Review Problem

Financial Statement Analysis

The comparative statements of comprehensive income and balance sheets for Montana Corporation for the years ending December 31, 2018 and 2017, are given here.

Montana Corporation
Statements of Comprehensive Income
For the Years Ended December 31, 2018 and 2017

	2018	2017
Net sales	$600,000	$575,000
Cost of goods sold	500,000	460,000
Gross margin	$100,000	$115,000
Expenses:		
Selling and administrative expenses	$ 66,000	$ 60,000
Interest expense	4,000	3,000
Total expenses	$ 70,000	$ 63,000
Income before taxes	$ 30,000	$ 52,000
Income taxes	12,000	21,000
Net income	$ 18,000	$ 31,000
Other comprehensive income	0	0
Comprehensive income	$ 18,000	$ 31,000
Earnings per share	$ 1.80	$ 3.10

Montana Corporation
Balance Sheets
December 31, 2018 and 2017

	2018	2017
Assets		
Current assets:		
Cash	$ 11,000	$ 13,000
Accounts receivable (net)	92,000	77,000
Inventory	103,000	92,000
Prepaid expenses	6,000	5,000
Total current assets	$212,000	$187,000
Property, plant, and equipment:		
Land and building	$ 61,000	$ 59,000
Machinery and equipment	172,000	156,000
Total property, plant, and equipment	$233,000	$215,000
Less accumulated depreciation	113,000	102,000
Net property, plant, and equipment	$120,000	$113,000
Other assets	$ 8,000	$ 7,000
Total assets	$340,000	$307,000

Montana Corporation Balance Sheets (Continued) December 31, 2018 and 2017	2018	2017
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 66,000	$ 55,000
Notes payable	—	23,000
Dividends payable	2,000	—
Income taxes payable	3,000	5,000
Total current liabilities	$ 71,000	$ 83,000
Long-term debt	75,000	42,000
Total liabilities	$146,000	$125,000
Equity		
Common stock ($1 par)	$ 10,000	$ 10,000
Paid-in capital in excess of par	16,000	16,000
Retained earnings	168,000	156,000
Total equity	$194,000	$182,000
Total liabilities and equity	$340,000	$307,000

Additional information:	
Dividends declared in 2018	$ 6,000
Market price per share, December 31, 2018	$ 14.50
Cash flow information:	
Cash from operations for 2018	$ 11,000
Cash paid for capital expenditures for 2018	$ 19,000

Required:

Prepare a comprehensive financial statement analysis of Montana Corporation for 2018. Note that though financial statement analysts usually compare data from two or more years, we are more concerned here with the methods of analysis than the results, so we will use only one year, 2018.

Solution:

1. **Key Relationships**

   The computation of the four key ratios for 2018 provides the analyst with an overall view of the company's performance and gives an indication of how well management performed with respect to operations, asset turnover, and debt-equity management.

Computation of Key Ratios (2018)

Operating Performance		Asset Turnover		Debt-Equity Management		Return on Equity
$\frac{\text{Net income}}{\text{Net sales}}$	×	$\frac{\text{Net sales}}{\text{Average total assets}}$	×	$\frac{\text{Average total assets}}{\text{Average total equity}}$	=	$\frac{\text{Net income} - \text{Preference dividends}}{\text{Average total equity}}$
$\frac{\$18{,}000}{\$600{,}000}$	×	$\frac{\$600{,}000}{\$323{,}500}$	×	$\frac{\$323{,}500}{\$188{,}000}$	=	$\frac{\$18{,}000 - 0}{\$188{,}000}$
3.00%	×	1.85 times	×	1.72 times	=	9.57%*

*The factors do not multiply to the product because of rounding.

2. Analysis of Operating Performance

Operating performance is measured by means of vertical and horizontal analyses of the statement of comprehensive income.

(1) Vertical analysis of the statement of comprehensive income: When the statement of comprehensive income is analyzed vertically, net sales is set at 100%, and each item is shown as a percentage of net sales.

Montana Corporation
Vertical Analysis of Statement of Comprehensive Income
For the Year Ended December 31, 2018

Net sales	$600,000	100.0%
Cost of goods sold	500,000	83.3
Gross margin	$100,000	16.7%
Expenses:		
Selling and administrative expenses	$ 66,000	11.0%
Interest expense	4,000	0.7
Total expenses	$ 70,000	11.7%
Income before taxes	$ 30,000	5.0%
Income taxes	12,000	2.0
Net income	$ 18,000	3.0%
Other comprehensive income	0	0
Comprehensive income	$ 18,000	3.0%

(2) Horizontal analysis of statement of comprehensive income: When the statement of comprehensive income is analyzed horizontally, the amount in 2017 is set at 100% to calculate the trend from 2017 to 2018.

Montana Corporation
Horizontal Analysis of Statement of Comprehensive Income
For the Year Ended December 31, 2018 and 2017

	2018	2017	Amount Change	% Change
Net sales	$600,000	$575,000	$25,000	4.35
Cost of sales	500,000	460,000	40,000	8.70
Gross margin	$100,000	$115,000	−$15,000	−13.04
Expenses				
Selling and administrative expenses	$ 66,000	$ 60,000	$6,000	10.00
Interest expenses	4,000	3,000	1,000	33.33
Total expenses	$ 70,000	$ 63,000	$ 7,000	11.11
Income before taxes	$ 30,000	$ 52,000	−$22,000	−42.31
Income taxes	12,000	21,000	−9,000	−42.86
Net income	$ 18,000	$ 31,000	−$13,000	−41.94
Other comprehensive income	–	–	–	–
Comprehensive income	$ 18,000	$ 31,000	−$13,000	−41.94

3. Analysis of Asset Turnover and Utilization

Asset turnover and utilization are analyzed by performing vertical and horizontal analyses of the balance sheet.

(1) Vertical analysis of the balance sheet

Montana Corporation
Vertical Analysis of Balance Sheet (as a % of sales)
December 31, 2018

Assets		
Current assets:		
Cash	$ 11,000	1.8%
Accounts receivable (net)	92,000	15.3
Inventory	103,000	17.2
Prepaid expenses	6,000	1.0
Total current assets	$212,000	35.3%
Property, plant, and equipment:		
Land and building	$ 61,000	10.2%
Machinery and equipment	172,000	28.7
Total property, plant, and equipment	$233,000	38.8%*
Less accumulated depreciation	113,000	18.8
Net property, plant, and equipment	$120,000	20.0%
Other assets	$ 8,000	1.3%
Total assets	$340,000	56.7%*
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 66,000	11.0%
Dividends payable	2,000	0.3
Income taxes payable	3,000	0.5
Total current liabilities	$ 71,000	11.8%
Long-term debt	75,000	12.5
Total liabilities	$146,000	24.3%
Equity	194,000	32.3
Total liabilities and equity	$340,000	56.7%*

**Note:* Because of rounding, the percentages don't always add up exactly.

(2) Horizontal analysis of the balance sheet

Montana Corporation
Horizontal Analysis of Balance Sheet
December 31, 2018 and 2017

	2018	2017	Amount Change	% Change
Assets				
Current assets				
Cash	$ 11,000	$ 13,000	−2,000	−15.38
Accounts receivable (net)	92,000	77,000	15,000	19.48
Inventory	103,000	92,000	11,000	11.96
Prepaid expenses	6,000	5,000	1,000	20.00
Total current assets	$212,000	$187,000	25,000	13.37
Property, plant, and equipment				
Land and building	$ 61,000	$ 59,000	2,000	3.39
Machinery and equipment	172,000	156,000	16,000	10.26
Total property, plant, and equipment	$233,000	$215,000	18,000	8.37
Less accumulated depreciation	113,000	102,000	11,000	10.78
Net property, plant, and equipment	$120,000	$113,000	7,000	6.19
Other assets	$ 8,000	$ 7,000	1,000	14.29
Total assets	$340,000	$307,000	33,000	10.75

Montana Corporation
Horizontal Analysis of Balance Sheet
December 31, 2018 and 2017 (continued)

Liabilities and Equity				
Current liabilities				
Accounts payable	$ 66,000	$ 55,000	11,000	20.00
Notes payable	–	23,000	−23,000	−100.00
Dividends payable	2,000	–	2,000	–
Income tax payable	3,000	5,000	−2,000	−40.00
Total current liabilities	$ 71,000	$ 83,000	−12,000	−14.46
Long-term debt	75,000	42,000	33,000	78.57
Total liabilities	$146,000	$125,000	21,000	16.80
Equity				
Common stock ($1 par)	$ 10,000	$ 10,000	–	–
Paid-in capital in excess of par	16,000	16,000	–	–
Retained earnings	168,000	156,000	12,000	7.69
Total equity	$194,000	$182,000	12,000	6.59
Total liabilities and equity	$340,000	$307,000	33,000	10.75

4. Common Ratios

a. Current ratio: $\dfrac{\text{Current assets}}{\text{Current liabilities}} = \dfrac{\$212{,}000}{\$71{,}000} = 2.99$

b. Accounts receivable turnover: $\dfrac{\text{Net sales}}{\text{Average accounts receivable}} = \dfrac{600{,}000}{\dfrac{\$77{,}000 + \$92{,}000}{2}} = 7.10 \text{ times}$

c. Inventory turnover: $\dfrac{\text{Cost of goods sold}}{\text{Average inventory}} = \dfrac{\$500{,}000}{\dfrac{\$92{,}000 + \$103{,}000}{2}} = 5.13 \text{ times}$

d. Debt ratio: $\dfrac{\text{Total liabilities}}{\text{Total assets}} = \dfrac{\$146{,}000}{\$340{,}000} = 42.9\%$

e. Return on sales: $\dfrac{\text{Net income}}{\text{Net sales}} = \dfrac{\$18{,}000}{\$600{,}000} = 0.03$

f. Asset turnover ratio: $\dfrac{\text{Net sales}}{\text{Average total assets}} = \dfrac{\$600{,}000}{\dfrac{\$340{,}000 + \$307{,}000}{2}} = \dfrac{\$600{,}000}{\$323{,}500} = 1.85 \text{ times}$

g. Return on equity: $\dfrac{\text{Net income} - \text{preference dividends}}{\text{Average total equity}} = \dfrac{\$18{,}000}{\dfrac{\$194{,}000 + \$182{,}000}{2}} = \dfrac{\$18{,}000}{\$188{,}000} = 9.6\%$

h. Price-earnings ratio: $\dfrac{\text{Market price per share}}{\text{Earnings per share}} = \dfrac{\$14.50}{\$1.80} = 8.1$

i. Cash flow-to-net income ratio: $\dfrac{\text{Cash flow from operations}}{\text{Net income}} = \dfrac{\$11{,}000}{\$18{,}000} = 0.61$

j. Cash flow adequacy ratio: $\dfrac{\text{Cash flow from operations}}{\text{Cash paid for capital expenditures}} = \dfrac{\$11{,}000}{\$19{,}000} = 0.58$

Put it on Paper

Discussion Questions

1. Financial statement analysis can be used to identify a company's weak areas so that management can work toward improvement. Can financial statement analysis be used for any other purpose? Explain.
2. "An analysis of a company's financial ratios reveals the underlying reasons for the company's problems." Do you agree or disagree? Explain.
3. What benchmarks can be used to add meaning to a computed financial ratio value?
4. What are vertical and horizontal financial statement analyses? What are their advantages?
5. What other types of information should be gathered if a vertical analyses of financial statements suggests that a company has problems?
6. What is the most informative section of the common-size balance sheet? Explain.
7. What characteristic of a company does current ratio measure?
8. What can the inventory turnover ratio tell us?
9. How is fixed asset turnover calculated, and what does the resulting ratio value mean?
10. What does the debt-to-equity ratio measure?
11. From the standpoint of a lender, which is more attractive: a high times interest earned ratio or a low times interest earned ratio? Explain.
12. Company A has a return on sales of 6%. Is this a high value for return on sales?
13. How does the price-earnings ratio differ from most other financial ratios?
14. Why are cash flow ratios often excluded from financial analysis models?
15. Why is it especially important to look at cash flow data when examining a firm that is preparing to make an application for a large loan?
16. What does it mean when the value of a company's cash flow adequacy ratio is less than one?
17. What is the purpose of the DuPont framework?
18. Identify the three ROE components represented in the DuPont framework and tell what ratio summarizes a company's performance in each area.
19. What further analysis can be done if the DuPont calculations suggest that a company has a profitability problem?
20. What factors can reduce comparability among financial statements?
21. What is the danger in focusing a financial analysis solely on the data found in the historical financial statements?

Practice Exercises

PE 14-1
LO 1

What Is a Financial Ratio?

A financial ratio is a

a. Key source of external financing for most publicly traded companies.
b. Relationship between financial statement amounts.
c. Stockbroker who performs financial statement analysis.
d. Trend in a number over time.
e. Complete set of the four primary financial statements.

PE 14-2
LO 1

Usefulness of Financial Ratios

The usefulness of financial ratios is greatly enhanced when the values are

a. Computed by the SEC.
b. Compared to values for companies in different industries.
c. Compared to past values of the same ratio for the same company.
d. Compared to the retained earnings balance.
e. Included in the body of the statement of cash flows.

PE 14-3
LO 2

Vertical Analysis of Statement of Comprehensive Income

Using the following data, conduct a vertical analysis of comprehensive income (ignore other comprehensive income).

Sales		$150,000
Cost of goods sold		80,000
Gross profit		$70,000
Operating expenses:		
Sales and marketing	$6,000	
General and administrative	16,000	
Total operating expenses		22,000
Operating income		$48,000
Interest expense		8,000
Income before income taxes		$40,000
Income tax expense		7,000
Net income		$33,000

PE 14-4
LO 2

Vertical and Horizontal Analyses of Statement of Comprehensive Income

Using the following data, (1) conduct a vertical analysis of comprehensive income for years 1 and 2, (2) conduct a horizontal analysis of comprehensive income for years 1 and 2, and (3) briefly outline why return on sales is lower in year 2 (1.8%) compared to year 1 (7.0%). Ignore other comprehensive income.

	Year 2	Year 1
Sales	$200,000	$160,000
Cost of goods sold	140,000	100,000
Gross profit	$ 60,000	$ 60,000
Operating expenses	50,000	40,000
Operating income	$ 10,000	$ 20,000
Interest expense	4,000	4,000
Income before income taxes	$ 6,000	$ 16,000
Income tax expense	2,400	4,800
Net income	$ 3,600	$ 11,200

PE 14-5
LO 2

Vertical Analysis of Balance Sheet

Using the following data, conduct a vertical analysis for the balance sheet.

Assets		
Current assets:		
Cash	$2,400	
Accounts receivable	4,650	
Inventory	3,000	
Total current assets		$10,050
Property, plant, and equipment (net)		16,500
Goodwill		2,850
Total assets		$29,400
Liabilities and Equity		
Current liabilities:		
Accounts payable	$3,600	
Unearned revenue	1,900	
Total current liabilities		$ 5,500
Long-term debt		9,000
Total liabilities		$14,500
Capital stock		7,500
Retained earnings		7,400
Total liabilities and equity		$29,400

PE 14-6
LO 3

Financial Ratios Defined

Write the formula for computing each of the following financial ratios.

a. Debt ratio
b. Current ratio
c. Return on sales
d. Asset turnover
e. Return on equity
f. Price-earnings ratio
g Acid-test (quick) ratio

PE 14-7
LO 3

Debt Ratio

Using the following data, compute the debt ratio.

Accounts Payable (ending)	$ 7,000
Accounts Receivable (ending)	12,000
Building (ending)	130,000
Cash (ending)	4,200
Capital Stock (ending)	48,600
Inventory (ending)	8,200
Land (ending)	28,000
Total assets (beginning)	240,000
Long-Term Notes Payable (ending)	64,000
Market Value of Equity	206,000
Net Income	20,000
Retained Earnings (ending)	48,000
Sales	210,000
Short-Term Notes Payable (ending)	11,400
Equity (ending)	96,600
Equity (beginning)	115,400
Unearned Revenue (ending)	3,400

PE 14-8
LO 3

Current Ratio

Refer to the data in PE 14-7. Compute the current ratio.

PE 14-9
LO 3

Return on Sales

Refer to the data in PE 14-7. Compute return on sales.

PE 14-10
LO 3

Asset Turnover

Refer to the data in PE 14-7. Compute asset turnover.

PE 14-11
LO 3

Return on Equity

Refer to the data in PE 14-7. Compute return on equity.

PE 14-12
LO 3

Price-Earnings Ratio

Refer to the data in PE 14-7. Compute the price-earnings ratio.

PE 14-13
LO 3

Acid-Test (Quick) Ratio

Refer to the data in PE 14-7. Compute the acid-test (quick) ratio.

PE 14-14
LO 3

Accounts Receivable Turnover

Using the following data, calculate Pace Company's accounts receivable turnover.

Accounts receivable balance, December 31	$ 120,000
Inventory balance, December 31	90,000
Sales revenue	1,300,000
Cost of goods sold	700,000
Accounts receivable balance, January 1	104,000

PE 14-15
LO 3

Average Collection Period

Refer to the data in PE 14-14. Calculate Pace Company's average collection period.

PE 14-16
LO 3

Inventory Turnover

Using the following data, compute inventory turnover.

Inventory, December 31, year 1	$ 41,000
Cost of goods sold	171,000
Sales	347,000
Inventory, January 1, year 1	37,000

PE 14-17
LO 3

Number of Days' Sales in Inventory

Refer to the data in PE 14-16. Compute the number of days' sales in inventory.

PE 14-18
LO 3

Fixed Asset Turnover

Using the following data, compute the fixed asset turnover.

Current assets, end of year	$ 100,000
Fixed assets, end of year	600,000
Fixed assets, beginning of year	680,000
Sales during the year	1,520,000

PE 14-19
LO 3

Debt Ratio

Using the following information, compute the debt ratio.

Total liabilities	$123,750
Annual interest expense	2,602
Total assets	271,425
Income before interest and taxes	31,015

PE 14-20
LO 3

Debt-to-Equity Ratio

Refer the data in PE 14-19. Compute the debt-to-equity ratio.

PE 14-21
LO 3

Times Interest Earned Ratio

Refer the data in PE 14-19. Compute the times interest earned ratio.

PE 14-22
LO 3

Earnings Per Share

Using the following data, compute the earnings per share. (Assume there's no change in common shares during the year.)

Net income	$ 37,500	Weighted-average common shares outstanding	18,000 shares
Sales	225,000		
Preference Dividends	1,500		

PE 14-23
LO 3

When Operating Cash Flow Information Is Particularly Valuable

Which one of the following is *not* a situation in which cash flow data can provide a better picture of a company's economic performance than does net income?

a. A company preparing for an initial public offering
b. A company experiencing rapid growth
c. A company reporting large non-cash expenses
d. A company with high asset turnover
e. A company preparing to apply for a large loan

PE 14-24
LO 3

Cash Flow-to-Net Income Ratio

Using the following information, compute the cash flow-to-net income ratio.

Total revenues	$600,000
Cash expenses	230,000
Non-cash expenses	320,000
Cash paid for capital expenditures	120,000
Cash from operations	70,000

PE 14-25
LO 3

Cash Flow Adequacy Ratio

Refer the data in PE 14-24. Compute the cash flow adequacy ratio.

PE 14-26
LO 4

DuPont Framework Defined

1. List the three ratios that combine to form the DuPont framework. Also, list the formulas used to compute each ratio.
2. Give a brief intuitive explanation of the interpretation of the values of each of the three ratios.

PE 14-27
LO 4

Computation of Return on Equity Using the DuPont Framework

Using the following DuPont framework ratios, compute return on equity for year 1, year 2, and year 3.

	Year 3	Year 2	Year 1
Return on sales	20.7%	19.6%	18.9%
Asset turnover	0.64	0.61	0.56
Assets-to-equity ratio	1.12	1.08	1.07

PE 14-28
LO 4

Analysis of Return on Equity Using the DuPont Framework

Refer to the data in PE 14-27. Briefly explain why the company's return on equity increased from year 1 to year 3.

PE 14-29
LO 5

Potential Pitfalls of Financial Statement Analysis

Which one of the following statements is true with respect to financial statement analysis?

a. All aspects of a business can be summarized neatly into the four primary financial statements.
b. Comparing the financial statements of different companies is relatively easy, because all companies are required to use the same financial statement formats and classifications.
c. Every company examined using financial statement analysis will be found to have at least one prominent flaw.
d. Analysts should use only historical ratio analysis, rather than information about current events, in deciding how to rate a company's future prospects.
e. Financial statement analysis usually does not give answers but instead points in directions where further investigation is needed.

EXERCISES

E 14-1
LO 2

Vertical and Horizontal Analyses of Statement of Comprehensive Income

Comparative statements of comprehensive income for Queen Engineering Company for 2018 and 2017 are given below. Ignore other comprehensive income.

	2018	2017
Sales	$ 1,770,000	$ 1,090,000
Cost of goods sold	(1,140,000)	(610,000)
Gross profit on sales	$ 630,000	$ 480,000
Selling and general expenses	(212,000)	(168,000)
Operating income	$ 418,000	$ 312,000
Interest expense	(70,000)	(40,000)
Income before income tax	$ 348,000	$ 272,000
Income tax expense	(104,000)	(82,000)
Net income	$ 244,000	$ 190,000

1. Prepare a vertical analysis of comprehensive income for Queen Engineering Company for 2018 and 2017.
2. Prepare a horizontal analysis of comprehensive income for Queen Engineering Company for 2018 and 2017.
3. Return on sales for Queen Engineering is lower in 2018 and 2017. What expense or expenses are causing this lower profitability?

E 14-2
LO 2

Vertical Analysis of Balance Sheet

The following data are taken from the comparative balance sheet prepared for White Road Company:

	2018	2017
Cash	$ 68,000	$ 50,000
Accounts receivable	86,000	80,000
Inventories	136,000	60,000
Property, plant, and equipment	182,000	110,000
Total assets	$472,000	$300,000

Prepare the asset section of a vertical analysis of the balance sheet for White Road Company for 2018 and 2017.

E 14-3
LO 2

Vertical and Horizontal Analyses of Statement of Comprehensive Income

Comparative statements of comprehensive income for Candy Company for 2018 and 2017 are given below. Ignore other comprehensive income.

	2018	2017
Sales	$800,000	$450,000
Cost of goods sold	510,000	240,000
Gross profit	$290,000	$210,000
Selling and administrative expenses	100,000	80,000
Operating income	$190,000	$130,000
Interest expense	40,000	30,000
Income before taxes	$150,000	$100,000
Income tax expense	45,000	30,000
Net income	$105,000	$ 70,000

1. Prepare vertical and horizontal analyses of statements of comprehensive income for Candy Company for 2018 and 2017.
2. The profit margin for Candy is lower in 2018 than in 2017. What expense or expenses are causing this lower profitability?

E 14-4

LO 2

Statement of Comprehensive Income Analysis

You have obtained the following data for Lindsey Garns Company.

Sales	$1,000,000
Gross profit (as a percentage of sales)	25%
Return on sales	10%
Operating expenses (as a percentage of sales)	12%

Based on the above data, determine the following:

1. Cost of goods sold
2. Net income
3. Operating expenses
4. Income taxes (assume there are no other expenses or revenues)

E 14-5

LO 3

Computation of Ratios

The balance sheet for Tobin Corporation is as follows.

Tobin Corporation
Balance Sheet
December 31, 2018

Assets	
Current assets:	
Cash	$ 30,000
Accounts receivable	42,000
Total current assets	$ 72,000
Long-term investments	60,000
Property, plant, and equipment	120,000
Total assets	$252,000
Liabilities and Equity	
Current liabilities:	
Accounts payable	$ 38,000
Salaries payable	18,000
Total current liabilities	$ 56,000
Long-term liabilities	46,000
Total liabilities	$102,000
Equity	
Paid-in capital	$100,000
Retained earnings	50,000
Total equity	$150,000
Total liabilities and equity	$252,000

In addition, the following information for 2018 has been assembled:

Net sales	$600,000
Net income	34,000
Market value at December 31, 2018	360,000

Assume on Dec. 31, 2017, total assets were $268,000 and total equity was $140,000.
Compute the following ratios:

1. Debt ratio
2. Current ratio
3. Acid-test (quick) ratio
4. Return on sales
5. Asset turnover
6. Return on equity
7. Price-earnings ratio

E 14-6
LO 3

Ratios and Computing Missing Values

The balance sheet for Robison Company is as follows.

Robison Company
Balance Sheet
December 31, 2018

Assets	
Current assets:	
Cash	$ (a)
Accounts receivable	110,000
Total current assets	$ (b)
Long-term investments	70,000
Property, plant, and equipment	240,000
Total assets	$ (c)
Liabilities and Equity	
Current liabilities:	
Account payable	$128,000
Income taxes payable	(d)
Total current liabilities	$160,000
Long-term liabilities	(e)
Total liabilities	$ (f)
Equity:	
Paid-in capital	$ (g)
Retained earnings	157,000
Total equity	$ (h)
Total liabilities and equity	$ (i)

In addition, the following information for 2018 has been assembled:

Debt ratio	50%
Current ratio	1.2

Compute the missing values (a) through (i).

E 14-7
LO 3

Computations Using Ratios

The following information for Chris Company for 2018 has been assembled.

Market value at December 31, 2018	$300,000
Total liabilities	$ 50,000
Debt ratio	40%
Return on sales	10%
Asset turnover	2.0

Given that total assets on December 31, 2017 was $100,000, compute the following:

1. Total assets
2. Net sales
3. Net income
4. Price-earnings ratio

E 14-8
LO 3

Statement of Comprehensive Income and Balance Sheet Analysis

Answer each of the following independent questions:

1. Nicholas Toy Company had a net income for the year ended December 31, 2018, of $144,000. Its total assets were $3,720,000 on December 31, 2018 and $3,500,000 on December 31, 2017. Its total equity were $1,820,000 on December 31, 2018 and $1,900,000 on December 31, 2017. Calculate Nicholas Toy's return on equity.
2. On January 1, 2018, Andrew's Bookstore had current assets of $586,000 and current liabilities of $370,000. By the end of the year, its current assets had increased to $648,000 and its current liabilities to $592,000. Did the current ratio change during the year? If so, by how much?

3. The total liabilities and equity of Ryan James Corporation is $1,500,000. Its current assets equal 40% of total assets and the current ratio is 2.0. Further, the ratio of equity to total liabilities is 3 to 1. Determine (a) the amount of current liabilities and (b) the debt ratio.

E 14-9
LO 3

Financial Statement Analysis

You have obtained the following data for Jacob Company for the year ended December 31, 2018. (Some items on the statement of comprehensive income are missing.)

Cost of goods sold	$ 970,000
General and administrative expenses	160,000
Interest expense	17,000
Net income	24,000
Net sales	1,580,000
Tax expense	16,000

Answer each of the following questions:

1. What is the total gross profit?
2. What is the amount of operating income?
3. What is the amount of other operating expenses (in addition to general and administrative expenses)?
4. What is the gross profit percentage (that is, gross profit as a percentage of sales)?
5. If the return on assets is 4%, what are the average total assets?
6. If the return on equity is 8%, what is the average total equity?
7. What is the return on sales?
8. What is the income tax rate? (Tax expense/Income before taxes)

E 14-10
LO 3

Accounts Receivable Efficiency

The following are summary financial data for Paul Enterprises, Inc., and Bob, Inc., for three recent years:

	Year 3	Year 2	Year 1
Net sales (in millions):			
Paul Enterprises, Inc.	$30,000	$32,000	$34,000
Bob, Inc.	52,000	44,000	40,000
Net accounts receivable (in millions):			
Paul Enterprises, Inc.	6,000	7,500	7,600
Bob, Inc.	17,000	18,000	20,000

1. Using the above data, compute the accounts receivable turnover (rounded to the nearest hundredth) and average collection period (rounded to the nearest tenth) for each company for years 2 and 3.
2. Which company appears to be managing its accounts receivable more efficiently?

E 14-11
LO 3

Inventory Ratios

The following data are available for 2018, regarding the inventory of two companies.

	Atkins Computers	Burbank Electronics
Beginning inventory	$ 25,000	$ 50,000
Ending inventory	30,000	57,500
Cost of goods sold	375,000	500,000

Compute inventory turnover (round to the nearest hundredth) and number of days' sales in inventory (round to the nearest tenth) for both companies. Which company is managing its inventory more efficiently?

E 14-12
LO 3

Fixed Asset Turnover

The Store Next Door reported the following asset values in 2017 and 2018:

	2018	2017
Cash	$ 10,000	$ 54,000
Accounts receivable	1,000,000	860,000
Inventory	1,100,000	960,000
Land	600,000	560,000
Buildings	1,600,000	1,320,000
Equipment	300,000	220,000

In addition, The Store Next Door had sales of $6,400,000 in 2018. Cost of goods sold for the year was $3,800,000.

Compute The Store Next Door's fixed asset turnover ratio for 2018.

E 14-13
LO 3

Efficiency Ratio

The following information contains the financial statements of ExxonMobil and Chevron:

(in millions)	ExxonMobil	Chevron
Sales	$259,488	$129,925
Cost of goods sold	130,003	69,751
Accounts receivable (average)	23,942	14,798
Inventory (average)	16,462	6,420
Property, plant, and equipment (average)	252,137	185,785

Compute the following:

1. Accounts receivable efficiency
2. Average collection period
3. Inventory efficiency
4. Number of days' sales in inventory
5. Fixed asset turnover

E 14-14
LO 3

Leverage Ratio

The following information contains the financial statements of ExxonMobil and Chevron:

(in millions)	ExxonMobil	Chevron
Total assets	$336,758	$266,103
Total liabilities	159,948	112,217
Total equity	176,810	153,886
Operating profit	22,277	4,842
Interest expense	311	0

Compute the following:

1. Debt-to-equity ratio
2. Debt ratio
3. Times interest earned ratio

E 14-15
LO 3

Cash Flow Ratios

Below are data extracted from the financial statements of Perfume Ella Company.

Perfume Ella Company
Selected Financial Statement Data
For the Years Ended December 31, 2018 and 2017

	2018	2017
Net income	$110,000	$150,000
Cash from operating activities	86,000	460,000
Cash paid for purchase of fixed assets	100,000	480,000
Cash paid for interest	50,000	60,000
Cash paid for income taxes	60,000	110,000

Compute the following for both 2018 and 2017:

1. Cash flow-to-net income ratio
2. Cash flow adequacy ratio

E 14-16
LO 4

DuPont Framework Computations

Using the following data, compute return on equity, return on sales, asset turnover, and the assets-to-equity ratio.

Total assets (ending)	$280,000
Total assets (beginning)	$320,000
Interest expense	$ 12,000
Total equity (ending)	$140,000
Total equity (beginning)	$130,000
Net sales	$500,000
Net income	$ 50,000
Total liabilities (ending)	$140,000
Total liabilities (beginning)	$ 44,000
Market value of equity	$340,000
Current ratio	2.48

E 14-17
LO 4

DuPont Framework

The following information is for Calle Concordia Company:

	2018	2017	2016
Current assets	$ 20,000	$ 17,500	$ 25,000
Total assets	55,000	45,000	50,000
Current liabilities	10,000	7,500	7,500
Total liabilities	25,000	20,000	25,000
Total equity	30,000	25,000	25,000
Net sales	250,000	200,000	200,000
Net income	17,500	8,500	4,000

For the years 2017 and 2018, compute:

1. Return on equity
2. Return on sales
3. Asset turnover
4. Assets-to-equity ratio

E 14-18
LO 4

DuPont Framework

The numbers for Frank Company and Bill Company for the year 2018 are as follows:

	Frank	Bill
Cash (ending)	$ 70	$ 250
Accounts receivable (ending)	450	1,370
Inventory (ending)	1,100	3,050
Property, plant, and equipment (ending)	900	3,150
Total assets (beginning)	3,480	7,180
Total liabilities (beginning)	1,860	6,135
Total liabilities (ending)	1,890	5,865
Total equity (beginning)	1,620	1,045
Total equity (ending)	630	1,955
Sales	6,000	22,500
Cost of goods sold	3,825	16,050
Wage expense	650	2,100
Other expenses	1,470	3,880
Net income	55	470

1. Compute return on equity, return on sales, asset turnover, and the assets-to-equity ratio for both Frank and Bill.
2. Briefly explain why Frank's return on equity is lower than Bill's.

E 14-19
LO 4

DuPont Framework

The following information is for Ina Company:

	2018	2017	2016
Total assets	$ 400,000	$ 320,000	$ 360,000
Total liabilities	180,000	160,000	200,000
Total equity	220,000	160,000	160,000
Net sales	1,600,000	1,200,000	1,200,000
Net income	80,000	40,000	20,000

For the years 2017 and 2018, compute:
1. Return on equity
2. Profit margin
3. Asset turnover
4. Assets-to-equity ratio

E 14-20
LO 4

DuPont Framework for Analyzing Financial Statements

Using the statement of comprehensive income and balance sheet for Kau and Sons Co., compute the three components of return on equity—profitability, efficiency, and leverage—based on the DuPont framework, for the year 2018. Given that total assets on December 31, 2017 were $858,400 and the total equity on December 31, 2017 was $730,400.

Kau and Sons Co.
Statement of Comprehensive Income
For the Year Ended December 31, 2018

Revenues		$640,000
Expenses:		
Supplies expense	$248,000	
Salaries expense	66,400	
Utilities expense	14,200	
Rent expense	58,000	
Other expenses	15,400	402,000
Net income		$238,000

Kau and Sons Co.
Balance Sheet
December 31, 2018

Assets		Liabilities and Equity	
Cash	$104,200	Accounts payable	$ 59,600
Accounts receivable	69,800	Notes payable	112,400
Supplies	93,400	Capital stock	160,000
Land	140,000	Retained earnings	609,600
Buildings	534,200		
Total assets	$941,600	Total liabilities and equity	$941,600

E 14-21
LO 4

DuPont Framework

DuPont framework data for four industries are presented below.

	Assets-to-Equity Ratio	Asset Turnover	Return on Sales
Retail jewelry stores	1.578	1.274	0.060
Retail grocery stores	1.832	4.630	0.0168
Electric service companies	2.592	0.415	0.0828
Legal services firms	1.708	2.945	0.0996

For the four industries, compute:

1. Return on assets
2. Return on equity

E 14-22
LO 2
LO 3
LO 4

Comprehensive Comparison

Match each of the following terms with the phrase that best describes it.

(a) Accounts receivable turnover
(b) Earnings per share
(c) DuPont framework
(d) Current ratio
(e) Cash flow-to-net Income
(f) Times interest earned ratio

1. ________ Reflects the extent to which accrual assumptions and adjustments have been included in the computing net income.
2. ________ The net income earned on each common share.
3. ________ A measurement which can indicate how fast a company collects its receivable.
4. ________ A measure of the liquidity of a business.
5. ________ A measure of a borrower's ability to make required interest payments.
6. ________ The way to compute return of equity and it can be broken into three parts: profitability, efficiency, and leverage to make more in-depth analysis.

E 14-23
LO 5

Pitfalls of Financial Analysis

Which situation below might indicate low quality of financial analysis?

a. The same accounting principles are used each year.
b. Revenue is recognized when certain criteria are met.
c. Depreciation expense are expensed as accrual.
d. Comparing companies in different industries.
e. Noticing some information outside financial statements.

PROBLEMS

P 14-1
LO 2

Vertical and Horizontal Analyses of Statement of Comprehensive Income

Operations for Janice Company for 2017 and 2018 are summarized below. Ignore other comprehensive income.

	2018	2017
Net sales	$300,000	$280,000
Cost of goods sold	215,000	150,000
Gross profit on sales	$ 85,000	$130,000
Selling and general expenses	65,000	75,000
Operating income	$ 20,000	$ 55,000
Interest expense	25,000	22,500
Income (loss) before income tax	$ (5,000)	$ 32,500
Income tax (refund)	1,500	10,000
Net income (loss)	$ (3,500)	$ 22,500

Required:

1. Prepare a vertical and a horizontal analysis of statements of comprehensive income for 2018 and 2017.
2. What caused Janice's profitability to decline so dramatically in 2018?

P 14-2
LO 2

Vertical and Horizontal Analyses of Balance Sheet

The comparative balance sheets of Haley Company appears below:

Haley Company
Comparative Balance Sheet
December 31

Assets	2018	2017
Plant assets	$1,640	$1,500
Current assets	1,360	1,300
Total assets	$3,000	$2,800
Equity and liabilities		
Capital stock	$ 350	$ 280
Retained earnings	1,260	1,240
Non-current liabilities	240	160
Current liabilities	1,150	1,120
Total equity and liabilities	$3,000	$2,800

Required:

1. Using horizontal analysis, show the percentage change for each balance sheet item using 2017 as a base year.
2. Using vertical analysis, prepare a common size balance sheet.

P 14-3
LO 2

Vertical and Horizontal Financial Statement Analyses

Below are financial statement data for Wong Company for the years 2018 and 2017.

Wong Company
Financial Statements
For 2018 and 2017

	2018	2017
Cash	$ 28	$ 20
Receivables	70	54
Inventory	460	306
Property, plant, and equipment	442	380
Total assets	$1,000	$ 760
Accounts payable	$ 212	$ 148
Long-term debt	434	434
Total liabilities	$ 646	$ 582
Paid-in capital	$ 226	$ 100
Retained earnings	128	78
Total liabilities and equity	$1,000	$ 760
Net sales	$2,000	$1,400
Cost of goods sold	(1,400)	(1,000)
Gross profit	$ 600	$ 400
Operating expenses	(480)	(320)
Operating profit	$ 120	$ 80
Interest expense	(44)	(44)
Income before taxes	$ 76	$ 36
Income tax expense	(26)	(12)
Net income	$ 50	$ 24

Required:

1. Prepare common-size financial statements for Wong for 2017 and 2018.
2. Did Wong do better or worse in 2018 compared with 2017? Explain your answer.

P 14-4
LO 2

Preparing Vertical Analysis and Comment on Profitability

Comparative statement data for Lion Company and Billy Company, two competitors, appear below. All financial statement data are as of December 31, 2018, and December 31, 2017.

	Lion Company		Billy Company	
	2018	**2017**	**2018**	**2017**
Net sales	£1,549,035		£339,038	
Cost of goods sold	1,053,345		237,325	
Operating expenses	263,336		77,979	
Interest expense	7,745		2,034	
Income tax expense	61,960		8,476	
Plant assets (net)	596,920	£575,610	142,842	£128,927
Current assets	401,584	388,020	86,450	82,581
Share capital—ordinary, £5 par	578,765	578,765	137,435	137,435
Retained earnings	252,224	225,358	55,528	47,430
Non-current liabilities	102,500	84,000	16,711	11,989
Current liabilities	65,015	75,507	19,618	14,654

Required:

1. Prepare a vertical analysis of the 2018 statement of comprehensive income data for Lion Company and Billy Company in columnar form.
2. Comment on the relative profitability of the companies by computing the return on assets and the return on ordinary shareholders' equity for both companies.

P 14-5
LO 3

Computing and Using Common Ratios

The following information is for the year 2018 for Miller Company and Grand Company, which are in the same industry:

	Miller	Grand
Current assets (ending)	$40,000	$150,000
Long-term assets (ending)	$80,000	$280,000
Current liabilities (ending)	$16,000	$120,000
Long-term liabilities (ending)	$40,000	$260,000
Current assets (beginning)	$50,000	$170,000
Long-term assets (beginning)	$75,000	$320,000
Current liabilities (beginning)	$20,000	$180,000
Long-term liabilities (beginning)	$40,000	$300,000
Net sales	$400,000	$1,700,000
Net income	$8,000	$20,000
Market price per share	$15	$50
Number of shares outstanding (ending)	12,000 shares	6,000 shares
Number of shares outstanding (weighted-average)	15,000 shares	5,500 shares

Required:

Compute the following:

1. Current ratio
2. Debt ratio
3. Return on sales
4. Asset turnover
5. Return on equity

6. Price-earnings ratio
7. Earnings per share (EPS)

P 14-6
LO 3

Working Backwards Using Common Ratios

Suppose that Benjamin Company's assets, liabilities, and equity stayed the same during 2018. The following information for Benjamin Company for 2018 has been assembled:

Price-earnings ratio	39.0
Total equity	$300,000
Debt ratio	80%
Net income	$82,000
Asset turnover	0.75
Current liabilities	270,000
Long-term assets	$560,000

Required:

Compute the following:

1. Return on equity
2. Total assets
3. Net sales
4. Return on sales
5. Current ratio
6. Total market value of shares

P 14-7
LO 3

Ratio Analysis

The following financial data are taken from the records of Ocean Company.

Ocean Company
Comparative Balance Sheets
December 31

	2018	2017
Assets:		
Cash	$ 76,000	$ 46,000
Accounts receivable	22,000	30,000
Inventory	440,000	390,000
Property, plant, and equipment	140,000	140,000
Total assets	$678,000	$606,000
Liabilities and equity:		
Current liabilities	$104,000	$ 72,000
Non-current liabilities	350,000	340,000
Equity	224,000	194,000
Total liabilities and equity	$678,000	$606,000

Ocean Company
Comparative Statements of Comprehensive Income
For the Years Ended December 31

	2018	2017
Nets sales	$926,000	$690,000
Cost of goods sold	480,000	364,000
Gross margin on sales	$446,000	$326,000
Operating expenses	266,000	242,000
Interest expense	30,000	20,000
Income tax expense	60,000	24,000
Net income	$ 90,000	$ 40,000

Required:

Compute the following ratios for 2018:

1. Current ratio
2. Debt ratio
3. Asset turnover
4. Return on sales
5. Return on equity

P 14-8
LO 3

Ratio Analysis

The following data are taken from the records of John Spencer Corporation. There was no "other comprehensive income." Assume John Spencer Corporation's assets on December 31, 2017, were $350,000 and the equity on December 31, 2017, was $200,000.

John Spencer Corporation
Comparative Balance Sheets
December 31

	2019	**2018**
Assets:		
Cash	$ 8,000	$ 12,000
Accounts receivable	32,000	28,000
Inventory	80,000	40,000
Property, plant, and equipment	200,000	200,000
Other assets	32,000	40,000
Total assets	$352,000	$320,000
Liabilities and equity:		
Current liabilities	$ 88,000	$100,000
Long-term liabilities	48,000	20,000
Paid-in capital	120,000	120,000
Retained earnings	96,000	80,000
Total liabilities and equity	$352,000	$320,000

John Spencer Corporation
Comparative Statements of Comprehensive Income
For the Years Ended December 31

	2019	**2018**
Sales	$1,060,000	$896,000
Cost of goods sold	744,000	676,000
Gross margin on sales	$ 316,000	$220,000
Operating expense	204,000	136,000
Operating income	$ 112,000	$ 84,000
Interest expense	8,000	4,000
Income before taxes	$ 104,000	$ 80,000
Income taxes	26,000	24,000
Net income	$ 78,000	$ 56,000

Required:

1. Compute the following ratios for 2018 and 2019:
   a. Current ratio
   b. Debt ratio
   c. Asset turnover
   d. Return on sales
   e. Return on equity
2. Have the firm's performance and financial position improved from 2018 and 2019? Explain.

P 14-9
LO 3

Analysis of Accounts Receivable Management

The following accounts receivable information is for Roger Company:

	2018	2017	2016
Accounts receivable	$49,500	$25,000	$35,000
Sales revenue	95,000	87,500	82,500

Required:

Is there any cause for alarm in the accounts receivable data for 2018? Explain.

P 14-10
LO 3

Calculating and Interpreting Inventory Ratios

Captain Geech Boating Company sells fishing boats to fishermen. Its beginning and ending inventories for 2018 are $924 million and $1,306 million, respectively. It had cost of goods sold of $3,156 million for the year ended December 31, 2018. Merchant Marine Company also sells fishing boats. Its beginning and ending inventories for the year 2018 are $240 million and $180 million, respectively. It had cost of goods sold of $2,200 million for the year ended December 31, 2018.

Required:

1. Calculate the inventory turnover and number of days' sales in inventory for the two companies.
2. **Interpretive Question:** Are the results of these ratios what you expected? Which company is managing its inventory more efficiently?

P 14-11
LO 3

Fixed Asset Turnover Ratio

Waston Company reported the following asset values in 2017 and 2018:

	2018	2017
Cash	$ 20,000	$ 15,000
Accounts receivable	250,000	200,000
Inventory	350,000	250,000
Land	150,000	100,000
Buildings	400,000	300,000
Equipment	200,000	150,000

In addition, Waston had net sales of $2,000,000 in 2018. Cost of goods sold for the year was $1,250,000.

As of the end of 2017, the fair value of Waston's total assets was $1,250,000. Of the excess of fair value over carrying amount, $250,000 resulted because the fair value of Waston's inventory was greater than its recorded carrying amount. As of the end of 2018, the fair value of Waston's total assets was $1,750,000. As of December 31, 2018, the fair value of Waston's inventory was $50,000 greater than the inventory's recorded book value.

Required:

1. Compute Waston's fixed asset turnover ratio for 2018.
2. Using the fair value of fixed assets instead of the carrying amount of fixed assets, recompute Waston's fixed asset turnover ratio for 2018. State any assumptions that you make.
3. **Interpretive Question:** Waston's primary competitor is Handy Corner. Handy Corner's fixed asset turnover ratio for 2018, based on publicly available information, is 2.8 times. Is Waston's more or less efficient at using its fixed assets than Handy Corner? Explain your answer.

P 14-12
LO 3

Computation of Debt-Related Financial Ratios

The following information comes from the financial statements of Walker Company:

Long-term debt	$860,000
Total liabilities	980,000
Total equity	720,000
Current assets	280,000
Earnings before income taxes	56,000
Interest expense	100,000

Required:

Compute the following ratio values. State any assumptions that you make.

1. Debt ratio
2. Debt-to-equity ratio
3. Times interest earned ratio
4. **Interpretive Question:** You are a bank manager considering making a new $70,000 loan to Walker that would replace part of the existing long-term debt. You expect Walker to repay your loan in two years. Which of the ratios computed in parts (1) through (3) would be most useful to you in evaluating whether to make the loan to Walker?

P 14-13
LO 3

Computing Amounts from Financial Ratios

Rick Corporation experienced a fire on December 31, 2018, in which its financial records were partially destroyed. It has been able to salvage some of the records and has ascertained the following balances.

	December 31, 2018	December 31, 2017
Inventory	€100,000	€ 90,000
Accounts receivable (net)	36,500	63,000
Cash	15,000	5,000
Share capital—ordinary, €100 par	200,000	200,000
Retained earnings	67,000	61,000
Accounts payable	25,000	45,000
Notes payable	15,000	30,000

Additional information:

1. The inventory turnover is 3.6 times.
2. The return on equity is 20%.
3. The accounts receivable turnover is 8.6 times.
4. The return on assets is 25%.
5. Total assets at December 31, 2017, were €325,000.

Required:

Compute the following for Rick Corporation.

1. Cost of goods sold for 2018.
2. Net sales (credit) for 2018.
3. Net income for 2018.
4. Total assets at December 31, 2018.

P 14-14
LO 3

Cash Flow Analysis

Below are data extracted from the financial statements for Monica Company.

Monica Company
Selected Financial Statement Data
For the Years Ended December 31, 2018 and 2017
(in millions of dollars)

	2018	2017
Total assets	$224,000	$206,000
Total equity	48,000	44,000
Net sales	192,000	156,000
Net income	16,200	10,800
Cash from operations	20,600	29,600
Cash paid for capital expenditures	15,000	12,800
Cash paid for acquisitions	6,800	2,200
Cash paid for interest	4,200	2,400
Cash paid for income taxes	6,800	6,400

Required:

1. Given that on December 31, 2016, total assets and equity were $214,000 and $56,000 respectively, compute the following for 2017 and 2018:
   a. Return on sales
   b. Return on equity
   c. Cash flow-to-net income ratio
   d. Cash flow adequacy ratio
2. In which year did Monica Company perform better: 2017 or 2018? Explain your answer.

P 14-15
LO 3

Computing Missing Information Using Given Financial Ratio

Presented below is an incomplete income statement and incomplete comparative balance sheet.

Bunny Inc.
Statement of Comprehensive Income
For the Year Ended December 31, 2018

Net sales	€21,000,000
Cost of goods sold	?
Gross profit	?
Operating expenses	3,000,000
Income from operations	?
Interest expense	?
Income before income taxes	?
Income tax expense	900,000
Net income	€ ?

Bunny Inc.
Balance Sheet
December 31

Assets	**2018**	**2017**
Plant assets (net)	€6,240,000	€ 8,710,000
Current assets		
Inventory	?	3,440,000
Accounts receivable (net)	?	2,100,000
Cash	960,000	750,000
Total current assets	?	6,290,000
Total assets	€ ?	€15,000,000
Equity and Liabilities		
Share capital—ordinary, €1 par	€6,000,000	€ 6,000,000
Retained earnings	800,000	750,000
Total equity	6,800,000	6,750,000
Long-term notes payable	?	6,600,000
Current liabilities	?	1,650,000
Total liabilities	?	8,250,000
Total equity and liabilities	€ ?	€15,000,000

Additional information:

1. The accounts receivable turnover for 2018 is 7.5 times.
2. All sales are on account.
3. The profit margin for 2018 is 15%.
4. Return on assets is 20% for 2018.
5. The current ratio on December 31, 2018, is 3.
6. The inventory turnover for 2018 is 3 times.

Required:

Compute the missing information given the ratios above. Show computations. (Note: Start with one ratio and derive as much information as possible from it before trying another ratio. List all missing amounts under the ratio used to find the information.)

P 14-16
LO 4

DuPont Analysis
Financial information (in thousands of dollars) relating to three different companies follows.

	Company A	Company B	Company C
Net sales	$ 30,000	$14,000	$10,500
Net income	4,800	925	180
Total assets (average)	77,700	10,750	1,600
Total equity (average)	30,500	5,650	845

Required:

1. Compute the following ratios:
   a. Return on sales
   b. Asset turnover
   c. Assets-to-equity ratio
   d. Return on equity
2. **Interpretive Question:** Assume the three companies are (a) a large department store, (b) a large supermarket, and (c) a large electric utility. Based on the above information, identify each company. Explain your answer.

P 14-17
LO 4

DuPont Analysis
Refer to the financial statement information in P 14-3 for Wong Company.

Required:

For the year 2018, compute the following ratios:
1. Return on sales
2. Asset turnover
3. Assets-to-equity ratio
4. Return on equity

ANALYTICAL ASSIGNMENTS

AA 14-1
Discussion

Evaluating Alternative Investments
Judy Snow is considering investing $20,000 and wishes to know which of the two companies offers the better alternative.

Hoffman Company earned net income of $126,000 last year on average total assets of $560,000 and average equity of $420,000. The company's shares are selling for $100 per share; 12,600 shares of common stock are outstanding.

McMahon Company earned $48,750 last year on average total assets of $250,000 and average equity of $200,000. The company's common shares are selling for $78 per share; 5,000 shares are outstanding.

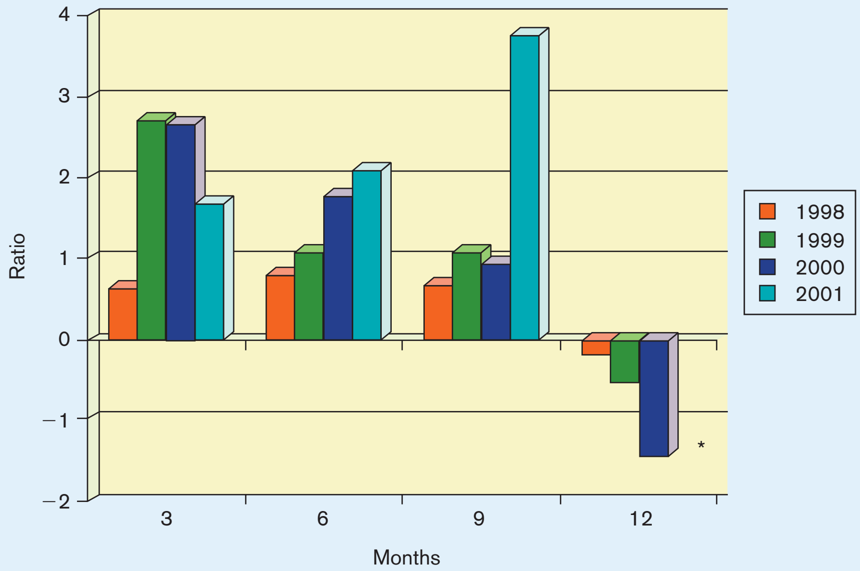
Which stock should Judy buy?

AA 14-2
Judgment Call

You Decide: **Could we see Enron coming?**
Sherron Watkins, the whistle-blower at Enron, made the following statement at a conference that one of the authors attended: "If anyone would have been watching the cash flows of Enron, they could have figured out that there were problems." While traditional ratios don't reveal the problems, the following ratio provides some interesting results when looked at on a quarterly basis:

$$\frac{\text{Net income from operations} - \text{Cash flows from operations}}{\text{Net income from operations}}$$

During the period from 1998 to 2001, this ratio revealed the following:



*Note: The Enron fraud was discovered in the 4th quarter of 2001. As a result, comparable 12-month numbers are not available.

Does this ratio look normal or as expected for a nonfraud-committing company? What would you expect this ratio to look like? Why do the yearly results look so different than the quarterly results?

AA 14-3

Ethics

Does the Bonus Plan Reward the Right Thing?

Hemingway Booksellers is an Internet book company. Customers choose their purchases from an online catalog and make their orders online. Hemingway then assembles the books from its warehouse inventory, packs the order, and ships it to the customer within three working days. The rapid turnaround time on orders requires Hemingway to have a large warehouse staff; wage expense averages almost 20% of sales.

Each member of Hemingway's top management team receives an annual bonus equal to 1% of his or her salary for every 0.1% that Hemingway's return on sales exceeds 5.0%. For example, if return on sales is 5.3%, each top manager would receive a bonus of 3% of salary. Historically, return on sales for Hemingway has ranged between 4.5% and 5.5%.

Hemingway's management has come up with a plan to dramatically increase return on sales, perhaps to as high as 6.5% to 7.0%. The plan is to acquire a sophisticated, computerized packing machine that can receive customer order information, mechanically assemble the books for each order, box the order, print an address label, and route the box to the correct loading dock for pickup by the delivery service. Acquisition of this machine will allow Hemingway to lay off 100 warehouse employees, resulting in a significant savings in wage expense. Top management intends to acquire the machine by using new investment capital from stockholders and thus avoid an increase in interest expense. Because the depreciation expense on the new machine will be much less than the savings in reduced wage expense, return on sales will increase.

All the top managers of Hemingway are excited about the new plan because it could increase their bonuses to as much as 20% of salary. As assistant to the chief financial officer of Hemingway, you have been asked to prepare a briefing for the board of directors explaining exactly how this new packing machine will increase return on sales. As part of your preparation, you decide to examine the impact of the machine acquisition on the other two components of the DuPont framework—efficiency and leverage. You find that even with the projected increase in return on sales, the decrease in asset turnover and in the assets-to-equity ratio will cause total return on equity to decline from its current level of 18% to around 14%.

Your presentation is scheduled for the next board of directors meeting in two weeks. What should you do?