CHAPTER 13

Financial Analysis: The Big Picture

Learning Objectives

1. Understand the concept of sustainable income.
2. Indicate how irregular items are presented.
3. Explain the concept of comprehensive income.
4. Describe and apply horizontal analysis.
5. Describe and apply vertical analysis.
6. Identify and compute ratios used in analyzing a company's liquidity, solvency, and profitability.
7. Understand the concept of quality of earnings.

Summary of Questions by Learning Objectives and Bloom's Taxonomy

Item	LO	BT	Item	LO	BT	Item	LO	BT	Item	LO	BT	Item	LO	BT
Questions														
1.	1	C	6.	6	C	11.	6	C	16.	6	C	20.	6	C
2.	2	C	7.	4, 5	C	12.	6	K	17.	6	C	21.	6	AP
3.	1	C	8.	4, 5	C	13.	6	C	18.	6	C	22.	7	C
4.	2	C	9.	4, 5	AP	14.	6	C	19.	6	C	23.	7	AN
5.	3	AP	10.	6	K	15.	6	C						
Brief Exercises														
1.	2	AP	4.	4	AP	7.	4	AP	10.	6	AP	13.	6	AN
2.	2	AP	5.	5	AP	8.	5	AP	11.	6	AN	14.	6	AN
3.	2	C	6.	4	AP	9.	4	AP	12.	6	AN	15.	6	AN
Do It! Review Exercises														
1.	2	AP	2.	4	AP	3.	6	C	4.	2–7	K			
Exercises														
1.	2	AP	3.	4	AP	6.	4, 5	AP	9.	6	AP	12.	6	AP
2.	1, 2, 6	C	4.	5	AP	7.	6	AP	10.	6	AP	13.	6	AP
			5.	4, 5	AP	8.	6	AP	11.	6	AP			
Problems: Set A														
1.	5, 6	AN	2.	6	AP	3.	6	AN	4.	6	AN	5.	6	AN
Problems: Set B														
1.	5, 6	AN	2.	6	AP	3.	6	AN	4.	6	AN	5.	6	AN

*Continuing Cookie Solutions for this chapter are available online.

ASSIGNMENT CHARACTERISTICS TABLE

Problem Number	Description	Difficulty Level	Time Allotted (min.)
1A	Prepare vertical analysis and comment on profitability.	Simple	20–30
2A	Compute ratios from balance sheet and income statements.	Simple	20–30
3A	Perform ratio analysis, and discuss change in financial position and operating results.	Simple	20–30
4A	Compute ratios; comment on overall liquidity and profitability.	Moderate	30–40
5A	Compute selected ratios, and compare liquidity, profitability, and solvency for two companies.	Moderate	50–60
1B	Prepare vertical analysis and comment on profitability.	Simple	20–30
2B	Compute ratios from balance sheet and income statements.	Simple	20–30
3B	Perform ratio analysis, and discuss change in financial position and operating results.	Simple	20–30
4B	Compute ratios; comment on overall liquidity and profitability.	Moderate	30–40
5B	Compute selected ratios, and compare liquidity, profitability, and solvency for two companies.	Moderate	50–60

ANSWERS TO QUESTIONS

1. Sustainable income is defined as the most likely level of income to be obtained in the future. It is the amount of regular income that a company can expect to earn from its normal operations. In order to distinguish a company's net income from its sustainable income, irregular items, such as an extraordinary gain or discontinued operations, are reported separately on the income statement.

2. Items (a) and (f) are extraordinary items; item (g) is debatable.

3. This would not be considered a favorable trend for Garvey Inc. The relevant earnings per share figures are the $3.26 in 2013 and the $2.99 in 2014. These figures indicate that, unless there was a sale of common stock, the earnings from the continuing operations of the company decreased during 2014. This should give the company's management some concern because they will not always be able to count on revenue or gains from irregular items.

4. Companies report a change from FIFO to average cost pricing for inventory retroactively. That is, they report both the current period and any previous periods reported on the face of the statement using the new principle. As a result, the same principle applies in all periods. This treatment improves the ability to compare results across years.

5. Tootsie Roll reported "Other comprehensive earnings" of ($8,740,000) in 2011. "Comprehensive earnings" was less than "Net earnings" by 19.9% [($35,198 – $43,938) ÷ $43,938]

6. (a) Jennifer 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.

7. (a) Comparison of financial information can be made on an intracompany basis, an intercompany basis, and an industry average basis.

1. An **intracompany basis** compares the same item with prior periods, or with other financial items in the same period.
2. An **intercompany basis** compares the same item with other companies' published reports.
3. The **industry average** compares the item with the industry average as compiled by Dun & Bradstreet or by trade associations.

(b) The **intracompany basis** of comparison is useful in detecting changes in financial relationships and significant trends within a company.
The **intercompany basis** of comparison provides insight into a company's competitive position.
The **industry average basis** provides information about a company's relative position within the industry.

8. **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,** also called common-size analysis, expresses each item within a financial statement as a percent of a relevant base amount.

9. (a) $300,000 X 1.245 = $373,500, 2014 net income.
(b) $300,000 ÷ .06 = $5,000,000, 2013 revenue.

10. (a) Liquidity ratios: Working capital, current ratio, current cash debt coverage, inventory turnover, days in inventory, accounts receivable turnover, and average collection period.
(b) Solvency ratios: Debt to assets ratio, cash debt coverage, times interest earned, and free cash flow.

11. Andrea 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 company are necessary to determine overall financial well-being.

12. (a) Liquidity ratios measure the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash.
(b) Solvency ratios measure the company's ability to survive over a long period of time.
(c) Profitability ratios measure the income or operating success of a company for a given period of time.

13. Working capital and the current ratio both relate current assets to current liabilities. Working capital produces a dollar amount that indicates the difference between current assets and current liabilities. The current ratio produces a ratio which indicates the proportional relationship between current assets and current liabilities.

14. Quick Mart does not necessarily have a problem. The accounts receivable turnover 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.

15. (a) Asset turnover.
(b) Inventory turnover and days in inventory.
(c) Return on common stockholders' equity.
(d) Times interest earned.

16. The price earnings (P-E) ratio is a reflection of investors' assessments of a company's future earnings. The P-E ratio takes into account such factors as relative risk, stability of earnings, trends in earnings, and the market's perception of the company's growth potential. 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 thus investors are willing to pay more for the stock.

17. The payout ratio is cash dividends declared on common stock divided by net income. In a growth company, the payout ratio is often low because the company is reinvesting earnings in the business.

18. (a) The increase in the 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) Earnings per share is a deceptive ratio. The decrease might be bad news to the company because it could mean a decrease in net income. Or the decrease might be good news to the company because of an increase in stockholders' investment.

(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.

(f) The increase in the debt to 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 is bad news because it means that the company's ability to meet interest payments as they come due has weakened.

19. Return on assets (7.6%) $= \dfrac{\text{Net Income}}{\text{Average Total Assets}}$

Return on common stockholders' equity (12.8%) $= \dfrac{\text{Net Income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$

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 rate of return.

20. (a) Times interest earned, which is an indication of the company's ability to meet interest charges, 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 current cash debt coverage, which indicate a company's liquidity and short-term debt-paying ability.

(c) The earnings per share of common stock and the return on common stockholders' equity, both of which indicate the earning power of the investment.

21. $\dfrac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shares outstanding}}$ = Earnings per share.

$$\frac{\$200,000 - \$20,000}{40,000} = \$4.50$$

EPS of $4.50 is high relative to what? Is it high relative to last year's EPS? The president may be comparing the EPS of $4.50 to the market price of the company's stock, which is inappropriate.

22. (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.

23. (a) During a period of inflation, net income will be less under the LIFO inventory costing method than it will be using the FIFO method because LIFO results in the larger cost of goods sold amount.

(b) Inflation does not affect the amount of depreciation taken (except through its effect on salvage) since the depreciable amount is based on the acquisition cost. A six-year life produces greater depreciation for the first six years (thus, less net income) and less depreciation in years 7, 8, 9 (thus, more net income in those years) than a nine-year life.

(c) Inflation does not affect the amount of depreciation taken. Use of the straight-line method results in less depreciation in the earlier years (thus, more net income) than the declining-balance method but more depreciation in the later years.

SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 13-1

REYES CORPORATION
Partial Income Statement

Discontinued operations: Loss on disposal of Mexico facility, net of $160,000 ($640,000 X 25%) tax savings	**($480,000)**

BRIEF EXERCISE 13-2

FIELDER CORPORATION
Partial Income Statement

Income before income taxes	**$300,000**
Income tax expense ($300,000 X 30%)	**90,000**
Income before extraordinary item	**210,000**
Extraordinary loss from flood, net of $24,000 ($80,000 X 30%) tax savings	**(56,000)**
Net income	**$154,000**

BRIEF EXERCISE 13-3

The change in inventory pricing for Jenner should be reported retroactively. That is, it should report both the current period and previous periods included on the face of the statement using the new principle. As a result, the same principle applies in all periods. The treatment improves the ability to compare results across years.

BRIEF EXERCISE 13-4

Horizontal analysis:

			Increase or (Decrease)	
	Dec. 31, 2014	Dec. 31, 2013	Amount	Percentage*
Accounts receivable	$ 460,000	$ 400,000	$ 60,000	15%
Inventory	$ 780,000	$ 650,000	$130,000	20%
Total assets	$3,164,000	$2,800,000	$364,000	13%

$\frac{*\$60,000}{\$400,000} = .15$ $\frac{\$130,000}{\$650,000} = .20$ $\frac{\$364,000}{\$2,800,000} = .13$

BRIEF EXERCISE 13-5

Vertical analysis:

	Dec. 31, 2014		Dec. 31, 2013	
	Amount	Percentage*	Amount	Percentage**
Accounts receivable	$ 460,000	14.5%	$ 400,000	14.3%
Inventory	$ 780,000	24.7%	$ 650,000	23.2%
Total assets	$3,164,000	100%	$2,800,000	100%

$\frac{*\$460,000}{\$3,164,000} = .145$ $\frac{**\$400,000}{\$2,800,000} = .143$

$\frac{\$780,000}{\$3,164,000} = .247$ $\frac{\$650,000}{\$2,800,000} = .232$

BRIEF EXERCISE 13-6

	2014	2013	2012
Net income	$518,400	$485,000	$500,000

		Increase or (Decrease)	
		Amount	Percentage*
(a)	2012–2013	($15,000)	(3%)
(b)	2013–2014	$33,400	7%

$$*\frac{\$15,000)}{\$500,000} = (.03) \qquad \frac{\$33,400}{\$485,000} = .07$$

BRIEF EXERCISE 13-7

	2014	2013	Increase
Net income	$382,800	X	16%

$$.16 = \frac{\$382,800 - X}{X}$$

$$.16X = \$382,800 - X$$
$$1.16X = \$382,800$$
$$X = \$330,000$$

2013 Net Income = $330,000

BRIEF EXERCISE 13-8

	2014	2013	2012
Sales revenue	100.0	100.0	100.0
Cost of goods sold	60.5	62.9	64.8
Expenses	26.0	26.6	27.5
Net income	13.5	10.5	7.7

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

BRIEF EXERCISE 13-9

Comparing the percentages presented results in the following conclusions: The net income for Roswell increased in 2013 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 2014 as sales decreased, while both cost of goods sold and expenses increased. This resulted in a decrease in net income.

BRIEF EXERCISE 13-10

Current ratio:

	2014	2013
$\frac{\text{Current assets}}{\text{Current liabilities}}$	$\frac{\$80,260}{\$245,805} = .33:1$	$\frac{\$70,874}{\$326,203} = .22:1$

The current ratio increased by 50% indicating that Bob Evans Farms is more liquid in 2014.

BRIEF EXERCISE 13-11

$$\text{Accounts receivable turnover} = \frac{\text{Net credit sales}}{\text{Average net accounts receivable}}$$

	2014	2013
(a)	$\frac{\$4,300,000}{\$545,000^*} = 7.9$ times	$\frac{\$4,000,000}{\$530,000^{**}} = 7.5$ times
	*($540,000 + $550,000) ÷ 2	**($520,000 + $540,000) ÷ 2
(b)	Average collection period	
	$\frac{365}{7.9} = 46.2$ days	$\frac{365}{7.5} = 48.7$ days

Filbert Company can be somewhat pleased with the effectiveness of its credit and collection policies. The company has decreased the average collection period by more than two days and the collection period of approximately 46 days almost equals the 45 days allowed in the credit terms.

BRIEF EXERCISE 13-12

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

2014	2013
$\frac{\$4,780,000^*}{\left(\frac{\$960,000 + \$1,020,000}{2}\right)}$ = 4.8 times	$\frac{\$4,541,000^{**}}{\left(\frac{\$840,000+\$960,000}{2}\right)}$ = 5.0 times

	2014	2013
Beginning inventory	$ 960,000	$ 840,000
Purchases	4,840,000	4,661,000
Goods available for sale	5,800,000	5,501,000
Ending inventory	1,020,000	960,000
Cost of goods sold	$4,780,000*	$4,541,000**

(b) Days in inventory

$\frac{365}{4.8}$ = 76 days $\frac{365}{5.0}$ = 73 days

Management should be concerned with the fact that inventory moved slower in 2014 than it did in 2013. The decrease in inventory turnover could be because of poor pricing decisions or because the company is stuck with obsolete inventory.

BRIEF EXERCISE 13-13

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

$$= \frac{\$24,275.5}{\frac{\$13,073.1+\$13,717.3}{2}}$$

= 1.81 times

Staples generated $1.81 of sales for each dollar it had invested in assets.

BRIEF EXERCISE 13-13 (Continued)

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

$$= \frac{\$738.7}{\$24,275.5}$$

$$= \underline{3.0\%}$$

Each dollar of sales resulted in about 3 cents of net income.

BRIEF EXERCISE 13-14

$$\text{Payout ratio} = \frac{\text{Cash dividends declared on common stock}}{\text{Net income}}$$

$$.18 = \frac{X}{\$72,000}$$

$$X = \$72,000\ (.18) = \$12,960$$

Cash dividends = $12,960

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

$$.20 = \frac{\$72,000}{X}$$

$$.20X = \$72,000$$

$$X = \frac{\$72,000}{.20}$$

$$X = \$360,000$$

Average total assets = $360,000

BRIEF EXERCISE 13-15

(a) Current cash debt coverage $= \dfrac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}}$

$$\frac{\$10.4}{\frac{\$41.1 + \$62.4}{2}} = .20 \text{ times}$$

Topps Company could cover (or pay) approximately 20% of its current liabilities with cash generated by operating activities.

(b) Cash debt coverage $= \dfrac{\text{Net cash provided by operating activities}}{\text{Average total liabilities}}$

$$\frac{\$10.4}{\frac{\$65.2 + \$73.2}{2}} = .15 \text{ times}$$

Topps Company could cover (or pay) about 15% of its total liabilities with cash generated by operating activities.

(c) Free Cash Flow = Cash provided by operating activities – Capital expenditures – Cash dividends

$10.4 – $3.7 – $6.2 = $.5

Topps Company generated enough cash from operating activities to maintain its current productive capacity and pay dividends. The free cash flow that remained could have been used to expand operations, pay additional dividends, or reduce debt.

SOLUTIONS TO DO IT! REVIEW EXERCISES

DO IT! 13-1

SUNFLOWER CORPORATION
Income Statement (partial)

Income before income taxes	$500,000
Income tax expense	200,000
Income before irregular items	300,000
Discontinued operations: Loss from disposal of discontinued music divison, net of $9,600 income tax savings	(14,400)
Extraordinary earthquake loss, net of $72,000 tax savings	(108,000)
Net income	$177,600

DO IT! 13-2

	Increase in 2014		
	Amount	Percent	
Current assets	$ (20,000)	(9.1)%	[($ 200,000 – $ 220,000) ÷ $ 220,000]
Plant assets	260,000	33.3%	[($1,040,000 – $ 780,000) ÷ $ 780,000]
Total assets	$240,000	24%	[($1,240,000 – $1,000,000) ÷ $1,000,000]

DO IT! 13-3

(a) Profitability ratio
(b) Liquidity ratio
(c) Solvency ratio
(d) Solvency ratio
(e) Profitability ratio
(f) Liquidity ratio

DO IT! 13-4

1. **Current ratio: A measure used to evaluate a company's liquidity.**
2. **Pro forma income: Usually excludes items that a company thinks are unusual or nonrecurring.**
3. **Quality of earnings: Indicates the level of full and transparent information provided to users of the financial statements.**
4. **Discontinued operations: The disposal of a significant component of a business.**
5. **Horizontal analysis: Determines increases or decreases in a series of financial statement data.**
6. **Comprehensive income: Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders.**

SOLUTIONS TO EXERCISES

EXERCISE 13-1

UTECH COMPANY
Partial Income Statement
For the Year Ended December 31, 2014

Income before irregular items	$310,000
Discontinued operations: Gain from disposal of division, net of $9,000 income taxes	21,000
Extraordinary item: Fire loss, net of $18,000 tax savings	(42,000)
Net income	$289,000

EXERCISE 13-2

(a) The loss on the sale of electrical equipment was reported as a part of continuing operations. The loss was reported in the fourth quarter of 2013 because the cross-reference to the item appears next to the quarterly results for net income.

(b) The extraordinary items are listed separately so that the reader can evaluate the company's results on the basis of normal operations and also see the impact of irregular items. If only the net income figure was disclosed, the reader would not be able to evaluate what portion of the earnings came from operations and what portion came from irregular items.

(c) The extraordinary gain is the expropriation (takeover) of company property in the Middle East. It was not included in income for the fourth quarter because it is only cross-referenced in the year-to-date totals and not in the quarterly report.

(d) The company had net income of over $68 million during the fourth quarter of 2013 but the year-to-date total shows net income of only $33.25 million. Therefore, Energy Enterprises had an operating loss at the end of the first three quarters of 2013. A reader can thus conclude that at least one of the first three quarters were operated at a loss. However, 2014 is not quite as clear. Since the company earned such a high percentage of its total net income ($102.7 million) in the third quarter ($97 million), it appears likely that one of the first three quarters of 2014 was operating at a loss.

(e) Energy Enterprises had 75,514,706 shares of stock outstanding (Net Income ÷ EPS = $102,700,000 ÷ $1.36) at July 31, 2014. The number of shares of stock outstanding increased from the July 31, 2013 total of 69,270,833 ($33,250,000 ÷ $.48).

(f) The profit margin should be based on the company's net income from its normal and continuing operations. The net income figure should be a more conservative amount and should not include any irregular items. The profit margin for the twelve months ended July 31, 2013 is 0.7%; for the twelve months ended July 31, 2014 it is 1.8%. The 2013 percentage was based on the $33,250,000 net income while the 2014 percentage was based on operating income of $100,800,000 ($102,700,000 – $1,900,000). These two figures are comparable because they are the end result of the company's operations and do not include any irregular items which only affect the year of their occurrence. Some analysts might adjust net income in 2013 for the $26 million loss on sale of electrical equipment. Much depends on whether this type of transaction is recurring or not.

EXERCISE 13-3

SPANGLES INC.
Condensed Balance Sheet
December 31

			Increase or (Decrease)	
	2014	2013	Amount	Percentage
Assets				
Current assets	$106,000	$ 90,000	$16,000	17.8%
Plant assets (net)	400,000	350,000	50,000	14.3%
Total assets	$506,000	$440,000	$66,000	15.0%
Liabilities				
Current liabilities	$ 99,000	$ 65,000	$34,000	52.3%
Long-term liabilities	122,000	90,000	32,000	35.6%
Total liabilities	$221,000	$155,000	$66,000	42.6%
Stockholders' Equity				
Common stock, $1 par	130,000	115,000	15,000	13.0%
Retained earnings	155,000	170,000	(15,000)	(8.8%)
Total stockholders' equity	285,000	285,000	–0–	–0–
Total liabilities and stockholders' equity	$506,000	$440,000	$66,000	15.0%

EXERCISE 13-4

JACOBS CORPORATION
Condensed Income Statement
For the Years Ended December 31

	2014		2013	
	Amount	Percent	Amount	Percent
Sales revenue	$800,000	100.0%	$600,000	100.0%
Cost of goods sold	520,000	65.0%	408,000	68.0%
Gross profit	280,000	35.0%	192,000	32.0%
Selling expenses	120,000	15.0%	72,000	12.0%
Administrative expenses	60,000	7.5%	48,000	8.0%
Total operating expenses	180,000	22.5%	120,000	20.0%
Income before income taxes	100,000	12.5%	72,000	12.0%
Income tax expense	30,000	3.7%	24,000	4.0%
Net income	$ 70,000	8.8%	$ 48,000	8.0%

EXERCISE 13-5

(a)

NIKE, INC.
Condensed Balance Sheet
May 31
($ in millions)

	2014	2013	Increase (Decrease)	Percentage Change from 2013
Assets				
Current assets	$ 9,734	$ 8,839	$895	10.1%
Property, plant, and equipment (net)	1,958	1,891	67	3.5%
Other assets	1,558	1,713	(155)	(9.0)%
Total assets	$13,250	$12,443	$807	6.5%

EXERCISE 13-5 (Continued)

NIKE, INC.
Condensed Balance Sheet (Continued)
December 31

	2014	2013	Increase (Decrease)	Percentage Change from 2013
Liabilities and stockholders' equity				
Current liabilities	$ 3,277	$ 3,322	$ (45)	(1.4%)
Long-term liabilities	1,280	1,296	(16)	(1.2%)
Stockholders' equity	8,693	7,825	868	11.1%
Total liabilities and stockholders' equity	$13,250	$12,443	$807	6.5%

(b)

NIKE, INC.
Condensed Balance Sheet
May 31, 2014

	$ (in millions)	Percent
Assets		
Current assets	$ 9,734	73.5%
Property, plant, and equipment (net)	1,958	14.8%
Other assets	1,558	11.7%
Total assets	$13,250	100.0%
Liabilities and stockholders' equity		
Current liabilities	$ 3,277	24.7%
Long-term liabilities	1,280	9.7%
Stockholders' equity	8,693	65.6%
Total liabilities and stockholders' equity	$13,250	100.0%

EXERCISE 13-6

(a)

EUDALEY CORPORATION
Condensed Income Statement
For the Years Ended December 31

			Increase or (Decrease) During 2014	
	2014	2013	Amount	Percentage
Net sales	$598,000	$500,000	$98,000	19.6%
Cost of goods sold	477,000	420,000	57,000	13.6%
Gross profit	121,000	80,000	41,000	51.3%
Operating expenses	80,000	44,000	36,000	81.8%
Net income	$ 41,000	$ 36,000	$ 5,000	13.9%

(b)

EUDALEY CORPORATION
Condensed Income Statements
For the Years Ended December 31

	2014		2013	
	$	Percent	$	Percent
Net sales	$598,000	100.0%	$500,000	100.0%
Cost of goods sold	477,000	79.8%	420,000	84.0%
Gross profit	121,000	20.2%	80,000	16.0%
Operating expenses	80,000	13.4%	44,000	8.8%
Net income	$ 41,000	6.8%	$ 36,000	7.2%

EXERCISE 13-7

Current ratio = 2.01:1 ($4,054 ÷ $2,014)
Current cash debt coverage = .69 ($1,251 ÷ $1,807.5[a])
Accounts receivable turnover = 4.2 times ($8,258 ÷ $1,988.5[b])
Average collection period = 86.9 days (365 days ÷ 4.2)
Inventory turnover = 5.9 times ($5,328 ÷ $899[c])
Days in inventory = 61.9 days (365 days ÷ 5.9)

[a] ($2,014 + $1,601) ÷ 2
[b] ($2,035 + $1,942) ÷ 2
[c] ($898 + $900) ÷ 2

EXERCISE 13-8

Current ratio as of February 1, 2014 = 3.00:1 ($120,000 ÷ $40,000).

Feb. 3	**3.00**	**No change in total current assets or liabilities.**
7	**2.43**	**($97,000 ÷ $40,000).**
11	**2.43**	**No change in total current assets or liabilities.**
14	**3.04**	**($85,000 ÷ $28,000).**
18	**2.66**	**($85,000 ÷ $32,000).**

EXERCISE 13-9

(a) Current ratio = $\frac{\$145,000}{\$50,000}$ = 2.90:1

(b) Accounts receivable turnover = $\frac{\$350,000}{\$65,000\ (1)}$ = 5.4 times

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

(c) Average collection period = 365 days ÷ 5.4 = 67.6 days

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

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

(e) Days in inventory = 365 days ÷ 3.6 = 101.4 days

(f) Cash debt coverage = $\frac{\$48,000}{\frac{\$160,000 + \$150,000}{2}}$ = .31 times

(g) Current cash debt coverage = $\frac{\$48,000}{\frac{\$60,000 + \$50,000}{2}}$ = .87 times

(h) Free cash flow = $48,000 – $25,000 – $10,000 = $13,000

EXERCISE 13-10

(a) Profit margin

$$\frac{\$75.9}{\$5,121.8} = 1.5\%$$

(b) Asset turnover

$$\frac{\$5,121.8}{\left[\frac{\$2,993.9 + \$3,249.8}{2}\right]} = 1.64 \text{ times}$$

(c) Return on assets

$$\frac{\$75.9}{\left[\frac{\$2,993.9 + \$3,249.8}{2}\right]} = 2.4\%$$

(d) Return on common stockholders' equity

$$\frac{\$75.9}{\left[\frac{\$921.6 + \$1,074.7}{2}\right]} = 7.6\%$$

(e) Gross profit rate

$$\frac{\$5,121.8 - \$3,540.6}{\$5,121.8} = 30.9\%$$

EXERCISE 13-11

(a) Earnings per share

$$\frac{\$72,000 - \$5,000}{\left[\frac{32,000 + 40,000}{2}\right]} = \frac{\$67,000}{36,000} = \$1.86$$

(b) Price-earnings ratio

$$\frac{\$14.00}{\$1.86} = 7.5 \text{ times}$$

(c) Payout ratio

$$\frac{\$21,000 - \$5,000}{\$72,000} = 22.2\%$$

(d) Times interest earned

$$\frac{\$72,000 + \$16,000 + \$24,000}{\$16,000} = \frac{\$112,000}{\$16,000} = 7.0 \text{ times}$$

EXERCISE 13-12

(a) Inventory turnover = 3.8 = $\dfrac{\text{Cost of goods sold}}{\left[\dfrac{\$200,000 + \$180,000}{2}\right]}$

3.8 X $190,000 = Cost of goods sold
Cost of goods sold = $722,000.

(b) Accounts receivable turnover = 11.2 = $\dfrac{\text{Net sales (credit)}}{\left[\dfrac{\$126,000 + \$72,500}{2}\right]}$

11.2 X $99,250 = Net sales (credit) = $1,111,600.

(c) Return on common stockholders' equity = 22% =

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

.22 X $507,250 = Net income = $111,595.

(d) Return on assets = 18% = $\dfrac{\text{Net income}}{\text{Average assets}} = \dfrac{\$111,595 \text{ [see (c) above]}}{\text{Average assets}}$

Average assets = $\dfrac{\$111,595}{.18}$ = $619,972

$$\frac{\text{Total assets (Dec. 31, 2014)} + \$605,000}{2} = \$619,972$$

Total assets (Dec. 31, 2014) = ($619,972 X 2) – $605,000 = $634,944.

EXERCISE 13-13

		2014	2013
(a)	**Current ratio:**		
	$1,390 ÷ $820 =	**1.70:1**	
	$1,310 ÷ $790 =		**1.66:1**
(b)	**Inventory turnover:**		
	$970/[($460 + $390) ÷ 2)] =	**2.28**	
	$890/[($390 + $340) ÷ 2)] =		**2.44**
(c)	**Profit margin:**		
	$252 ÷ $3,800 =	**6.6%**	
	$132 ÷ $3,460 =		**3.8%**
(d)	**Return on assets:**		
	$252/[($2,340 + $2,210) ÷ 2)] =	**11.1%**	
	$132/[($2,210 + $1,900) ÷ 2)] =		**6.4%**
(e)	**Return on common stockholders' equity:**		
	$252/[($1,040 + $1,040) ÷ 2)] =	**24.2%**	
	$132/[($1,040 + $900) ÷ 2)] =		**13.6%**
(f)	**Debt to assets ratio:**		
	($820 + $480) ÷ $2,340 =	**55.6%**	
	($790 + $380) ÷ $2,210 =		**52.9%**
(g)	**Times interest earned:**		
	($252 + $168 + $10) ÷ $10 =	**43 times**	
	($132 + $ 88 + $20) ÷ $20 =		**12 times**

SOLUTIONS TO PROBLEMS

PROBLEM 13-1A

(a)

Condensed Income Statement
For the Year Ended December 31, 2014

	Prince Company		King Company	
	Dollars	Percent	Dollars	Percent
Net sales	$1,849,000	100.0%	$546,000	100.0%
Cost of goods sold	1,063,200	57.5%	289,000	52.9%
Gross profit	785,800	42.5%	257,000	47.1%
Operating expenses	240,000	13.0%	82,000	15.0%
Income from operations	545,800	29.5%	175,000	32.1%
Other expenses and losses				
Interest expense	6,800	.4%	3,600	.7%
Income before income taxes	539,000	29.1%	171,400	31.4%
Income tax expense	62,000	3.3%	28,000	5.1%
Net income	$ 477,000	25.8%	$143,400	26.3%

(b) King Company appears to be more profitable. It has higher relative gross profit, income from operations, income before taxes, and net income. Also, Silver's return on assets of 57.3% $\left(\frac{\$477,000}{\$832,593}\right)^{a}$ is lower than King's return on assets of 67% $\left(\frac{\$143,400}{\$214,172}\right)^{b}$, and Prince's return on common stockholders' equity of 72.3% $\left(\frac{\$477,000}{\$659,528}\right)^{c}$ is lower than King's return on common stockholders' equity of 93.1% $\left(\frac{\$143,400}{\$154,047}\right)^{d}$.

[a] **$477,000 is Prince's 2014 net income. $832,593 is Prince's 2014 average assets:**

	2014		2013		
Current assets	$325,975		$312,410		
Plant assets	526,800		500,000		
Total assets	$852,775	+	$812,410	=	$1,665,185 / 2

[b] **$143,400 is King's 2014 net income. $214,172 is King's 2014 average assets:**

	2014		2013		
Current assets	$ 83,336		$ 79,467		
Plant assets	139,728		125,812		
Total assets	$223,064	+	$205,279	=	$428,343 / 2

[c] **$477,000 is Prince's 2014 net income. $659,528 is Prince's 2014 average stockholders' equity:**

	2014		2013		
Common stock	$500,000		$500,000		
Retained earnings	172,460		146,595		
Stockholders' equity	$672,460	+	$646,595	=	$1,319,055 / 2

[d] **$143,400 is King's 2014 net income. $154,047 is King's 2014 average stockholders' equity:**

	2014		2013		
Common stock	$120,000		$120,000		
Retained earnings	38,096		29,998		
Stockholders' equity	$158,096	+	$149,998	=	$308,094 / 2

PROBLEM 13-2A

(a) Earnings per share = $\frac{\$218,000}{59,000\ (1)} = \$3.69$

(1) $\left(\frac{60,000^{*} + 58,000^{**}}{2}\right)$ $\quad \frac{^{*}\$300,000}{\$5}$ $\quad \frac{^{**}\$290,000}{\$5}$

(b) Return on common stockholders' equity = $\frac{\$218,000}{\left[\frac{\$465,400 + \$603,400}{2}\right]}$

$= \frac{\$218,000}{\$534,400}$

$= 40.8\%$

(c) Return on assets = $\frac{\$218,000}{\left[\frac{\$852,800 + \$1,026,900}{2}\right]} = \frac{\$218,000}{\$939,850} = 23.2\%$

(d) Current ratio = $\frac{\$377,900}{\$203,500} = 1.86:1$

(e) Accounts receivable turnover = $\frac{\$1,890,540}{\left[\frac{(\$102,800 + \$117,800)}{2}\right]}$

$= \frac{\$1,890,540}{\$110,300} = 17.1 \text{ times}$

(f) Average collection period = 365 days ÷ 17.1 = 21.3 days

(g) Inventory turnover = $\dfrac{\$1,058,540}{\left[\dfrac{\$115,500 + \$126,000}{2}\right]} = \dfrac{\$1,058,540}{\$120,750}$ = 8.8 times

(h) Days in inventory = 365 days ÷ 8.8 = 41.5 days

(i) Times interest earned = $\dfrac{\$310,000 + \$22,000}{\$22,000}$ = 15.1 times

(j) Asset turnover = $\dfrac{\$1,890,540}{\left[\dfrac{\$1,026,900 + \$852,800}{2}\right]}$ = 2.01 times

(k) Debt to assets ratio = $\dfrac{\$423,500}{\$1,026,900}$ = 41%

(l) Current cash debt coverage = $\dfrac{\$220,000}{\left[\dfrac{\$187,400 + \$203,500}{2}\right]}$ = 1.13 times

(m) Cash debt coverage = $\dfrac{\$220,000}{\left[\dfrac{\$387,400 + \$423,500}{2}\right]}$ = .54 times

(n) Free cash flow = $220,000 – $136,000 – $70,000 = $14,000

PROBLEM 13-3A

(a)

	2014	2013
(1) Profit margin.	$\frac{\$95,000}{\$700,000} = 13.6\%$	$\frac{\$70,000}{\$570,000} = 12.3\%$
(2) Gross profit rate.	$\frac{\$275,000}{\$700,000} = 39.3\%$	$\frac{\$220,000}{\$570,000} = 38.6\%$
(3) Asset turnover.	$\frac{\$700,000}{\left[\frac{\$600,000 + \$725,000}{2}\right]} = 1.06 \text{ times}$	$\frac{\$570,000}{\left[\frac{\$533,000 + \$600,000}{2}\right]} = 1.01 \text{ times}$
(4) Earnings per share.	$\frac{\$95,000}{\left[\frac{31,000 + 32,000}{2}\right]} = \$3.02$	$\frac{\$70,000}{\left[\frac{30,000 + 31,000}{2}\right]} = \$2.30$
(5) Price-earnings ratio.	$\frac{\$8.50}{\$3.02} = 2.8 \text{ times}$	$\frac{\$7.50}{\$2.30} = 3.3 \text{ times}$
(6) Payout ratio.	$\frac{\$45,000^{**}}{\$95,000} = 47\%$	$\frac{\$58,000^{*}}{\$70,000} = 83\%$
	****($125,000 + $95,000 – $175,000)**	***($113,000 + $70,000 – $125,000)**
(7) Debt to assets ratio.	$\frac{(\$85,000 + \$145,000)}{\$725,000} = 32\%$	$\frac{(\$80,000 + \$85,000)}{\$600,000} = 28\%$

(b) The underlying profitability of the corporation appears to have improved. For example, profit margin and earnings per share have both increased. The corporation's debt to assets ratio has increased but the improvements in profitability indicate that taking on more debt was a wise move.

PROBLEM 13-4A

(a) LIQUIDITY

	2013	2014	% Change
Current ratio	$\frac{\$383,000}{\$212,000}$ = 1.81:1	$\frac{\$484,000}{\$275,000}$ = 1.76:1	(3%)
Accounts receivable turnover	$\frac{\$790,000}{\$88,000}$ = 9.0 times	$\frac{\$882,000}{\$97,000}$ = 9.1 times	1%
Inventory turnover	$\frac{\$575,000}{\$140,000}$ = 4.1 times	$\frac{\$640,000}{\$197,500}$ = 3.2 times	(22%)

An overall decrease in short-term liquidity has occurred.

PROFITABILITY

Profit margin	$\frac{\$48,000}{\$790,000}$ = 6.1%	$\frac{\$52,000}{\$882,000}$ = 5.9%	(3%)
Asset turnover	$\frac{\$790,000}{\$679,000}$ = 1.16 times	$\frac{\$882,000}{\$786,000}$ = 1.12 times	(3%)
Return on assets	$\frac{\$48,000}{\$679,000}$ = 7.1%	$\frac{\$52,000}{\$786,000}$ = 6.6%	(7%)
Earnings per share	$\frac{\$48,000}{20,000}$ = $2.40	$\frac{\$52,000}{20,000}$ = $2.60	8%

Profitability has decreased slightly.

PROBLEM 13-4A (Continued)

(b)		2014	2015	%Change
1.	Return on common stockholders' equity	$\frac{\$52,000}{\$332,500\text{ (a)}} = 15.6\%$	$\frac{\$54,000}{\$466,000\text{ (b)}} = 11.6\%$	(26%)
2.	Debt to assets ratio	$\frac{\$525,000}{\$874,000} = 60\%$	$\frac{\$355,000}{\$900,000} = 39\%$	(35%)
3.	Price-earnings ratio	$\frac{\$9.00}{\$2.60} = 3.5$ times	$\frac{\$12.00}{\$2.70\text{ (c)}} = 4.4$ times	26%

(a) ($200,000 + $149,000 + $200,000 + $116,000) ÷ 2.
(b) ($380,000* + $203,000** + $200,000 + $149,000) ÷ 2.
(c) $54,000 ÷ 20,000.

*$200,000 + (18,000 X $10/share)
**$149,000 + $54,000

PROBLEM 13-5A

(a)

Ratio	Target		Wal-Mart	
	(All Dollars Are in Millions)			
(1) Current ratio	1.63:1	($18,424 ÷ $11,327)	.87:1	($48,331 ÷ $55,561)
(2) Accounts receivable turnover	8.7	($65,357 ÷ $7,525)	101.4	($408,214 ÷ $4,025)
(3) Average collection period (in days)	42.0	(365 ÷ 8.7)	3.6	(365 ÷ 101.4)
(4) Inventory turnover	6.6	($45,583 ÷ $6,942)	9.0	($304,657 ÷ $33,836)
(5) Days in inventory	55.3	(365 ÷ 6.6)	40.6	(365 ÷ 9.0)
(6) Profit margin	3.8%	($2,488 ÷ $65,357)	3.5%	($14,335 ÷ $408,214)
(7) Asset turnover	1.5	($65,357 ÷ $44,319.5[a])	2.4	($408,214 ÷ $167,067.5[f])
(8) Return on assets	5.6%	($2,488 ÷ $44,319.5[a])	8.6%	($14,335 ÷ $167,067.5[f])
(9) Return on common stockholders' equity	17.1%	($2,488 ÷ $14,529.5[b])	21.0%	($14,335 ÷ $68,369[g])
(10) Debt to assets ratio	66%	($29,186 ÷ $44,533)	58%	($99,650 ÷ $170,706)
(11) Times interest earned	6.5	($4,579[c] ÷ $707)	11.4	($23,539[h] ÷ $2,065)
(12) Current cash debt coverage	.54	($5,881 ÷ $10,919.5[d])	.47	($26,249 ÷ $55,475.5[i])
(13) Cash debt coverage	.20	($5,881 ÷ $29,790[e])	.27	($26,249 ÷ $98,698.5[j])
(14) Free cash flow	$3,656	($5,881 – $1,729 – $496)	$9,848	($26,249 – $12,184 – $4,217)

[a] ($44,533 + $44,106) ÷ 2
[b] ($15,347 + $13,712) ÷ 2
[c] ($2,488 + $1,384 + $707)
[d] ($11,327 + $10,512) ÷ 2
[e] (($11,327 + $17,859) + $30,394) ÷ 2
[f] ($170,706 + $163,429) ÷ 2
[g] ($71,056 + $65,682) ÷ 2
[h] ($14,335 + $7,139 + $2,065)
[i] ($55,561 + $55,390) ÷ 2
[j] (($55,561 + $44,089) + $97,747) ÷ 2

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

Liquidity—Target's current ratio of 1.63:1 is better than Wal-Mart's .87:1. However, Wal-Mart has a better inventory turnover than Target and its accounts receivable turnover is significantly better than Target's.

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

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

PROBLEM 13-1B

(a)

Condensed Income Statement
For the Year Ended December 31, 2014

	Dean Company		Gerald Company	
	Dollars	Percent	Dollars	Percent
Net sales	$350,000	100.0%	$1,200,000	100.0%
Cost of goods sold	175,000	50.0%	648,000	54.0%
Gross profit	175,000	50.0%	552,000	46.0%
Operating expenses	72,000	20.6%	266,000	22.2%
Income from operations	103,000	29.4%	286,000	23.8%
Other expenses and losses				
Interest expense	5,000	1.4%	10,000	.8%
Income before income taxes	98,000	28.0%	276,000	23.0%
Income tax expense	22,000	6.3%	54,000	4.5%
Net income	$ 76,000	21.7%	$ 222,000	18.5%

(b) Dean Company appears to be more profitable. It has higher relative income from operations, income before taxes, and net income. Gerald's return on assets of 14.3% $\left(\frac{\$222,000}{\$1,550,000}\right)^{a}$ is lower than Dean Company's return on assets of 16.9% $\left(\frac{\$76,000}{\$450,000}\right)^{b}$, and Gerald's return on common stockholders' equity of 20.0% $\left(\frac{\$222,000}{\$1,112,500}\right)^{c}$ is lower than Dean's return on common stockholders' equity of 23.0% $\left(\frac{\$76,000}{\$330,000}\right)^{d}$.

PROBLEM 13-1B (Continued)

[a]$222,000 is Gerald's 2014 net income. $1,550,000 is Dean's 2014 average assets: Return on assets = ($222,000 ÷ $1,550,000) = 14.3%

	2014		2013		
Current assets	$ 700,000		$ 650,000		
Plant assets	1,000,000		750,000		
Total assets	$1,700,000	+	$1,400,000	=	$3,100,000 / 2

[b]$76,000 is Dean's 2014 net income. $450,000 is Dean's 2014 average assets: Return on assets = ($76,000 ÷ $450,000) = 16.9%

	2014		2013		
Current assets	$130,000		$100,000		
Plant assets	400,000		270,000		
Total assets	$530,000	+	$370,000	=	$900,000 / 2

[c]$222,000 is Gerald's 2014 net income. $1,112,500 is Gerald's 2014 average stockholders' equity: Return = $222,000 ÷ $1,112,500 = 20.0%

	2014		2013		
Common stock	$ 950,000		$700,000		
Retained earnings	300,000		275,000		
Stockholders' equity	$1,250,000	+	$975,000	=	$2,225,000 / 2

[d]$76,000 is Dean's 2014 net income. $330,000 is Dean's 2014 average stockholders' equity: Return = $76,000 ÷ $330,000 = 23%

	2014		2013		
Common stock	$340,000		$200,000		
Retained earnings	80,000		40,000		
Stockholders' equity	$420,000	+	$240,000	=	$660,000 / 2

PROBLEM 13-2B

(a) Earnings per share = $\frac{\$119,200}{14,000\ (1)} = \$8.51$

(1) [13,000 + 15,000] ÷ 2

(b) Return on common stockholders' equity = $\frac{\$119,200}{\left[\frac{\$376,000 + \$480,300}{2}\right]}$

$= \frac{\$119,200}{\$428,150}$

$= 27.8\%$

(c) Return on assets = $\frac{\$119,200}{\left[\frac{\$652,000 + \$775,800}{2}\right]} = \frac{\$119,200}{\$713,900} = 16.7\%$

(d) Current ratio = $\frac{\$290,500}{\$163,500} = 1.78:1$

(e) Accounts receivable turnover = $\frac{\$780,000}{\frac{(\$83,800 + \$106,200)}{2}} = \frac{\$780,000}{\$95,000} = 8.2$ times

(f) Average collection period = 365 days ÷ 8.2 = 44.5 days

PROBLEM 13-2B (Continued)

(g) Inventory turnover = $\frac{\$440,000}{\left[\frac{\$74,000 + \$116,400}{2}\right]} = \frac{\$440,000}{\$95,200} = 4.6$ times

(h) Days in inventory = 365 days ÷ 4.6 = 79.3 days

(i) Times interest earned = $\frac{\$119,200 + \$9,920 + \$34,000}{\$9,920} = 16.4$ times

(j) Asset turnover = $\frac{\$780,000}{\left[\frac{\$775,800 + \$652,000}{2}\right]} = \frac{\$780,000}{\$713,900} = 1.09$ times

(k) Debt to assets = $\frac{\$295,500}{\$775,800} = 38\%$

(l) Current cash debt coverage = $\frac{\$108,000}{\left[\frac{\$163,500 + \$156,000}{2}\right]} = \frac{\$108,000}{\$159,750} = .68$ times

(m) Cash debt coverage = $\frac{\$108,000}{\left[\frac{\$295,500 + \$276,000}{2}\right]} = \frac{\$108,000}{\$285,750} = .38$ times

(n) Free cash flow = $108,000 – $47,000 – $30,900 = $30,100.

PROBLEM 13-3B

(a)

	2014	2013
(1) Profit margin.	$\frac{\$110,000}{\$760,000} = 14.5\%$	$\frac{\$85,000}{\$700,000} = 12.1\%$
(2) Gross profit rate.	$\frac{\$340,000}{\$760,000} = 45\%$	$\frac{\$294,000}{\$700,000} = 42\%$
(3) Asset turnover.	$\frac{\$760,000}{\left[\frac{\$620,000 + \$813,000}{2}\right]} = 1.06 \text{ times}$	$\frac{\$700,000}{\left[\frac{\$540,000 + \$620,000}{2}\right]} = 1.21 \text{ times}$
(4) Earnings per share.	$\frac{\$110,000}{\left[\frac{34,000 + 40,000}{2}\right]} = \$2.97$	$\frac{\$85,000}{\left[\frac{30,000 + 34,000}{2}\right]} = \$2.66$
(5) Price-earnings ratio.	$\frac{\$2.80}{\$2.97} = 0.94 \text{ times}$	$\frac{\$3.50}{\$2.66} = 1.32 \text{ times}$
(6) Payout ratio.	$\frac{\$55,000^{**}}{\$110,000} = 50\%$	$\frac{\$60,000^{*}}{\$85,000} = 70.6\%$
	****($130,000 + $110,000 – $185,000)**	***($105,000 + $85,000 – $130,000)**
(7) Debt to assets ratio.	$\frac{\$228,000}{\$813,000} = 28\%$	$\frac{\$150,000}{\$620,000} = 24\%$

(b) The underlying profitability of the corporation has improved. For example, the profit margin and gross profit rate have both improved. In addition, the corporation's earnings per share has increased, which suggests that investors will be looking more favorably at the corporation. Also, its payout ratio has decreased, which should have a positive effect on its solvency.

However, the debt to total assets ratio has increased, indicating a heavier reliance on debt. Also, the asset turnover ratio has declined, indicating management has not managed assets well in generating sales. And, finally, the price-earnings ratio has declined, perhaps suggesting that investors are not impressed with the company's future prospects.

PROBLEM 13-4B

(a) LIQUIDITY

	2013	2014	Change
Current ratio	$\frac{\$520,000}{\$165,000}$ = 3.15:1	$\frac{\$670,000}{\$330,000}$ = 2.03:1	(36%)
Accounts receivable turnover	$\frac{\$940,000}{\$78,500}$ = 12.0 times	$\frac{\$1,050,000}{\$88,500}$ = 11.9 times	(1%)
Inventory turnover	$\frac{\$635,000}{\$325,000}$ = 1.95 times	$\frac{\$680,000}{\$365,000}$ = 1.86 times	(5%)

An overall decrease in short-term liquidity exists.

PROFITABILITY

Profit margin	$\frac{\$90,000}{\$940,000}$ = 9.6%	$\frac{\$130,000}{\$1,050,000}$ = 12.4%	29%
Asset turnover	$\frac{\$940,000}{\$1,085,000}$ = .87 times	$\frac{\$1,050,000}{\$1,155,000}$ = .91 times	5%
Return on assets	$\frac{\$90,000}{\$1,085,000}$ = 8.3%	$\frac{\$130,000}{\$1,155,000}$ = 11.3%	36%
Earnings per share	$\frac{\$90,000}{100,000}$ = $.90	$\frac{\$130,000}{100,000}$ = $1.30	44%

Overall profitability has improved.

PROBLEM 13-4B (Continued)

(b)

		2014	2015	% Change
1.	Return on common stockholders' equity	$\frac{\$130,000}{767,500\text{ (a)}} = 16.9\%$	$\frac{\$135,000}{897,500\text{ (b)}} = 15.0\%$	(11%)
2.	Debt to assets	$\frac{\$510,000}{1,315,000} = 39\%$	$\frac{\$390,000}{1,350,000} = 29\%$	(26%)
3.	Price-earnings ratio	$\frac{\$15.00}{1.30} = 11.5$ times	$\frac{\$18.00}{1.35\text{ (c)}} = 13.3$ times	16%

(a) ($500,000 + $305,000 + $500,000 + $230,000) ÷ 2.
(b) ($550,000* + $440,000** + $500,000 + $305,000) ÷ 2.
(c) $135,000 ÷ 100,000.

*$500,000 + (10,000 X $5/share)
**$305,000 + $135,000

PROBLEM 13-5B

(a)

Ratio	Edgewater		Ritter	
	(All Dollars Are in Millions)			
(1) Current	5.32:1	($885.7 ÷ $166.5)	2.83:1	($617.2 ÷ $218.0)
(2) Accounts receivable turnover	4.6	($1,356.0 ÷ $293.2)	7.3	($1,436.5 ÷ $196.1)
(3) Average collection period	79.3	(365 ÷ 4.6)	50.0	(365 ÷ 7.3)
(4) Inventory turnover	3.2	($776.3 ÷ $239.1)	4.0	($771.7 ÷ $194.3)
(5) Days in inventory	114.1	(365 ÷ 3.2)	91.3	(365 ÷ 4.0)
(6) Profit margin	10.6%	($144.4 ÷ $1,356.0)	2.8%	($40.0 ÷ $1,436.5)
(7) Asset turnover	1.2	($1,356.0 ÷ $1,096.9[a])	1.7	($1,436.5 ÷ $848.4[f])
(8) Return on assets	13.2%	($144.4 ÷ $1,096.9[a])	4.7%	($40.0 ÷ $848.4[f])
(9) Return on common stockholders' equity	16.0%	($144.4 ÷ $900.4[b])	7.0%	($40.0 ÷ $569.5[g])
(10) Debt to assets	16.8%	($196.4 ÷ $1,166.5)	31%	($259.1 ÷ $836.3)
(11) Times interest earned	2,081.0	($208.1[c] ÷ $.1)	598.1	($59.8[h] ÷ $.1)
(12) Current cash debt coverage	.70	($124.5 ÷ $177.2[d])	.15	($38.6 ÷ $251.8[i])
(13) Cash debt coverage	.63	($124.5 ÷ $196.5[e])	.14	($38.6 ÷ $278.9[j])
(14) Free cash flow	$69.3	($124.5 – $34.3 – $20.9)	$8.1	($38.6 – $30.5 – $0)

[a] ($1,166.5 + $1,027.3) ÷ 2
[b] ($970.1 + $830.7) ÷ 2
[c] ($144.4 + $63.6 + $.1)
[d] ($166.5 + $187.9) ÷ 2
[e] (($166.5 + $29.9) + $196.6) ÷ 2
[f] ($836.3 + $860.4) ÷ 2
[g] ($577.2 + $561.7) ÷ 2
[h] ($40.0 + $19.7 + $.1)
[i] ($218.0 + $285.6) ÷ 2
[j] (($218.0 + $41.1) + $298.7) ÷ 2

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

Liquidity—Edgewater's current ratio and current cash debt coverage are much better than Ritter's. However, Ritter has better accounts receivable and inventory turnovers.

Solvency—Edgewater's debt to assets ratio, times interest earned and cash debt coverage and free cash flow are better than Ritter's. Both companies appear to be very solvent.

Profitability—With the exception of asset turnover, Edgewater betters Ritter in all of the profitability ratios. Thus, it is more profitable than Ritter.

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BYP 13-1 FINANCIAL REPORTING PROBLEM

(a)

TOOTSIE ROLL INDUSTRIES, INC.
Trend Analysis of Net Sales and Net Earnings
For the Five Years Ended 2011

Base Period 2007—($ in thousands)

	2011	2010	2009	2008	2007
(1) Net sales	$528,369	$517,149	$495,592	$492,051	$492,742
Trend	107%	105%	101%	100%	100%
(2) Net earnings	$ 43,938	$ 53,063	$ 53,157	$ 38,880	$ 52,175
Trend	84%	102%	102%	75%	100%

Net sales changed very little from 2007 to 2009, but increased slightly in 2010 and 2011. The net earnings decreased significantly from 2007 to 2008 and in 2011. The reasons for such large decreases in profitability would require further investigation.

(b) (000's omitted)

1. Debt to Assets Ratio

2011: ($857,856 – $665,935) ÷ $857,856 = 22%
2010: ($857,959 – $667,408) ÷ $857,959 = 22%

2. Times Interest Earned

2011: ($60,912 + $121) ÷ $121 = 504.4 times
2010: ($73,068 + $142) ÷ $142 = 515.6 times

Tootsie Roll's long-term solvency is not in jeopardy. The debt to assets ratio indicates that creditors are providing approximately 22% of Tootsie Roll's total assets. Also, Tootsie Roll easily has the ability to pay interest payments when they come due as indicated by the times interest earned of over 500 times.

BYP 13-1 (Continued)

(c) (000's omitted)

1. Profit Margin

2011: $43,938 ÷ $528,369 = 8.3%
2010: $53,063 ÷ $517,149 = 10.3%

2. Asset Turnover

2011: $528,369 ÷ [($857,856 + $857,959) ÷ 2] = .62 times
2010: $517,149 ÷ [($857,959 + $836,844) ÷ 2] = .61 times

3. Return on Assets

2011: $43,938 ÷ [($857,856 + $857,959) ÷ 2] = 5.1%
2010: $53,063 ÷ [($857,959 + $836,844) ÷ 2] = 6.3%

4. Return on Common Stockholders' Equity

2011: $43,938 ÷ [($665,935 + $667,408) ÷ 2] = 6.6%
2010: $53,063 ÷ [($667,408 + $654,244) ÷ 2] = 8.0%

All of the profitability ratios except asset turnover decreased in 2011. Stockholders are earning an acceptable 6.6% on their investment. Considering that Tootsie Roll is primarily in a high-volume business where the margin above costs is historically low, the profit margins for both 2011 and 2010 are good.

(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 additional relevant information not usually found in the annual report.

BYP 13-2 COMPARATIVE ANALYSIS PROBLEM

(a)

		Hershey	Tootsie Roll
1.	(i) Percentage increase (decrease) in net sales	$\frac{\$6,080,788 - \$5,671,009}{\$5,671,009} = 7.2\%$	$\frac{\$528,369 - \$517,149}{\$517,149} = 2.2\%$
	(ii) Percentage increase (decrease) in net income	$\frac{\$628,962 - \$509,799}{\$509,799} = 23.4\%$	$\frac{\$43,938 - \$53,063}{\$53,063} = (17.2\%)$
2.	(i) Percentage increase (decrease) in total assets	$\frac{\$4,412,199 - \$4,272,732}{\$4,272,732} = 3.3\%$	$\frac{\$857,856 - \$857,959}{\$857,959} = 0.0\%$
	(ii) Percentage increase (decrease) in total stockholders' equity	$\frac{\$872,648 - \$937,601}{\$937,601} = (6.9\%)$	$\frac{\$665,935 - \$667,408}{\$667,408} = (0.2\%)$
3.	Earnings per share	2.85*	.76*

*Given on income statement

(b) Hershey's increases in net sales, net income, and total assets were all significantly larger than Tootsie Roll's. Both Companies had a decrease in total stockholders' equity, but Hershey suffered a much larger decrease than Tootsie Roll.

Hershey's earnings per share are over 3.5 times as large as Tootsie Roll's, indicating that Hershey was much more profitable than Tootsie Roll.

BYP 13-3 RESEARCH CASE

(a) The article explains that unrealized losses on certain types of investment securities, known as available-for-sale securities, do not have to reported in the income statement. Instead, they can be reported as direct reductions of stockholders' equity.

(b) Companies are required to report these losses in net income when the company determines that the loss is permanent. This would occur either because the company has sold the security, or because the company believes that the losses are irreversible, that is, the price of the investment will not recover.

(c) At the time of the article companies in the Standard and Poor's 500 had approximately $80 billion of unrealized losses from these types of securities in the equity section of their balance sheet.

(d) The article emphasizes that these companies actually are following accepted accounting standards.

(e) The implications for investors are that investors need to look for these items in stockholders' equity so that they are not surprised by unexpected losses on investments. As noted by the investment professionals cited in the article, these items are difficult to interpret. Therefore, they complicate efforts to forecast a company's future earnings.

BYP 13-4 RESEARCH CASE

(a) As discussed in Chapter 11, when a company does a stock split, its share price drops accordingly. If Amazon had not engaged in past stock splits its stock price at the time of the article would have been $1,166.

(b) Amazon dramatically increased its capacity to handle customer orders through its spending on fulfillment centers. However, until its sales increase enough to absorb this additional capacity, the company's return on assets will probably suffer. First, the increase in plant assets will increase the company's depreciation expense and reduce net income. Second, increasing plant assets increases the denominator of the return on assets, which reduces the company's return.

(c) At the time of the article, Amazon's P/E ratio was 76. Apple had a P/E ratio of 11.4, Netflix was 38 and the article says that Amazon's was 3 1/2 times that of Wal-Mart, making it approximately 21.7. Amazon's high value suggests that investors were expecting significant growth in Amazon's earnings in future years.

(d) The article notes that Amazon's 2012 operating margin was about half what it had been in the typical previous year. In the past, many of Amazon's customers did not pay sales taxes on their purchases, which effectively gave Amazon a price advantage over traditional "brick and mortar" stores that do collect sales taxes. It stated that, because Amazon's customers might have to start paying sales taxes on their purchases, Amazon might have to reduce its prices in order to continue to compete on price. This would reduce its profitability.

BYP 13-5 INTERPRETING FINANCIAL STATEMENTS

(a)

Liquidity Ratios	Coca-Cola	PepsiCo
(1) Current ratio	1.28:1 ($17,551 ÷ $13,721)	1.44:1 ($12,571 ÷ $8,756)
(2) Accounts receivable turnover	9.1 times ($30,990 ÷ $3,424)	9.3 times ($43,232 ÷ $4,654)
(3) Average collection period	40.1 days (365 ÷ 9.1)	39.2 days (365 ÷ 9.3)
(4) Inventory turnover	4.9 times ($11,088 ÷ $2,271)	7.8 times ($20,099 ÷ $2,570)
(5) Days in inventory	74.5 (365 ÷ 4.9)	46.8 (365 ÷ 7.8)
(6) Current cash debt coverage	.61 ($8,186 ÷ $13,355)	.77 ($6,796 ÷ $8,772)

PepsiCo is more liquid than Coca-Cola. PepsiCo betters Coca-Cola in all of the ratios.

(b)

Solvency Ratios	Coca-Cola	PepsiCo
(1) Debt to assets ratio	$\frac{\$23,872}{\$48,671} = 49\%$	$\frac{\$23,044}{\$39,848} = 58\%$
(2) Times interest earned	$\frac{\$6,824 + \$2,040 + \$355}{\$355}$ = 26.0 times	$\frac{\$5,946 + \$2,100 + \$397}{\$397}$ = 21.3 times
(3) Cash debt coverage	$\frac{\$8,186}{\$21,960} = .37$ times	$\frac{\$6,796}{\$23,466} = .29$ times
(4) Free cash flow	$8,186 – $1,993 – $3,800 = $2,393	$6,796 – $2,128 – $2,732 = $1,936

Coca-Cola is more solvent than PepsiCo.

BYP 13-5 (Continued)

(c)

Profitability Ratios	Coca-Cola	PepsiCo
(1) Profit margin	22.0% ($6,824 ÷ $30,990)	13.8% ($5,946 ÷ $43,232)
(2) Asset turnover	.69 times ($30,990 ÷ $44,595)	1.14 times ($43,232 ÷ $37,921)
(3) Return on assets	15.3% ($6,824 ÷ $44,595)	15.7% ($5,946 ÷ $37,921)
(4) Return on common stockholders' equity	30.1% ($6,824 ÷ $22,636)	40.8% ($5,946 ÷ $14,556)

PepsiCo, Inc. has a lower profit margin than the Coca-Cola Company. However, PepsiCo, Inc. has a higher asset turnover, return on assets, and return on common stockholders' equity.

(a), (b), and (c) Answers will vary depending on the year chosen by the student.

BYP 13-7 DECISION MAKING ACROSS THE ORGANIZATION

(a) Lenders prefer that financial statements are audited because an audit gives independent assurance that the financial statements give a reasonable representation of the company's financial position and results of operations. With this independent assurance they feel more comfortable making a decision.

(b) 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 change in asset turnover cannot alone tell anything about either solvency or going-concern prospects. There is no way to know the amount and the direction of the changes in the two items. 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 50 percent [(.1 – .2) ÷ .2] decrease in cash debt coverage may indicate that the company is having difficulties generating enough cash from operations to meet debt obligations and even operating needs. The increase in net income may not have brought a corresponding increase in cash collections from accounts receivable. Since cash debt coverage was low in 2013 and even lower in 2014, it appears that the company may have a solvency problem.

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. Indirectly, the improved income picture may have a favorable impact on solvency and going-concern potential by enabling the client to borrow currently to meet cash requirements.

The 32 percent [($3.30 – $2.50) ÷ $2.50] increase in earnings per share, which is identical to the percentage increase in net income, is an indication 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.

The collective implications of these data alone are that the client entity is about as solvent and viable as 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.

Although a quick evaluation of a reporting entity can be made using only a few ratios and comparing these with past ratios and industry statistics, the creditors should realize the limitations of such analysis even from the best prepared statements carrying a CPA's unqualified opinion.

A limitation on comparisons with industry statistics or other companies within the industry exists because material differences can be created through the use of alternative (but acceptable) accounting methods. Further, when evaluating changes in ratios or percentages, the evaluation should be directed to the nature of the item being evaluated because very small differences in ratios or percentages can represent significant changes in dollar amounts or trends.

The creditors should evaluate conclusions drawn from ratio analysis in light of the current status of, and expected changes in, such things as general economic conditions, the client's competitive position, the public's demand (for the product itself, increased quality of the product, control of noise and pollution, etc.), and the client's specific plans.

(c) 1. Current cash debt coverage—indicates liquidity.

2. Debt to assets ratio—indicates solvency.

3. Times interest earned—indicates ability to repay interest when due.

Other answers are possible.

BYP 13-8 COMMUNICATION ACTIVITY

To: David Lemay

From: Accounting Student

Re: Financial Statement Analysis

There are two fundamental considerations in financial statement analysis: (1) the bases of comparison and (2) the limitations of financial statement analysis. 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. Intercompany—This basis compares an item or financial relationship of one company with the same item or relationship in one or more competing companies.

c. Industry averages—This basis compares an item or financial relationship of a company with industry averages (or norms).

2. Three factors that affect quality of earnings are:

a. Alternative accounting methods—Variations among companies in the application of generally accepted accounting principles (GAAP) can cause variation in earnings quality across companies.

b. Pro forma income—Many companies now report non-GAAP income measures in addition to GAAP income. There is little guidance regarding these measures, thus the earnings quality of these measures is difficult to determine.

c. Improper recognition—In order to meet earnings targets, some companies record revenues and expenses in the wrong period. This directly reduces earnings quality.

BYP 13-9 ETHICS CASE

(a) The stakeholders in this case are:
Kelli Rice, president of LR Industries.
Laurie Ellis, public relations director.
You, as controller of LR Industries.
Stockholders of LR Industries.
Potential investors in LR Industries.
Any readers of the press release.

(b) The president's press release is deceptive and incomplete and to that extent her actions are unethical.

(c) As controller you should at least inform Laurie, the public relations director, about the biased content of the release. She should be aware that the information she is about to release, while factually accurate, is deceptive and incomplete. Both the controller and the public relations director (if she agrees) have the responsibility to inform the president of the bias of the about-to-be-released information.

BYP 13-10 ALL ABOUT YOU

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 reasons why different people will choose different investment vehicles.

(a) Discontinued Operations

205-20-45-1 The results of operations of a *component of an entity* that either has been disposed of or is classified as held for sale under the requirements of paragraph 360-10-45-9, shall be reported in discontinued operations in accordance with paragraph 205-20-45-3 if both of the following conditions are met:

a. The operations and cash flows of the component have been (or will be) eliminated from the ongoing operations of the entity as a result of the disposal transaction.

b. The entity will not have any significant continuing involvement in the operations of the component after the disposal transaction.

(b) Extraordinary items are events and transactions that are distinguished by their unusual nature and by the infrequency of their occurrence. Thus, both of the following criteria should be met to classify an event or transaction as an extraordinary item:

a. Unusual nature. The underlying event or transaction should possess a high degree of abnormality and be of a type clearly unrelated to, or only incidentally related to, the ordinary and typical activities of the entity, taking into account the environment in which the entity operates.

b. Infrequency of occurrence. The underlying event or transaction should be of a type that would not reasonably be expected to recur in the foreseeable future, taking into account the environment in which the entity operates.

(c) Comprehensive Income

The change in equity (net assets) of a business entity during a period from transactions and other events and circumstances from nonowner sources. It includes all changes in equity during a period except those resulting from investments by owners and distributions to owners.

IFRS CONCEPTS AND APPLICATION

IFRS 13-1

LING COMPANY
Statement of Comprehensive Income
For the Year Ended December 31, 2014

Sales revenue	$1,000,000
Cost of goods sold	700,000
Gross profit	300,000
Operating expenses	200,000
Net income	100,000
Other comprehensive income	
Unrealized gain on non-trading securities	75,000
Comprehensive income	$ 175,000

IFRS 13-2

LING COMPANY
Income Statement
For the Year Ended December 31, 2014

Sales revenue	$1,000,000
Cost of goods sold	700,000
Gross profit	300,000
Operating expenses	200,000
Net income	$ 100,000

LING COMPANY
Statement of Comprehensive Income
For the Year Ended December 31, 2014

Net income	$100,000
Other comprehensive income	
Unrealized gain on non-trading securities	75,000
Comprehensive income	$175,000

IFRS 13-3 INTERNATIONAL FINANCIAL REPORTING PROBLEM

(a) The company decided to sell its Baked Snacks business. It said it was doing this in order to enhance earnings and focus its resources on its core profitable divisions.

(b) During the year ended April 30, 2009 the company reported losses on the operation of the discontinued division of £1,553,000 and a loss on disposal of £4,283,000.

(c) The total recorded value of net assets at the date of disposal was £4,063,000. The company incurred costs of £220,000 to dispose of the business.