partial Income Statement**

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<b>Income before income taxes</b> .....	<b>\$400,000</b>
<b>Income tax expense (\$400,000 X 30%)</b> .....	<b><u>120,000</u></b>
<b>Income before extraordinary item</b> .....	<b>280,000</b>
<b>Extraordinary loss from flood, net of \$21,000 tax savings (\$70,000 X 30%)</b> .....	<b><u>49,000</u></b>
<b>Net income</b> .....	<b><u>\$231,000</u></b>

**BRIEF EXERCISE 18-15****REEVES CORPORATION  
Partial Income Statement**

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<b>Loss from operations of Mexico facility, net of \$90,000 tax saving (\$300,000 X 30%)</b> .....	<b>\$210,000</b>	
<b>Loss on disposal of Mexico facility, net of \$36,000 tax saving (\$120,000 X 30%)</b> .....	<b><u>84,000</u></b>	<b><u>\$294,000</u></b>

# SOLUTIONS TO EXERCISES

## EXERCISE 18-1

### BLEVINS INC. Condensed Balance Sheets December 31

			Increase or (Decrease)	
	2009	2008	Amount	Percentage
<b>Assets</b>				
Current assets	\$125,000	\$100,000	\$25,000	25.0%
Plant assets (net)	<u>396,000</u>	<u>330,000</u>	<u>66,000</u>	20.0%
<b>Total assets</b>	<b><u>\$521,000</u></b>	<b><u>\$430,000</u></b>	<b><u>91,000</u></b>	<b>21.2%</b>
<b>Liabilities</b>				
Current liabilities	\$ 91,000	\$ 70,000	\$21,000	30.0%
Long-term liabilities	<u>133,000</u>	<u>95,000</u>	<u>38,000</u>	40.0%
<b>Total liabilities</b>	<b><u>224,000</u></b>	<b><u>165,000</u></b>	<b><u>59,000</u></b>	<b>35.8%</b>
<b>Stockholders' Equity</b>				
Common stock, \$1 par	161,000	115,000	46,000	40.0%
Retained earnings	<u>136,000</u>	<u>150,000</u>	<u>(14,000)</u>	(9.3%)
<b>Total stockholders' equity</b>	<b><u>297,000</u></b>	<b><u>265,000</u></b>	<b><u>32,000</u></b>	<b>12.1%</b>
<b>Total liabilities and stockholders' equity</b>	<b><u>\$521,000</u></b>	<b><u>\$430,000</u></b>	<b><u>\$91,000</u></b>	<b>21.2%</b>



**EXERCISE 18-2**

**GALLUP CORPORATION**  
**Condensed Income Statements**  
**For the Years Ended December 31**

	<u>2009</u>		<u>2008</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Sales	\$750,000	100.0%	\$600,000	100.0%
Cost of goods sold	<u>465,000</u>	<u>62.0%</u>	<u>390,000</u>	<u>65.0%</u>
Gross profit	<u>285,000</u>	<u>38.0%</u>	<u>210,000</u>	<u>35.0%</u>
Selling expenses	120,000	16.0%	72,000	12.0%
Administrative expenses	<u>60,000</u>	<u>8.0%</u>	<u>54,000</u>	<u>9.0%</u>
Total operating expenses	<u>180,000</u>	<u>24.0%</u>	<u>126,000</u>	<u>21.0%</u>
Income before income taxes	105,000	14.0%	84,000	14.0%
Income tax expense	<u>33,000</u>	<u>4.4%</u>	<u>24,000</u>	<u>4.0%</u>
Net income	<u>\$ 72,000</u>	<u>9.6%</u>	<u>\$ 60,000</u>	<u>10.0%</u>

**EXERCISE 18-3**

(a)

**CONARD CORPORATION**  
**Condensed Balance Sheets**  
**December 31**

			<u>Increase (Decrease)</u>	<u>Percentage Change from 2008</u>
	<u>2009</u>	<u>2008</u>		
<b>Assets</b>				
Current assets	\$ 74,000	\$ 80,000	\$ (6,000)	(7.5%)
Property, plant & equipment (net)	99,000	90,000	9,000	10.0%
Intangibles	<u>27,000</u>	<u>40,000</u>	<u>(13,000)</u>	<u>(32.5%)</u>
Total assets	<u>\$200,000</u>	<u>\$210,000</u>	<u>\$(10,000)</u>	<u>(4.8%)</u>



## EXERCISE 18-4

(a)

### HENDI CORPORATION Condensed Income Statements For the Years Ended December 31

	2009	2008	Increase or (Decrease) During 2008	
			Amount	Percentage
Net sales	\$600,000	\$500,000	\$100,000	20.0%
Cost of goods sold	483,000	420,000	63,000	15.0%
Gross profit	117,000	80,000	37,000	46.3%
Operating expenses	57,200	44,000	13,200	30.0%
Net income	<u>\$ 59,800</u>	<u>\$ 36,000</u>	<u>\$ 23,800</u>	66.1%

(b)

### HENDI CORPORATION Condensed Income Statements For the Years Ended December 31

	2009		2008	
	Amount	Percent	Amount	Percent
Net sales	\$600,000	100.0%	\$500,000	100.0%
Cost of goods sold	483,000	80.5%	420,000	84.0%
Gross profit	117,000	19.5%	80,000	16.0%
Operating expenses	57,200	9.5%	44,000	8.8%
Net income	<u>\$ 59,800</u>	<u>10.0%</u>	<u>\$ 36,000</u>	<u>7.2%</u>

## EXERCISE 18-5

- (a) Current ratio = 1.9:1 ( $\$2,572 \div \$1,341$ )  
 Acid-test ratio = .75:1 ( $\$1,007 \div \$1,341$ )  
 Receivables turnover = 10.9 times ( $\$7,131 \div \$656.5$ )\*  
 Inventory turnover = 5.0 times ( $\$4,559 \div \$909.5$ )\*\*

\* $(\$646 + \$667) \div 2$

\*\* $(917 + 902) \div 2$

**EXERCISE 18-5 (Continued)**

<b>(b)</b>	<b>Ratio</b>	<b>Nordstrom</b>	<b>J.C. Penney</b>	<b>Industry</b>
	<b>Current</b>	<b>1.9:1</b>	<b>5.7:1</b>	<b>1.3:1</b>
	<b>Acid-test</b>	<b>.75:1</b>	<b>1.2:1</b>	<b>.3:1</b>
	<b>Receivables turnover</b>	<b>10.9</b>	<b>69.0</b>	<b>10.8</b>
	<b>Inventory turnover</b>	<b>5.0</b>	<b>3.6</b>	<b>6.7</b>

Nordstrom is below J.C. Penney for the current and acid-test ratios and the receivables turnover. Nordstrom is better than J.C. Penney for inventory turnover.

Nordstrom is better than the industry average for the current and acid test ratios and the receivables turnover, but below the industry average for the inventory turnover ratio.

**EXERCISE 18-6**

**(a) Current ratio as of February 1, 2008 = 2.6:1 (\$130,000 ÷ \$50,000).**

<b>Feb. 3</b>	<b>2.6:1</b>	<b>No change in total current assets or liabilities.</b>
<b>7</b>	<b>2.0:1</b>	<b>(\$102,000 ÷ \$50,000).</b>
<b>11</b>	<b>2.0:1</b>	<b>No change in total current assets or liabilities.</b>
<b>14</b>	<b>2.4:1</b>	<b>(\$90,000 ÷ \$38,000).</b>
<b>18</b>	<b>2.1:1</b>	<b>(\$90,000 ÷ \$43,000).</b>

**(b) Acid-test ratio as of February 1, 2008 = 2.3:1 (\$113,000\* ÷ \$50,000).**

**\*\$130,000 – \$15,000 – \$2,000**

<b>Feb. 3</b>	<b>2.3:1</b>	<b>No change in total quick assets or current liabilities.</b>
<b>7</b>	<b>1.7:1</b>	<b>(\$85,000 ÷ \$50,000).</b>
<b>11</b>	<b>1.6:1</b>	<b>(\$82,000 ÷ \$50,000).</b>
<b>14</b>	<b>1.8:1</b>	<b>(\$70,000 ÷ \$38,000).</b>
<b>18</b>	<b>1.6:1</b>	<b>(\$70,000 ÷ \$43,000).</b>

### EXERCISE 18-7

(a)  $\frac{\$145,000}{\$50,000} = 2.9:1.$

(b)  $\frac{\$85,000}{\$50,000} = 1.7:1.$

(c)  $\frac{\$390,000}{\$65,000 (1)} = 6.0 \text{ times.}$

(d)  $\frac{\$198,000}{\$55,000 (2)} = 3.6 \text{ times.}$

(1)  $\frac{\$70,000 + \$60,000}{2}$

(2)  $\frac{\$60,000 + \$50,000}{2}$

### EXERCISE 18-8

(a) Profit margin  $\frac{\$50,000}{\$760,000} = 6.6\%.$

(b) Asset turnover  $\frac{\$760,000}{\left[ \frac{\$500,000 + \$580,000}{2} \right]} = 1.4 \text{ times.}$

(c) Return on assets  $\frac{\$50,000}{\$540,000} = 9.3\%.$

(d) Return on common stockholders' equity  $\frac{\$50,000}{\left[ \frac{\$325,000 + \$430,000}{2} \right]} = 13.2\%.$

## EXERCISE 18-9

$$(a) \frac{\$65,000 - \$5,000}{30,000 \text{ shares}} = \$2.00.$$

$$(b) \frac{\$13.00}{\$2.00} = 6.5 \text{ times.}$$

$$(c) \frac{\$26,000}{\$65,000} = 40\%.$$

$$(d) \frac{\$65,000 + \$16,000 + \$24,000}{\$16,000} = \frac{\$105,000}{\$16,000} = 6.6 \text{ times.}$$

## EXERCISE 18-10

$$(a) \text{ Inventory turnover} = 3.5 = \frac{\text{Cost of goods sold}}{\left[ \frac{\$200,000 + \$180,000}{2} \right]}$$

$$3.5 \times \$190,000 = \text{Cost of goods sold}$$
$$\text{Cost of goods sold} = \$665,000.$$

$$(b) \text{ Receivables turnover} = 8.8 = \frac{\text{Net sales (credit)}}{\left[ \frac{\$72,500 + \$126,000}{2} \right]}$$

$$8.8 \times \$99,250 = \text{Net sales (credit)} = \$873,400.$$

$$(c) \text{ Return on common stockholders' equity} = 24\% =$$

$$\frac{\text{Net income}}{\left[ \frac{\$400,000 + \$113,500 + \$400,000 + \$101,000}{2} \right]}$$

$$.24 \times \$507,250 = \text{Net income} = \$121,740.$$

**EXERCISE 18-10 (Continued)**

(d) Return on assets = 20% =  $\frac{\$121,740 \text{ [see (c) above]}}{\text{Average assets}}$

Average assets =  $\frac{\$121,740}{.20} = \$608,700$

$\frac{\text{Total assets (Dec. 31, 2009)} + \$605,000}{2} = \$608,700$

Total assets (Dec. 31, 2009) =  $(\$608,700 \times 2) - \$605,000 = \$612,400.$

**EXERCISE 18-11**

- (a)  $(\$4,300 + \$21,200 + \$10,000)/\$12,370 = \underline{2.87}$
- (b)  $(\$4,300 + \$21,200)/\$12,370 = \underline{2.06}$
- (c)  $\$100,000/[(\$21,200 + \$23,400)/2] = \underline{4.48}$
- (d)  $\$60,000/[(\$10,000 + \$7,000)/2] = \underline{7.06}$
- (e)  $\$15,000/\$100,000 = \underline{15\%}$
- (f)  $\$100,000/[(\$110,500 + \$120,100)/2] = \underline{.87}$
- (g)  $\$15,000/[(\$110,500 + \$120,100)/2] = \underline{13\%}$
- (h)  $\$15,000/[(\$98,130 + \$89,000)/2] = \underline{16\%}$
- (i)  $\$12,370/\$110,500 = \underline{11.2\%}$

**EXERCISE 18-12**

(a) **MOLINI CORPORATION**  
**Partial Income Statement**  
**For the Year Ended October 31, 2008**

Income before income taxes.....	\$540,000
Income tax expense (\$540,000 X 30%).....	162,000
Income before extraordinary item.....	378,000
Extraordinary loss from flood, net of \$45,000	
tax savings (\$150,000 X 30%) .....	105,000
Net income .....	\$273,000

**EXERCISE 18-12 (Continued)**

**(b) To: Chief Accountant**

**From: Your name, Independent Auditor**

**After reviewing your income statement for the year ended 10/31/08, we believe it is misleading for the following reasons:**

**The amount reported for income before extraordinary items is overstated by \$45,000. The income tax expense should be 30% of \$540,000, or \$162,000, not \$117,000.**

**Also, the effect of the extraordinary loss on net income is only \$105,000, not \$150,000. An income tax savings of \$45,000 should be netted against the extraordinary loss.**

**EXERCISE 18-13**

**(a) YADIER CORPORATION  
Partial Income Statement  
For the Year Ended December 31, 2008**

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<b>Income from continuing operations .....</b>	<b>\$290,000</b>
<b>Discontinued operations</b>	
<b>Gain on discontinued division, net of \$9,000</b>	
<b>income taxes .....</b>	<b>21,000</b>
<b>Income before extraordinary item .....</b>	<b>311,000</b>
<b>Extraordinary item</b>	
<b>Extraordinary loss, net of \$24,000 income tax saving .....</b>	<b>56,000</b>
<b>Net income.....</b>	<b><u>\$255,000</u></b>

**(b) The correction of an error in last year's financial statements is a prior period adjustment. The correction is reported in the 2008 retained earnings statement as an adjustment that increases the reported beginning balance of retained earnings by \$14,000, or [\$20,000 – (\$20,000 X 30%)].**



# SOLUTIONS TO PROBLEMS

## PROBLEM 18-1

(a) **Condensed Income Statement**  
**For the Year Ended December 31, 2009**

	<b>Douglas Company</b>		<b>Maulder Company</b>	
	Dollars	Percent	Dollars	Percent
Net sales	\$1,549,035	100.0%	\$339,038	100.0%
Cost of goods sold	1,080,490	69.8%	241,000	71.1%
Gross profit	468,545	30.2%	98,038	28.9%
Operating expenses	302,275	19.5%	79,000	23.3%
Income from operations	166,270	10.7%	19,038	5.6%
Other expenses and losses				
Interest expense	8,980	.6%	2,252	.7%
Income before income taxes	157,290	10.1%	16,786	4.9%
Income tax expense	54,500	3.5%	6,650	1.9%
Net income	\$ 102,790	6.6%	\$ 10,136	3.0%

- (b) Douglas Company appears to be more profitable. It has higher relative gross profit, income from operations, income before taxes, and net income. Douglas's return on assets of 12.4%  $\left(\frac{\$102,790}{\$829,848}\right)^a$  is higher than Maulder's return on assets of 4.7%  $\left(\frac{\$10,136}{\$214,172}\right)^b$ . Also, Douglas's return on common stockholders' equity of 15.6%  $\left(\frac{\$102,790}{\$660,028}\right)^c$  is higher than Maulder's return on stockholders' equity of 6.6%  $\left(\frac{\$10,136}{\$154,047}\right)^d$ .

**PROBLEM 18-1 (Continued)**

<sup>a</sup>\$102,790 is Douglas's 2009 net income. \$829,848 is Douglas's 2009 average assets:

	<u>2009</u>		<u>2008</u>		
Current assets	\$325,975		\$312,410		
Plant assets	<u>521,310</u>		<u>500,000</u>		
Total assets	<u>\$847,285</u>	+	<u>\$812,410</u>	=	$\frac{\$1,659,695}{2}$

<sup>b</sup>\$10,136 is Maulder's 2009 net income. \$214,172 is Maulder's 2009 average assets:

	<u>2009</u>		<u>2008</u>		
Current assets	\$ 83,336		\$ 79,467		
Plant assets	<u>139,728</u>		<u>125,812</u>		
Total assets	<u>\$223,064</u>	+	<u>\$205,279</u>	=	$\frac{\$428,343}{2}$

<sup>c</sup>\$102,790 is Douglas's 2009 net income. \$660,028 is Douglas's 2009 average stockholders' equity:

	<u>2009</u>		<u>2008</u>		
Common stock	\$500,000		\$500,000		
Retained earnings	<u>173,460</u>		<u>146,595</u>		
Stockholders' equity	<u>\$673,460</u>	+	<u>\$646,595</u>	=	$\frac{\$1,320,055}{2}$

<sup>d</sup>\$10,136 is Maulder's 2009 net income. \$154,047 is Maulder's 2009 average stockholders' equity:

	<u>2009</u>		<u>2008</u>		
Common stock	\$120,000		\$120,000		
Retained earnings	<u>38,096</u>		<u>29,998</u>		
Stockholders' equity	<u>\$158,096</u>	+	<u>\$149,998</u>	=	$\frac{\$308,094}{2}$

**PROBLEM 18-2**

(a) Earnings per share =  $\frac{\$192,000}{57,000} = \$3.37.$

(b) Return on common stockholders' equity =  $\frac{\$192,000}{\left[ \frac{\$465,400 + \$566,700}{2} \right]}$   
 $= \frac{\$192,000}{\$516,050}$   
 $= 37.2\%.$

(c) Return on assets =  $\frac{\$192,000}{\left[ \frac{\$852,800 + \$970,200}{2} \right]}$  =  $\frac{\$192,000}{\$911,500} = 21.1\%.$

(d) Current ratio =  $\frac{\$369,900}{\$203,500} = 1.82:1$

(e) Acid-test ratio =  $\frac{\$246,900}{\$203,500} = 1.21:1$

(f) Receivables turnover =  $\frac{\$1,818,500}{\left[ \frac{(\$102,800 + \$117,800)}{2} \right]}$   
 $= \frac{\$1,818,500}{\$110,300}$   
 $= 16.5 \text{ times.}$

**PROBLEM 18-2 (Continued)**

(g) Inventory turnover =  $\frac{\$1,011,500}{\left[ \frac{\$115,500 + \$123,000}{2} \right]} = \frac{\$1,011,500}{\$119,250} = 8.5 \text{ times.}$

(h) Times interest earned =  $\frac{\$291,000}{\$18,000} = 16.2 \text{ times.}$

(i) Asset turnover =  $\frac{\$1,818,500}{\$911,500^*} = 2.0 \text{ times.}$

$*(\$852,800 + \$970,200) \div 2$

(j) Debt to total assets =  $\frac{\$403,500}{\$970,200} = 41.6\%.$

<b>PROBLEM 18-3</b>
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<b>(a)</b>	<b>2008</b>	<b>2009</b>
<b>(1) Profit margin.</b>	$\frac{\$30,000}{\$650,000} = 4.6\%$	$\frac{\$45,000}{\$700,000} = 6.4\%$
<b>(2) Asset turnover.</b>	$\frac{\$650,000}{\left[ \frac{\$533,000 + \$600,000}{2} \right]} = 1.1 \text{ times}$	$\frac{\$700,000}{\left[ \frac{\$600,000 + \$640,000}{2} \right]} = 1.1 \text{ times}$
<b>(3) Earnings per share.</b>	$\frac{\$30,000}{31,000} = \$ .97$	$\frac{\$45,000}{32,000} = \$1.41$
<b>(4) Price-earnings ratio.</b>	$\frac{\$5.00}{\$ .97} = 5.2 \text{ times}$	$\frac{\$8.00}{\$1.41} = 5.7 \text{ times}$
<b>(5) Payout ratio.</b>	$\frac{\$18,000^*}{\$30,000} = 60.0\%$	$\frac{\$25,000^{**}}{\$45,000} = 55.6\%$
	$*(\$113,000 + \$30,000 - \$125,000)$	$**(\$125,000 + \$45,000 - \$145,000)$
<b>(6) Debt to total assets.</b>	$\frac{\$165,000}{\$600,000} = 27.5\%$	$\frac{\$155,000}{\$640,000} = 24.2\%$

### **PROBLEM 18-3 (Continued)**

- (b) The underlying profitability of the corporation appears to have improved. For example, profit margin and earnings per share have both increased. In addition, the corporation's price-earnings ratio has increased, which suggests that investors may be looking more favorably at the corporation. Also, the corporation appears to be involved in attempting to reduce its debt burden as its debt to total assets ratio has decreased. Similarly, its payout ratio has decreased, which should help its overall solvency.**

<b>PROBLEM 18-4</b>
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**(a) LIQUIDITY**

	2008	2009	Change
Current	$\frac{\$343,000}{\$182,000} = 1.9:1$	$\frac{\$374,000}{\$198,000} = 1.9:1$	No change
Acid-test	$\frac{\$185,000}{\$182,000} = 1.0:1$	$\frac{\$220,000}{\$198,000} = 1.1:1$	Increase
Receivables turnover	$\frac{\$790,000}{\$84,000^*} = 9.4 \text{ times}$	$\frac{\$850,000}{\$89,000^{**}} = 9.6 \text{ times}$	Increase
	* $(\$88,000 + \$80,000) \div 2$	** $(\$80,000 + \$98,000) \div 2$	
Inventory turnover	$\frac{\$575,000}{\$126,500^*} = 4.5 \text{ times}$	$\frac{\$620,000}{\$130,000^{**}} = 4.8 \text{ times}$	Increase
	* $(\$118,000 + \$135,000) \div 2$	** $(\$135,000 + \$125,000) \div 2$	

**An overall increase in short-term liquidity has occurred.**

**PROFITABILITY**

Profit margin	$\frac{\$42,000}{\$790,000} = 5.3\%$	$\frac{\$43,000}{\$850,000} = 5.1\%$	Decrease
Asset turnover	$\frac{\$790,000}{\$639,000} = 1.2 \text{ times}$	$\frac{\$850,000}{\$666,000} = 1.3 \text{ times}$	Increase
Return on assets	$\frac{\$42,000}{\$639,000} = 6.6\%$	$\frac{\$43,000}{\$666,000} = 6.5\%$	Decrease
Earnings per share	$\frac{\$42,000}{20,000} = \$2.10$	$\frac{\$43,000}{20,000} = \$2.15$	Increase

**Profitability has remained relatively the same.**

**PROBLEM 18-4 (Continued)**

<b>(b)</b>	<u>2009</u>	<u>2010</u>	<u>Change</u>
1. Return on common stockholders' equity	$\frac{\$43,000}{\$326,000 \text{ (a)}} = 13.2\%$	$\frac{\$50,000}{\$451,000 \text{ (b)}} = 11.1\%$	Decrease
2. Debt to total assets	$\frac{\$348,000}{\$684,000} = 50.9\%$	$\frac{\$248,000}{\$700,000} = 35.4\%$	Decrease
3. Price-earnings ratio	$\frac{\$9.00}{\$2.15} = 4.2 \text{ times}$	$\frac{\$12.80}{\$2.50 \text{ (c)}} = 5.1 \text{ times}$	Increase

(a)  $(\$200,000 + \$136,000 + \$200,000 + \$116,000) \div 2$ .

(b)  $(\$380,000 + \$186,000 + \$200,000 + \$136,000) \div 2$ .

(c)  $\$50,000 \div 20,000$ .



## PROBLEM 18-5

(a)	Ratio	Target		Wal-Mart	
		(All Dollars Are in Millions)			
(1)	Current	1.7:1	(\$13,922 ÷ \$8,220)	.9:1	(\$38,491 ÷ \$42,888)
(2)	Receivables turnover	9.4	(\$45,682 ÷ \$4,845)	192.1	(\$285,222 ÷ \$1,485)
(3)	Average collection period	38.8	(365 ÷ 9.4)	1.9	(365 ÷ 192.1)
(4)	Inventory turnover	6.3	(\$31,445 ÷ \$4,958)	7.8	(\$219,793 ÷ \$28,030)
(5)	Days in inventory	57.9	(365 ÷ 6.3)	46.8	(365 ÷ 7.8)
(6)	Profit margin	7.0%	(\$3,198 ÷ \$45,682)	3.6%	(\$10,267 ÷ \$285,222)
(7)	Asset turnover	1.4	(\$45,682 ÷ \$31,854.5 <sup>a</sup> )	2.5	(\$285,222 ÷ \$112,814 <sup>c</sup> )
(8)	Return on assets	10.0%	(\$3,198 ÷ \$31,854.5 <sup>a</sup> )	9.1%	(\$10,267 ÷ \$112,814 <sup>c</sup> )
(9)	Return on common stockholders' equity	26.5%	(\$3,198 ÷ \$12,080.5 <sup>b</sup> )	22.1%	(\$10,267 ÷ \$46,509.5 <sup>d</sup> )
(10)	Debt to total assets	59.7%	(\$19,264 ÷ \$32,293)	58.9%	(\$70,827 ÷ \$120,223)
(11)	Times interest earned	8.6	(\$4,914 ÷ \$570)	17.1	(\$16,842 ÷ \$986)

$$^a(\$32,293 + \$31,416) \div 2$$

$$^b(\$13,029 + \$11,132) \div 2$$

$$^c(\$120,223 + \$105,405) \div 2$$

$$^d(\$49,396 + \$43,623) \div 2$$

(b) The comparison of the two companies shows the following:

**Liquidity**—Target's current ratio of 1.7:1 is significantly better than Wal-Mart's .9:1. However, Wal-Mart has a better inventory turnover ratio than Target and its receivables turnover is substantially better than Target's.

**Solvency**—Wal-Mart betters Target in both of the solvency ratios. Thus, it is more solvent than Target.

**Profitability**—With the exception of asset turnovers, Target betters Wal-Mart in all of the profitability ratios. Thus, it is more profitable than Wal-Mart.

**PROBLEM 18-6**

(a) Current ratio =  $\frac{\$215,000}{\$145,000} = 1.5:1.$

(b) Acid-test ratio =  $\frac{\$21,000 + \$18,000 + \$86,000}{\$145,000} = 0.86:1.$

(c) Receivables turnover =  $\frac{\$600,000}{\left[ \frac{(\$86,000 + \$74,000)}{2} \right]}$   
= 7.5 times.

(d) Inventory turnover =  $\frac{\$415,000}{\left[ \frac{\$90,000 + \$70,000}{2} \right]} = 5.2 \text{ times.}$

(e) Profit margin ratio =  $\frac{\$38,400}{\$600,000} = 6.4\%.$

(f) Asset turnover =  $\frac{\$600,000}{\left[ \frac{\$638,000 + \$560,000}{2} \right]} = 1.0 \text{ times.}$

(g) Return on assets =  $\frac{\$38,400}{\left[ \frac{\$638,000 + \$560,000}{2} \right]} = 6.4\%.$

(h) Return on common stockholders' equity =  $\frac{\$38,400}{\left[ \frac{\$373,000 + \$350,000}{2} \right]}$   
= 10.6%.

**PROBLEM 18-6 (Continued)**

(i) Earnings per share =  $\frac{\$38,400}{30,000 (1)}$  = \$1.28.

(1)  $\$150,000 \div \$5.00$

(j) Price-earnings ratio =  $\frac{\$19.50}{\$1.28}$  = 15.2 times.

(k) Payout ratio =  $\frac{\$15,400 (2)}{\$38,400}$  = 40.1%.

(2)  $\$200,000 + \$38,400 - \$223,000$

(l) Debt to total assets =  $\frac{\$265,000}{\$638,000}$  = 41.5%.

(m) Times interest earned =  $\frac{\$64,200 (3)}{\$7,800}$  = 8.2 times.

(3)  $\$38,400 + \$18,000 + \$7,800$

**PROBLEM 18-7**

$$\text{Receivables turnover} = 10 = \frac{\$11,000,000}{\text{Average receivables}}$$

$$\text{Average receivables} = \frac{\$11,000,000}{10} = \$1,100,000$$

$$\frac{\text{Net receivables 12/31/09} + \$950,000}{2} = \$1,100,000$$

$$\text{Net receivables 12/31/09} + \$950,000 = \$2,200,000$$

$$\text{Net receivables 12/31/09} = \$1,250,000$$

$$\text{Profit margin} = 14.5\% = .145 = \frac{\text{Net income}}{\$11,000,000}$$

$$\text{Net income} = \$11,000,000 \times .145 = \$1,595,000$$

$$\text{Income before income taxes} = \$1,595,000 + \$560,000 = \$2,155,000$$

$$\text{Return on assets} = 22\% = .22 = \frac{\$1,595,000}{\text{Average assets}}$$

$$\text{Average assets} = \$1,595,000 \div .22 = \$7,250,000$$

$$\frac{\text{Assets (12/31/09)} + \$7,000,000}{2} = \$7,250,000$$

$$\text{Assets (12/31/09)} = \$7,500,000$$

$$\text{Total current assets} = \$7,500,000 - \$4,620,000 = \$2,880,000$$

$$\text{Inventory} = \$2,880,000 - \$1,250,000 - \$450,000 = \$1,180,000$$

$$\text{Total liabilities and stockholders' equity} = \$7,500,000$$

$$\text{Total liabilities} = \$7,500,000 - \$3,400,000 = \$4,100,000$$

**PROBLEM 18-7 (Continued)**

$$\text{Current ratio} = 3.0 = \frac{\$2,880,000}{\text{Current liabilities}}$$

$$\text{Current liabilities} = \$2,880,000 \div 3.0 = \$960,000$$

$$\text{Long-term notes payable} = \$4,100,000 - \$960,000 = \$3,140,000$$

$$\text{Inventory turnover} = 4.8 = \frac{\text{Cost of goods sold}}{\left[ \frac{\$1,720,000 + \$1,180,000}{2} \right]}$$

$$\text{Cost of goods sold} = \$1,450,000 \times 4.8 = \$6,960,000$$

$$\text{Gross profit} = \$11,000,000 - \$6,960,000 = \$4,040,000$$

$$\text{Income from operations} = \$4,040,000 - \$1,665,000 = \$2,375,000$$

$$\text{Interest expense} = \$2,375,000 - \$2,155,000 = \$220,000$$

<b>PROBLEM 18-8</b>
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**CHEANEY CORPORATION**  
**Condensed Income Statement**  
**For the Year Ended December 31, 2008**

<b>Operating revenues</b>		
(\$12,850,000 – \$2,000,000) .....		<b>\$10,850,000</b>
<b>Operating expenses</b>		
(\$8,700,000 – \$2,400,000) .....		<u>6,300,000</u>
<b>Income from operations</b> .....		<u>4,550,000</u>
<b>Other revenues and gains</b> .....		<u>100,000</u>
<b>Income before income taxes</b> .....		<u>4,650,000</u>
<b>Income tax expense (\$4,650,000 X 30%)</b> .....		<u>1,395,000</u>
<b>Income from continuing operations</b> .....		<u>3,255,000</u>
<b>Discontinued operations</b>		
<b>Loss from operations of hotel chain*, net of \$120,000 income tax savings</b> .....	<b>\$280,000</b>	
<b>Gain on sale of hotels, net of \$60,000 income taxes</b> .....	<u>140,000</u>	<u>140,000</u>
<b>Income before extraordinary item</b> .....		<u>3,115,000</u>
<b>Extraordinary item</b>		
<b>Extraordinary loss, net of \$240,000 income tax saving</b> .....		<u>560,000</u>
<b>Net income</b> .....		<u><u>\$ 2,555,000</u></u>

\*\$2,000,000 – \$2,400,000 = (\$400,000)

**PROBLEM 18-9**

**LARUSSA CORPORATION**  
**Income Statement**  
**For the Year Ended December 31, 2008**

Net sales .....		<b>\$1,700,000</b>
Cost of goods sold .....		<u><b>1,100,000</b></u>
Gross profit.....		<b>600,000</b>
Selling and administrative expenses .....		<u><b>270,000</b></u>
Income from operations .....		<b>330,000</b>
Other revenues and gains.....	<b>\$20,000</b>	
Other expenses and losses.....	<u><b>28,000</b></u>	<u><b>8,000</b></u>
Income before income taxes.....		<b>322,000</b>
Income tax expense (\$322,000 X 30%).....		<u><b>96,600</b></u>
Income from continuing operations.....		<b>225,400</b>
Discontinued operations		
Income from operations of discontinued division, net of \$6,000 income taxes .....	<b>14,000</b>	
Loss on sale of discontinued division, net of \$27,000 income tax saving .....	<u><b>63,000</b></u>	<u><b>49,000</b></u>
Income before extraordinary item .....		<b>176,400</b>
Extraordinary item		
Gain from expropriation, net of \$36,000 income taxes.....		<u><b>84,000</b></u>
Net income .....		<u><u><b>\$ 260,400</b></u></u>

(a) **PEPSICO, INC.**  
**Trend Analysis of Net Sales and Net Income**  
**For the Five Years Ended 2005**

Base Period 2001—(in millions)

	2005	2004	2003	2002	2001
(1) Net sales	\$32,562	\$29,261	\$26,971	\$25,112	\$23,512
Trend	138%	124%	115%	107%	100%
(2) Net income	4,078	4,212	3,568	3,000	2,400
Trend	170%	176%	149%	125%	100%

Between 2001 and 2003 PepsiCo's net sales increased by 15%. Its net sales increased 20% from 2003 to 2005. PepsiCo's net income increased by 70% between 2001 and 2005 or about 18% per annum.

(b) (dollar amounts in millions)

(1) Profit Margin

$$2005: \$4,078 \div \$32,562 = 12.5\%$$

$$2004: \$4,212 \div \$29,261 = 14.4\%$$

(2) Asset Turnover

$$2005: \$35,562 \div [(\$31,727 + \$27,987) \div 2] = 1.19 \text{ times}$$

$$2004: \$29,261 \div [(\$27,987 + \$25,327) \div 2] = 1.10 \text{ times}$$

(3) Return on Assets

$$2005: \$4,078 \div [(\$31,727 + \$27,987) \div 2] = 13.7\%$$

$$2004: \$4,212 \div [(\$27,987 + \$25,327) \div 2] = 15.8\%$$



## **BYP 18-1 (Continued)**

### **(4) Return on Common Stockholders' Equity**

$$2005: \$4,078 \div [(\$14,320 + \$13,572) \div 2] = 29.2\%$$

$$2004: \$4,212 \div [(\$13,572 + \$11,896) \div 2] = 33.1\%$$

**In general, PepsiCo's profitability has decreased from 2004 to 2005.**

### **(c) (dollar amounts in millions)**

#### **(1) Debt to Total Assets**

$$2005: \$17,476 \div \$31,727 = 55.1\%$$

$$2004: \$14,464 \div \$27,987 = 51.7\%$$

#### **(2) Times Interest Earned**

$$2005: (\$6,382 + \$256) \div \$256 = 25.9 \text{ times}$$

$$2004: (\$5,546 + \$167) \div \$167 = 34.2 \text{ times}$$

**Although creditors are providing more than 55% of PepsiCo's total assets, its long-term solvency is not in jeopardy. PepsiCo has the ability to pay the interest on its debt as indicated by the times interest earned ratio of about 26 in 2005.**

- (d) Substantial amounts of important information about a company are not in its financial statements. Events involving such things as industry changes, management changes, competitors' actions, technological developments, governmental actions, and union activities are often critical to the successful operation of a company. Financial reports in the media and publications of financial service firms (Standard & Poors, Dun & Bradstreet) will provide relevant information not usually found in the annual report.**

(a)	PepsiCo	Coca-Cola Company
(1) (i) Percentage increase in net sales	$\frac{\$32,562 - \$29,261}{\$29,261} = 11.3\%$	$\frac{\$23,104 - \$21,742}{\$21,742} = 6.3\%$
(ii) Percentage increase (decrease) in net income	$\frac{\$4,078 - \$4,212}{\$4,212} = (3.2\%)$	$\frac{\$4,872 - \$4,847}{\$4,847} = .5\%$
(2) (i) Percentage increase (decrease) in total assets	$\frac{\$31,727 - \$27,987}{\$27,987} = 13.4\%$	$\frac{\$29,427 - \$31,441}{\$31,441} = (6.4\%)$
(ii) Percentage increase (decrease) in total stockholders' equity	$\frac{\$14,320 - \$13,572}{\$13,572} = 5.5\%$	$\frac{\$16,355 - \$15,935}{\$15,935} = 2.6\%$
(3) Basic earnings per share	\$2.43*	\$2.04*
Price-earnings ratio	$\frac{\$59.08}{\$2.43} = 24.3 \text{ times}$	$\frac{\$43.60}{\$2.04} = 21.4 \text{ times}$

\*Given on income statement

- (b) PepsiCo's net sales increased 11.3% while Coca-Cola's increased 6.3%. PepsiCo's net income decreased 3.2% while Coca-Cola's net income increased .5% from 2004 to 2005. PepsiCo's total assets increased 13.4% while Coca-Cola decreased its assets 6.4%.

PepsiCo increased stockholders' equity by 5.5% while Coca-Cola's stockholders' equity increased 2.6%. The absolute amounts of earnings per share, \$2.43 for PepsiCo and \$2.04 for Coca-Cola, are not comparable in a qualitative way since these amounts are dependent on the number of shares outstanding.

PepsiCo's net income decreased, even though their net sales increased more than Coca-Cola's net sales.

- (a) Optional elements include:
- ▶ Financial highlights
  - ▶ Letter to stockholders
  - ▶ Corporate message
  - ▶ Report of management
  - ▶ Board of directors and management
  - ▶ Stockholder information
- (b) SEC-required elements include:
- ▶ Auditors' report
  - ▶ Management discussion
  - ▶ Financial statements and notes
  - ▶ Selected financial data
- (c) **Management discussion**. This series of short, detailed reports discusses and analyzes the company's performance. It covers results of operations, and the adequacy of liquid and capital resources to fund operations.
- (d) **Auditors' report**. This summary of the findings of an independent firm of certified public accountants shows whether the financial statements are complete, reasonable, and prepared consistent with generally accepted accounting principles (GAAP) at a set time.
- (e) **Selected financial data**. This information summarizes a company's financial condition and performance over five years or longer. Data for making comparisons over time may include revenue (sales), gross profit, net earnings (net income), earnings per share, dividends per share, financial ratios such as return on equity, number of shares outstanding, and the market price per share.

The current ratio increase is a favorable indication as to liquidity, but alone tells little about the going-concern prospects of the client. From this ratio change alone, it is impossible to know the amount and direction of the changes in individual accounts, total current assets, and total current liabilities. Also unknown are the reasons for the changes.

The acid-test ratio decrease is an unfavorable indication as to liquidity, especially when the current-ratio increase is also considered. This decline is also unfavorable as to the going-concern prospects of the client because it reflects a declining cash position and raises questions as to reasons for the increases in other current assets, such as inventories.

The change in asset turnover cannot alone tell anything about either solvency or going-concern prospects. There is no way to know the amount and direction of the changes in sales and assets. An increase in sales would be favorable for going-concern prospects, while a decrease in assets could represent a number of possible scenarios and would need to be investigated further.

The increase in net income is a favorable indicator for both solvency and going-concern prospects, although much depends on the quality of receivables generated from sales and how quickly they can be converted into cash. If there has been a decline in sales, a significant factor is that management has been able to reduce costs to produce an increase in earnings. Indirectly, the improved income picture may have a favorable impact on solvency and going-concern potential by enabling the client to borrow currently (if it needs to do so) to meet cash requirements.

The 32-percent increase in earnings per share, which is identical to the percentage increase in net income, is an indication that there has probably been no change in the number of shares of common stock outstanding. This, in turn, indicates that financing was not obtained through the issuance of common stock. It is not possible to reach conclusions about solvency and going-concern prospects without additional information about the nature and extent of financing.

## **BYP 18-4 (Continued)**

**The increase in the book value per share is a favorable indicator for both solvency and the going-concern potential of the company.**

**The collective implications of these data alone are that the client entity is about as solvent and as viable a going concern at the end of the current year as it was at the beginning although there may be a need for short-term operating cash.**

(a) **GENERAL DYNAMICS CORPORATION**  
**Income Statement**  
**For the Year Ended December 31, 2008**

(In Millions  
of Dollars)

Net sales .....		<u>\$8,163.8</u>
Cost of goods sold.....		<u>6,958.8</u>
Gross profit .....		1,205.0
Selling and administrative expenses.....		<u>537.0</u>
Income from operations .....		668.0
Other revenues and gains		
Interest revenue.....	\$ 3.6	
Other expenses and losses		
Interest expense .....	<u>17.2</u>	<u>13.6</u>
Income before income taxes .....		654.4
Income tax expense.....		<u>282.9</u>
Income from continuing operations.....		371.5
Discontinued operations		
Earnings from operation of Quincy		
Division, net of \$12.5 income taxes .....	15.8	
Loss from disposal of Quincy Division,		
net of \$4.3 income tax saving .....	<u>5.0</u>	<u>10.8</u>
Net income .....		<u>\$ 382.3</u>
Earnings per share of common stock		
Income from continuing operations .....		\$ 8.78
Gain from discontinued operations.....		<u>.26</u>
Net income .....		<u>\$ 9.04</u>

- (b) (1) In the preceding year, Quincy had net earnings from discontinued operations of \$28.8 million (\$51.6 – \$22.8). Therefore, the average number of common shares outstanding during the year is 47.2 million shares. This amount is found by dividing the income from discontinued operations, \$28.8 million, by its earning per share amount \$0.61.
- (2) In the preceding year, Quincy had income from continuing operations of \$352.6 million (47.2 million shares X \$7.47/share).

**To: Beth Harlan**  
**From: Accounting Major**  
**Subject: Financial Statement Analysis**

**There are two fundamental considerations in financial statement analysis: (1) the bases of comparison and (2) the factors affecting quality of earnings. Each of these considerations is explained below.**

- 1. Bases of comparison. The bases of comparison are:**
  - a. Intracompany—This basis compares an item or financial relationship within a company in the current year with the same item or relationship in one or more prior years.**
  - b. Industry averages—This basis compares an item or financial relationship of a company with industry averages (or norms).**
  - c. Intercompany—This basis compares an item or financial relationship of one company with the same item or relationship in one or more competing companies.**
  
- 2. Factors affecting quality of earnings are:**
  - a. Alternative accounting methods—Variations among companies in the application of generally accepted accounting principles may hamper comparability and reduce quality of earnings.**
  - b. Pro forma income—This income figure usually excludes items that the company thinks are unusual or nonrecurring.**
  - c. Improper recognition—Because some managers have felt pressure from investors to continually increase earnings, they have manipulated the earnings numbers to meet these expectations.**

- (a) The stakeholders in this case are:
- ▶ Jack McClintock, president of McClintock Industries.
  - ▶ Jeremy Phelps, public relations director.
  - ▶ You, as controller of McClintock Industries.
  - ▶ Stockholders of McClintock Industries.
  - ▶ Potential investors in McClintock Industries.
  - ▶ Any readers of the press release.
- (b) The president's press release is deceptive and incomplete and to that extent his actions are unethical.
- (c) As controller you should at least inform Jeremy, the public relations director, about the biased content of the release. He should be aware that the information he is about to release, while factually accurate, is deceptive and incomplete. Both the controller and the public relations director (if he agrees) have the responsibility to inform the president of the bias of the about to be released information.



**Student responses will vary. We suggest that in class you ask for a few students to share their responses in order to increase students understanding of the various reasons why different people will choose different investment vehicles.**

