Chapter 18

Financial Statement Analysis

STUDY OBJECTIVES

After studying this chapter, you should be able to:

1. Discuss the need for comparative analysis.
2. Identify the tools of financial statement analysis.
3. Explain and apply horizontal analysis.
4. Describe and apply vertical analysis.
5. Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.
6. Understand the concept of earning power, and how irregular items are presented.
7. Understand the concept of quality of earnings. The Navigator

The Navigator

- Scan **Study Objectives**
- Read **Feature Story**
- Read **Preview**
- Read text and answer **DO IT!** p. 797 p. 810 p. 815 p. 817
- Work **Comprehensive** **DO IT!** p. 818
- Review **Summary of Study Objectives**
- Answer **Self-Study Questions**
- Complete **Assignments**

Feature Story

IT PAYS TO BE PATIENT

In 2008 *Forbes* magazine listed Warren Buffett as the richest person in the world. His estimated wealth was $62 billion, give or take a few million. How much is $62 billion? If you invested $62 billion in an investment earning just 4%, you could spend $6.8 million per day—every day—forever. How did Mr. Buffett amass this wealth? Through careful investing.

You think you might want to follow Buffett's example and transform your humble nest-egg into a mountain of cash. His techniques have been widely circulated and emulated, but never practiced with the same degree of success. Buffett epitomizes a "value investor." To this day he applies the same basic techniques he learned in the 1950s from the great value investor

Benjamin Graham. That means he spends his time looking for companies that have good long-term potential but are currently underpriced. He invests in companies that have low exposure to debt and that reinvest their earnings for future growth. He does not get caught up in fads or the latest trend. Instead, he looks for companies in industries with sound economics and ones that have high returns on stockholders' equity. He looks for steady earnings trends and high margins.

Buffett sat out on the dot-com mania in the 1990s, when investors put lots of money into fledgling high-tech firms, because he did not find dot-com companies that met his criteria. He didn't get to enjoy the stock price boom on the way up, but on the other hand, he didn't have to ride the price back down to earth. Instead, when the dot-com bubble burst, and nearly everyone else was suffering from investment shock, he swooped in and scooped up deals on companies that he had been following for years.

So, how does Mr. Buffett spend his money? Basically, he doesn't! He still lives in the same house that he purchased in Omaha, Nebraska, in 1958 for $31,500. He still drives his own car (a Cadillac DTS). And in case you were thinking that his kids are riding the road to easy street, think again. Buffett has committed to giving virtually all of his money to charity before he dies.

So, given that neither you nor anyone else will be inheriting Mr. Buffett's riches, you should start honing your financial analysis skills as soon as possible. A good way for you to begin your career as a successful investor is to master the fundamentals of financial analysis discussed in this chapter.

The Navigator

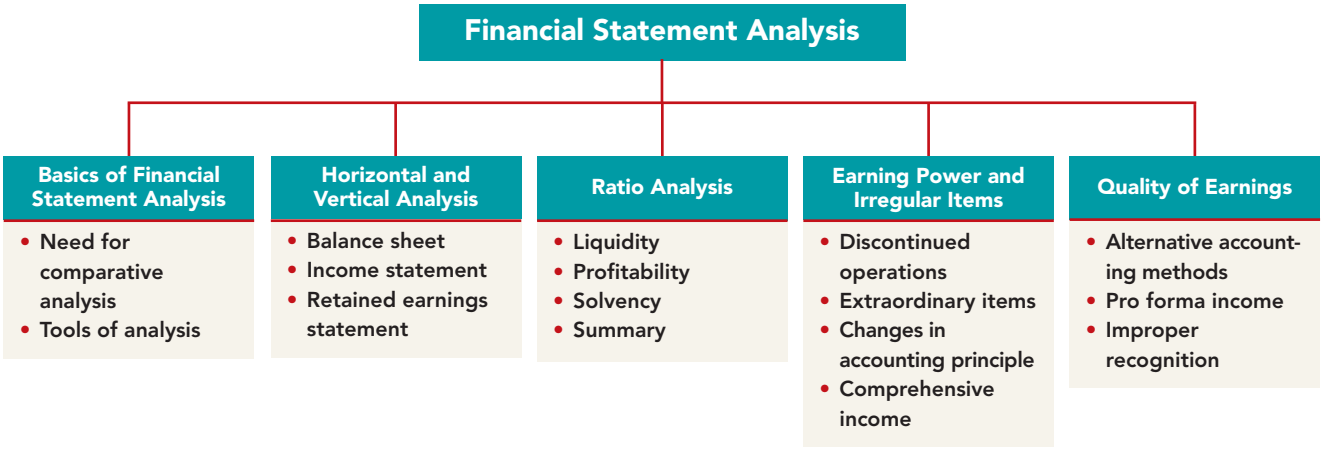
Inside Chapter 18...

Preview of Chapter 18

We can learn an important lesson from Warren Buffett. The lesson: Study companies carefully if you wish to invest. Do not get caught up in fads, but instead find companies that are financially healthy. Using some of the basic decision tools presented in this book, you can perform a rudimentary analysis on any U.S. company and draw basic conclusions about its financial health. Although it would not be wise for you to bet your life savings on a company's stock relying solely on your current level of knowledge, we strongly encourage you to practice your new skills wherever possible. Only with practice will you improve your ability to interpret financial numbers.

Before unleashing you on the world of high finance, we will present a few more important concepts and techniques, as well as provide you with one more comprehensive review of corporate financial statements. We use all of the decision tools presented in this text to analyze a single company—J.C. Penney Company, one of the country's oldest and largest retail store chains.

The content and organization of Chapter 18 are as follows.



The Navigator

BASICS OF FINANCIAL STATEMENT ANALYSIS

Analyzing financial statements involves evaluating three characteristics: a company's liquidity, profitability, and solvency. A **short-term creditor**, such as a bank, is primarily interested in liquidity—the ability of the borrower to pay obligations when they come due. The liquidity of the borrower is extremely important in evaluating the safety of a loan. A **long-term creditor**, such as a bondholder, looks to profitability and solvency measures that indicate the company's ability to survive over a long period of time. Long-term creditors consider such measures as the amount of debt in the company's capital structure and its ability to meet interest payments. Similarly, **stockholders** look at the profitability and solvency of the company. They want to assess the likelihood of dividends and the growth potential of the stock.

Need for Comparative Analysis

STUDY OBJECTIVE 1

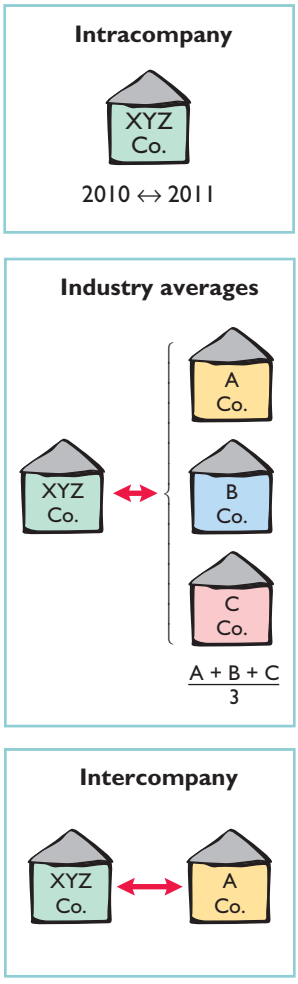
Discuss the need for comparative analysis.

Every item reported in a financial statement has significance. When J.C. Penney Company, Inc. reports cash of $2,471 million on its balance sheet, we know the company had that amount of cash on the balance sheet date. But, we do not know whether the amount represents an increase over

prior years, or whether it is adequate in relation to the company's need for cash. To obtain such information, we need to compare the amount of cash with other financial statement data.

Comparisons can be made on a number of different bases. Three are illustrated in this chapter:

1. **Intracompany basis.** 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. For example, J.C. Penney can compare its cash balance at the end of the current year with last year's balance to find the amount of the increase or decrease. Likewise, J.C. Penney can compare the percentage of cash to current assets at the end of the current year with the percentage in one or more prior years. Intracompany comparisons are useful in detecting changes in financial relationships and significant trends.
2. **Industry averages.** This basis compares an item or financial relationship of a company with **industry averages** (or **norms**) published by financial ratings organizations such as Dun & Bradstreet, Moody's, and Standard & Poor's. For example, J.C. Penney's net income can be compared with the average net income of all companies in the retail chain-store industry. Comparisons with industry averages provide information as to a company's relative performance within the industry.
3. **Intercompany basis.** This basis compares an item or financial relationship of one company with the same item or relationship in **one or more competing companies**. Analysts make these comparisons on the basis of the published financial statements of the individual companies. For example, we can compare J.C. Penney's total sales for the year with the total sales of a major competitor such as Kmart. Intercompany comparisons are useful in determining a company's competitive position.



Tools of Analysis

STUDY OBJECTIVE 2
Identify the tools of financial statement analysis.

We use various tools to evaluate the significance of financial statement data. Three commonly used tools are these:

- **Horizontal analysis** evaluates a series of financial statement data over a period of time.
- **Vertical analysis** evaluates financial statement data by expressing each item in a financial statement as a percent of a base amount.
- **Ratio analysis** expresses the relationship among selected items of financial statement data.

Horizontal analysis is used primarily in intracompany comparisons. Two features in published financial statements facilitate this type of comparison: First, each of the basic financial statements presents comparative financial data for a minimum of two years. Second, a summary of selected financial data is presented for a series of five to ten years or more. *Vertical analysis* is used in both intra- and intercompany comparisons. *Ratio analysis* is used in all three types of comparisons. In the following sections, we explain and illustrate each of the three types of analysis.

HORIZONTAL ANALYSIS

STUDY OBJECTIVE 3
Explain and apply horizontal analysis.

Horizontal analysis, also called **trend analysis**, is a technique for evaluating a series of financial statement data over a period of time. Its purpose is to determine the increase or decrease that has taken place. This change

may be expressed as either an amount or a percentage. For example, the recent net sales figures of J.C. Penney Company are as follows.

Illustration 18-1
J.C. Penney Company's net sales

J.C. PENNEY COMPANY
Net Sales (in millions)

2007	2006	2005
$19,860	$19,903	$18,781

If we assume that 2005 is the base year, we can measure all percentage increases or decreases from this base period amount as follows.

Illustration 18-2
Formula for horizontal analysis of changes since base period

$$\text{Change Since Base Period} = \frac{\text{Current Year Amount} - \text{Base Year Amount}}{\text{Base Year Amount}}$$

For example, we can determine that net sales for J.C. Penney increased from 2005 to 2006 approximately 6% [($19,903 − $18,781) ÷ $18,781]. Similarly, we can determine that net sales increased from 2005 to 2007 approximately 5.7% [($19,860 − $18,781) ÷ $18,781].

Alternatively, we can express current year sales as a percentage of the base period. We do this by dividing the current year amount by the base year amount, as shown below.

Illustration 18-3
Formula for horizontal analysis of current year in relation to base year

$$\text{Current Results in Relation to Base Period} = \frac{\text{Current Year Amount}}{\text{Base Year Amount}}$$

Illustration 18-4 presents this analysis for J.C. Penney for a three-year period using 2005 as the base period.

Illustration 18-4
Horizontal analysis of J.C. Penney Company's net sales in relation to base period

J.C. PENNEY COMPANY
Net Sales (in millions)
in relation to base period 2005

2007	2006	2005
$19,860	$19,903	$18,781
105.7%	106.0%	100.0%

Balance Sheet

To further illustrate horizontal analysis, we will use the financial statements of Quality Department Store Inc., a fictional retailer. Illustration 18-5 presents a horizontal analysis of its two-year condensed balance sheets, showing dollar and percentage changes.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets
December 31

Illustration 18-5
Horizontal analysis of balance sheets

	2007	2006	Increase or (Decrease) during 2007 Amount	Percent
Assets				
Current assets	$1,020,000	$ 945,000	$ 75,000	7.9%
Plant assets (net)	800,000	632,500	167,500	26.5%
Intangible assets	15,000	17,500	(2,500)	(14.3%)
Total assets	$1,835,000	$1,595,000	$240,000	15.0%
Liabilities				
Current liabilities	$ 344,500	$ 303,000	$ 41,500	13.7%
Long-term liabilities	487,500	497,000	(9,500)	(1.9%)
Total liabilities	832,000	800,000	32,000	4.0%
Stockholders' Equity				
Common stock, $1 par	275,400	270,000	5,400	2.0%
Retained earnings	727,600	525,000	202,600	38.6%
Total stockholders' equity	1,003,000	795,000	208,000	26.2%
Total liabilities and stockholders' equity	$1,835,000	$1,595,000	$240,000	15.0%

The comparative balance sheets in Illustration 18-5 show that a number of significant changes have occurred in Quality Department Store's financial structure from 2006 to 2007:

- In the assets section, plant assets (net) increased $167,500, or 26.5%.
- In the liabilities section, current liabilities increased $41,500, or 13.7%.
- In the stockholders' equity section, retained earnings increased $202,600, or 38.6%.

These changes suggest that the company expanded its asset base during 2007 and **financed this expansion primarily by retaining income** rather than assuming additional long-term debt.

Income Statement

Illustration 18-6 (page 796) presents a horizontal analysis of the two-year condensed income statements of Quality Department Store Inc. for the years 2007 and 2006. Horizontal analysis of the income statements shows the following changes:

- Net sales increased $260,000, or 14.2% ($260,000 ÷ $1,837,000).
- Cost of goods sold increased $141,000, or 12.4% ($141,000 ÷ $1,140,000).
- Total operating expenses increased $37,000, or 11.6% ($37,000 ÷ $320,000).

Overall, gross profit and net income were up substantially. Gross profit increased 17.1%, and net income, 26.5%. Quality's profit trend appears favorable.

Illustration 18-6
Horizontal analysis of income statements

QUALITY DEPARTMENT STORE INC.
Condensed Income Statements
For the Years Ended December 31

	2007	2006	Increase or (Decrease) during 2007 Amount	Percent
Sales	$2,195,000	$1,960,000	$235,000	12.0%
Sales returns and allowances	98,000	123,000	(25,000)	(20.3%)
Net sales	2,097,000	1,837,000	260,000	14.2%
Cost of goods sold	1,281,000	1,140,000	141,000	12.4%
Gross profit	816,000	697,000	119,000	17.1%
Selling expenses	253,000	211,500	41,500	19.6%
Administrative expenses	104,000	108,500	(4,500)	(4.1%)
Total operating expenses	357,000	320,000	37,000	11.6%
Income from operations	459,000	377,000	82,000	21.8%
Other revenues and gains				
Interest and dividends	9,000	11,000	(2,000)	(18.2%)
Other expenses and losses				
Interest expense	36,000	40,500	(4,500)	(11.1%)
Income before income taxes	432,000	347,500	84,500	24.3%
Income tax expense	168,200	139,000	29,200	21.0%
Net income	$ 263,800	$ 208,500	$ 55,300	26.5%

HELPFUL HINT
Note that though the amount column is additive (the total is $55,300), the percentage column is not additive (26.5% is not the total). A separate percentage has been calculated for each item.

Retained Earnings Statement

Illustration 18-7 presents a horizontal analysis of Quality Department Store's comparative retained earnings statements. Analyzed horizontally, net income increased $55,300, or 26.5%, whereas dividends on the common stock increased only $1,200, or 2%. We saw in the horizontal analysis of the balance sheet that ending retained earnings increased 38.6%. As indicated earlier, the company retained a significant portion of net income to finance additional plant facilities.

Illustration 18-7
Horizontal analysis of retained earnings statements

QUALITY DEPARTMENT STORE INC.
Retained Earnings Statements
For the Years Ended December 31

	2007	2006	Increase or (Decrease) during 2007 Amount	Percent
Retained earnings, Jan. 1	$525,000	$376,500	$148,500	39.4%
Add: Net income	263,800	208,500	55,300	26.5%
	788,800	585,000	203,800	
Deduct: Dividends	61,200	60,000	1,200	2.0%
Retained earnings, Dec. 31	$727,600	$525,000	$202,600	38.6%

Horizontal analysis of changes from period to period is relatively straightforward and is quite useful. But complications can occur in making the computations. If an item has no value in a base year or preceding year but does have a value in the next year, we cannot compute a percentage change. Similarly, if a negative amount

appears in the base or preceding period and a positive amount exists the following year (or vice versa), no percentage change can be computed.

DO IT!

HORIZONTAL ANALYSIS

Summary financial information for Rosepatch Company is as follows.

	December 31, 2010	December 31, 2009
Current assets	$234,000	$180,000
Plant assets (net)	756,000	420,000
Total assets	$990,000	$600,000

Compute the amount and percentage changes in 2010 using horizontal analysis, assuming 2009 is the base year.

action plan

✔ Find the percentage change by dividing the amount of the increase by the 2009 amount (base year).

Solution

	Increase in 2010	
	Amount	Percent
Current assets	$ 54,000	30% [($234,000 − $180,000) ÷ $180,000]
Plant assets (net)	336,000	80% [($756,000 − $420,000) ÷ $420,000]
Total assets	$390,000	65% [($990,000 − $600,000) ÷ $600,000]

Related exercise material: **BE18-2, BE18-3, BE18-5, BE18-6, BE18-7, E18-1, E18-3, E18-4,** and **DO IT! 18-1.**

The Navigator

VERTICAL ANALYSIS

STUDY OBJECTIVE 4
Describe and apply vertical analysis.

Vertical analysis, also called **common-size analysis**, is a technique that expresses each financial statement item as a percent of a base amount. On a balance sheet we might say that current assets are 22% of total assets—*total assets* being the base amount. Or on an income statement, we might say that selling expenses are 16% of net sales—*net sales* being the base amount.

Balance Sheet

Illustration 18-8 (page 798) presents the vertical analysis of Quality Department Store Inc.'s comparative balance sheets. The base for the asset items is **total assets**. The base for the liability and stockholders' equity items is **total liabilities and stockholders' equity**.

Vertical analysis shows the relative size of each category in the balance sheet. It also can show the **percentage change** in the individual asset, liability, and stockholders' equity items. For example, we can see that current assets decreased from 59.2% of total assets in 2006 to 55.6% in 2007 (even though the absolute dollar amount increased $75,000 in that time). Plant assets (net) have increased from 39.7% to 43.6% of total assets. Retained earnings have increased from 32.9% to 39.7% of total liabilities and stockholders' equity. These results reinforce the earlier observations that **Quality is choosing to finance its growth through retention of earnings rather than through issuing additional debt**.

Income Statement

Illustration 18-9 (page 798) shows vertical analysis of Quality's income statements. Cost of goods sold as a percentage of net sales declined 1% (62.1% vs. 61.1%), and total operating expenses declined 0.4% (17.4% vs. 17.0%). As a result, it is not surprising

Illustration 18-8
Vertical analysis of balance sheets

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets
December 31

	2007		2006	
	Amount	**Percent**	**Amount**	**Percent**
Assets				
Current assets	$1,020,000	55.6%	$ 945,000	59.2%
Plant assets (net)	800,000	43.6%	632,500	39.7%
Intangible assets	15,000	0.8%	17,500	1.1%
Total assets	$1,835,000	100.0%	$1,595,000	100.0%
Liabilities				
Current liabilities	$ 344,500	18.8%	$ 303,000	19.0%
Long-term liabilities	487,500	26.5%	497,000	31.2%
Total liabilities	832,000	45.3%	800,000	50.2%
Stockholders' Equity				
Common stock, $1 par	275,400	15.0%	270,000	16.9%
Retained earnings	727,600	39.7%	525,000	32.9%
Total stockholders' equity	1,003,000	54.7%	795,000	49.8%
Total liabilities and stockholders' equity	$1,835,000	100.0%	$1,595,000	100.0%

HELPFUL HINT
The formula for calculating these balance sheet percentages is:

$$\frac{\text{Each item on B/S}}{\text{Total assets}} = \%$$

Illustration 18-9
Vertical analysis of income statements

QUALITY DEPARTMENT STORE INC.
Condensed Income Statements
For the Years Ended December 31

	2007		2006	
	Amount	**Percent**	**Amount**	**Percent**
Sales	$2,195,000	104.7%	$1,960,000	106.7%
Sales returns and allowances	98,000	4.7%	123,000	6.7%
Net sales	2,097,000	100.0%	1,837,000	100.0%
Cost of goods sold	1,281,000	61.1%	1,140,000	62.1%
Gross profit	816,000	38.9%	697,000	37.9%
Selling expenses	253,000	12.0%	211,500	11.5%
Administrative expenses	104,000	5.0%	108,500	5.9%
Total operating expenses	357,000	17.0%	320,000	17.4%
Income from operations	459,000	21.9%	377,000	20.5%
Other revenues and gains				
Interest and dividends	9,000	0.4%	11,000	0.6%
Other expenses and losses				
Interest expense	36,000	1.7%	40,500	2.2%
Income before income taxes	432,000	20.6%	347,500	18.9%
Income tax expense	168,200	8.0%	139,000	7.5%
Net income	$ 263,800	12.6%	$ 208,500	11.4%

HELPFUL HINT
The formula for calculating these income statement percentages is:

$$\frac{\text{Each item on I/S}}{\text{Net sales}} = \%$$

to see net income as a percent of net sales increase from 11.4% to 12.6%. Quality appears to be a profitable enterprise that is becoming even more successful.

An associated benefit of vertical analysis is that it enables you to compare companies of different sizes. For example, Quality's main competitor is a JC Penney store in a nearby town. Using vertical analysis, we can compare the condensed income statements of Quality Department Store Inc. (a small retail company) with J.C. Penney Company, Inc. (a giant international retailer), as shown in Illustration 18-10.

CONDENSED INCOME STATEMENTS
(in thousands)

	Quality Department Store Inc.		J. C. Penney Company[1]	
	Dollars	Percent	Dollars	Percent
Net sales	$2,097	100.0%	$19,860,000	100.0%
Cost of goods sold	1,281	61.1%	12,189,000	61.4%
Gross profit	816	38.9%	7,671,000	38.6%
Selling and administrative expenses	357	17.0%	5,357,000	27.0%
Income from operations	459	21.9%	2,314,000	11.6%
Other expenses and revenues (including income taxes)	195	9.3%	1,203,000	6.0%
Net income	$ 264	12.6%	$ 1,111,000	5.6%

Illustration 18-10
Intercompany income statement comparison

J.C. Penney's net sales are 9,471 times greater than the net sales of relatively tiny Quality Department Store. But vertical analysis eliminates this difference in size. The percentages show that Quality's and J.C. Penney's gross profit rates were comparable at 38.9% and 38.6%. However, the percentages related to income from operations were significantly different at 21.9% and 11.6%. This disparity can be attributed to Quality's selling and administrative expense percentage (17%) which is much lower than J.C. Penney's (27.0%). Although J.C. Penney earned net income more than 4,208 times larger than Quality's, J.C. Penney's net income as a **percent of each sales dollar** (5.6%) is only 44% of Quality's (12.6%).

RATIO ANALYSIS

STUDY OBJECTIVE 5
Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.

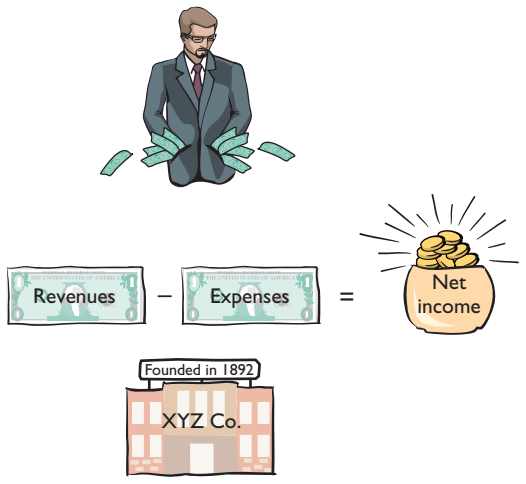
Ratio analysis expresses the relationship among selected items of financial statement data. A **ratio** expresses the mathematical relationship between one quantity and another. The relationship is expressed in terms of either a percentage, a rate, or a simple proportion. To illustrate, in 2007 Nike, Inc., had current assets of $8,076.5 million and current liabilities of $2,584.0 million. We can find the relationship between these two measures by dividing current assets by current liabilities. The alternative means of expression are:

Percentage: Current assets are 313% of current liabilities.
Rate: Current assets are 3.13 times current liabilities.
Proportion: The relationship of current assets to liabilities is 3.13:1.

To analyze the primary financial statements, we can use ratios to evaluate liquidity, profitability, and solvency. Illustration 18-11 describes these classifications.

[1] *2007 Annual Report* J.C. Penney Company, Inc. (Dallas, Texas).

Illustration 18-11
Financial ratio classifications



Liquidity Ratios

Measure short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash

Profitability Ratios

Measure the income or operating success of a company for a given period of time

Solvency Ratios

Measure the ability of the company to survive over a long period of time

INTERNATIONAL NOTE

As more countries adopt international accounting standards, the ability of analysts to compare companies from different countries should improve. However, international standards are open to widely varying interpretations. In addition, some countries adopt international standards "with modifications." As a consequence, most cross-country comparisons are still not as transparent as within-country comparisons.

ETHICS NOTE

Companies can affect the current ratio by speeding up or withholding payments on accounts payable just before the balance sheet date. Management can alter the cash balance by increasing or decreasing long-term assets or long-term debt, or by issuing or purchasing equity shares.

Ratios can provide clues to underlying conditions that may not be apparent from individual financial statement components. However, a single ratio by itself is not very meaningful. Thus, in the discussion of ratios we will use the following types of comparisons.

1. **Intracompany comparisons** for two years for Quality Department Store.
2. **Industry average comparisons** based on median ratios for department stores.
3. **Intercompany comparisons** based on J.C. Penney Company as Quality Department Store's principal competitor.

Liquidity Ratios

Liquidity ratios measure the short-term ability of the company to pay its maturing obligations and to meet unexpected needs for cash. Short-term creditors such as bankers and suppliers are particularly interested in assessing liquidity. The ratios we can use to determine the enterprise's short-term debt-paying ability are the current ratio, the acid-test ratio, receivables turnover, and inventory turnover.

1. CURRENT RATIO

The **current ratio** is a widely used measure for evaluating a company's liquidity and short-term debt-paying ability. The ratio is computed by dividing current assets by current liabilities. Illustration 18-12 shows the 2007 and 2006 current ratios for Quality Department Store and comparative data.

Illustration 18-12
Current ratio

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

Quality Department Store

2007	2006
$\frac{\$1,020,000}{\$344,500} = 2.96:1$	$\frac{\$945,000}{\$303,000} = 3.12:1$
Industry average	J.C. Penney Company
1.06:1	2.02:1

What does the ratio actually mean? The 2007 ratio of 2.96:1 means that for every dollar of current liabilities, Quality has $2.96 of current assets. Quality's current ratio has decreased in the current year. But, compared to the industry average of 1.06:1, Quality appears to be reasonably liquid. J.C. Penney has a current ratio of 2.02 which indicates it has adequate current assets relative to its current liabilities.

The current ratio is sometimes referred to as the **working capital ratio**; **working capital** is current assets minus current liabilities. The current ratio is a more dependable indicator of liquidity than working capital. Two companies with the same amount of working capital may have significantly different current ratios.

The current ratio is only one measure of liquidity. It does not take into account the **composition** of the current assets. For example, a satisfactory current ratio does not disclose the fact that a portion of the current assets may be tied up in slow-moving inventory. A dollar of cash would be more readily available to pay the bills than a dollar of slow-moving inventory.

HELPFUL HINT

Can any company operate successfully without working capital? Yes, if it has very predictable cash flows and solid earnings. A number of companies (e.g., Whirlpool, American Standard, and Campbell's Soup) are pursuing this goal. The rationale: Less money tied up in working capital means more money to invest in the business.

2. ACID-TEST RATIO

The **acid-test (quick) ratio** is a measure of a company's immediate short-term liquidity. We compute this ratio by dividing the sum of cash, short-term investments, and net receivables by current liabilities. Thus, it is an important complement to the current ratio. For example, assume that the current assets of Quality Department Store for 2007 and 2006 consist of the items shown in Illustration 18-13.

QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	2007	2006
Current assets		
Cash	$ 100,000	$155,000
Short-term investments	20,000	70,000
Receivables (net*)	230,000	180,000
Inventory	620,000	500,000
Prepaid expenses	50,000	40,000
Total current assets	$1,020,000	$945,000

*Allowance for doubtful accounts is $10,000 at the end of each year.

Illustration 18-13
Current assets of Quality Department Store

Cash, short-term investments, and receivables (net) are highly liquid compared to inventory and prepaid expenses. The inventory may not be readily saleable, and the prepaid expenses may not be transferable to others. Thus, the acid-test ratio measures **immediate** liquidity. The 2007 and 2006 acid-test ratios for Quality Department Store and comparative data are as follows.

$$\text{Acid-Test Ratio} = \frac{\text{Cash + Short-Term Investments + Receivables (Net)}}{\text{Current Liabilities}}$$

Quality Department Store

2007	2006
$\frac{\$100,000 + \$20,000 + \$230,000}{\$344,500} = 1.02:1$	$\frac{\$155,000 + \$70,000 + \$180,000}{\$303,000} = 1.34:1$

Industry average	J.C. Penney Company
0.29:1	0.87:1

Illustration 18-14
Acid-test ratio

The ratio has declined in 2007. Is an acid-test ratio of 1.02:1 adequate? This depends on the industry and the economy. When compared with the industry average of 0.29:1 and Penney's of 0.87:1, Quality's acid-test ratio seems adequate.

3. RECEIVABLES TURNOVER

We can measure liquidity by how quickly a company can convert certain assets to cash. How liquid, for example, are the receivables? The ratio used to assess the liquidity of the receivables is **receivables turnover**. It measures the number of times, on average, the company collects receivables during the period. We compute receivables turnover by dividing net credit sales (net sales less cash sales) by the average net receivables. Unless seasonal factors are significant, average net receivables can be computed from the beginning and ending balances of the net receivables.[2]

Assume that all sales are credit sales. The balance of net receivables at the beginning of 2006 is $200,000. Illustration 18-15 shows the receivables turnover for Quality Department Store and comparative data. Quality's receivables turnover improved in 2007. The turnover of 10.2 times is substantially lower than J.C. Penney's 57 times, and is also lower than the department store industry's average of 28.23 times.

Illustration 18-15
Receivables turnover

$$\text{Receivables Turnover} = \frac{\text{Net Credit Sales}}{\text{Average Net Receivables}}$$

Quality Department Store

2007	2006
$\dfrac{\$2{,}097{,}000}{\left[\dfrac{\$180{,}000 + \$230{,}000}{2}\right]} = 10.2$ times	$\dfrac{\$1{,}837{,}000}{\left[\dfrac{\$200{,}000 + \$180{,}000}{2}\right]} = 9.7$ times

Industry average	J.C. Penney Company
28.23 times	57 times

Average Collection Period. A popular variant of the receivables turnover ratio is to convert it to an **average collection period** in terms of days. To do so, we divide the receivables turnover ratio into 365 days. For example, the receivables turnover of 10.2 times divided into 365 days gives an average collection period of approximately 36 days. This means that receivables are collected on average every 36 days, or about every 5 weeks. Analysts frequently use the average collection period to assess the effectiveness of a company's credit and collection policies. The general rule is that the collection period should not greatly exceed the credit term period (the time allowed for payment).

4. INVENTORY TURNOVER

Inventory turnover measures the number of times, on average, the inventory is sold during the period. Its purpose is to measure the liquidity of the inventory. We compute the inventory turnover by dividing cost of goods sold by the average inventory. Unless seasonal factors are significant, we can use the beginning and ending inventory balances to compute average inventory.

Assuming that the inventory balance for Quality Department Store at the beginning of 2006 was $450,000, its inventory turnover and comparative data are as shown in Illustration 18-16. Quality's inventory turnover declined slightly in 2007.

[2] If seasonal factors are significant, the average receivables balance might be determined by using monthly amounts.

The turnover of 2.3 times is relatively low compared with the industry average of 7.0 and J.C. Penney's 3.5. Generally, the faster the inventory turnover, the less cash a company has tied up in inventory and the less the chance of inventory obsolescence.

Illustration 18-16
Inventory turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Quality Department Store

2007	2006
$\frac{\$1,281,000}{\left[\frac{\$500,000 + \$620,000}{2}\right]} = 2.3$ times	$\frac{\$1,140,000}{\left[\frac{\$450,000 + \$500,000}{2}\right]} = 2.4$ times
Industry average: 7.0 times	J.C. Penney Company: 3.5 times

Days in Inventory. A variant of inventory turnover is the **days in inventory**. We calculate it by dividing the inventory turnover into 365. For example, Quality's 2007 inventory turnover of 2.3 times divided into 365 is approximately 159 days. An average selling time of 159 days is also relatively high compared with the industry average of 52.1 days (365 ÷ 7.0) and J.C. Penney's 104.3 days (365 ÷ 3.5).

Inventory turnover ratios vary considerably among industries. For example, grocery store chains have a turnover of 10 times and an average selling period of 37 days. In contrast, jewelry stores have an average turnover of 1.3 times and an average selling period of 281 days.

Profitability Ratios

Profitability ratios measure the income or operating success of a company for a given period of time. Income, or the lack of it, affects the company's ability to obtain debt and equity financing. It also affects the company's liquidity position and the company's ability to grow. As a consequence, both creditors and investors are interested in evaluating earning power—profitability. Analysts frequently use profitability as the ultimate test of management's operating effectiveness.

5. PROFIT MARGIN

Profit margin is a measure of the percentage of each dollar of sales that results in net income. We can compute it by dividing net income by net sales. Illustration 18-17 shows Quality Department Store's profit margin and comparative data.

ALTERNATIVE TERMINOLOGY

Profit margin is also called the *rate of return on sales*.

Illustration 18-17
Profit margin

$$\text{Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales}}$$

Quality Department Store

2007	2006
$\frac{\$263,800}{\$2,097,000} = 12.6\%$	$\frac{\$208,500}{\$1,837,000} = 11.4\%$
Industry average: 3.7%	J.C. Penney Company: 5.6%

Quality experienced an increase in its profit margin from 2006 to 2007. Its profit margin is unusually high in comparison with the industry average of 3.7% and J.C. Penney's 5.6%.

High-volume (high inventory turnover) enterprises such as grocery stores (Safeway or Kroger) and discount stores (Kmart or Wal-Mart) generally experience low profit margins. In contrast, low-volume enterprises such as jewelry stores (Tiffany & Co.) or airplane manufacturers (Boeing Co.) have high profit margins.

6. ASSET TURNOVER

Asset turnover measures how efficiently a company uses its assets to generate sales. It is determined by dividing net sales by average assets. The resulting number shows the dollars of sales produced by each dollar invested in assets. Unless seasonal factors are significant, we can use the beginning and ending balance of total assets to determine average total assets. Assuming that total assets at the beginning of 2006 were $1,446,000, the 2007 and 2006 asset turnover for Quality Department Store and comparative data are shown in Illustration 18-18.

Illustration 18-18
Asset turnover

$$\text{Asset Turnover} = \frac{\text{Net Sales}}{\text{Average Assets}}$$

Quality Department Store

2007	2006
$\dfrac{\$2{,}097{,}000}{\left[\dfrac{\$1{,}595{,}000 + \$1{,}835{,}000}{2}\right]} = 1.22$ times	$\dfrac{\$1{,}837{,}000}{\left[\dfrac{\$1{,}446{,}000 + \$1{,}595{,}000}{2}\right]} = 1.21$ times

Industry average	J.C. Penney Company
2.14 times	1.47 times

Asset turnover shows that in 2007 Quality generated sales of $1.22 for each dollar it had invested in assets. The ratio changed little from 2006 to 2007. Quality's asset turnover is below the industry average of 2.14 times and J.C. Penney's ratio of 1.47 times.

Asset turnover ratios vary considerably among industries. For example, a large utility company like Consolidated Edison (New York) has a ratio of 0.49 times, and the large grocery chain Kroger Stores has a ratio of 4.34 times.

7. RETURN ON ASSETS

An overall measure of profitability is **return on assets**. We compute this ratio by dividing net income by average assets. The 2007 and 2006 return on assets for Quality Department Store and comparative data are shown below.

Illustration 18-19
Return on assets

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Average Assets}}$$

Quality Department Store

2007	2006
$\dfrac{\$263{,}800}{\left[\dfrac{\$1{,}595{,}000 + \$1{,}835{,}000}{2}\right]} = 15.4\%$	$\dfrac{\$208{,}500}{\left[\dfrac{\$1{,}446{,}000 + \$1{,}595{,}000}{2}\right]} = 13.7\%$

Industry average	J.C. Penney Company
7.9%	8.2%

Quality's return on assets improved from 2006 to 2007. Its return of 15.4% is very high compared with the department store industry average of 7.9% and J.C. Penney's 8.2%.

8. RETURN ON COMMON STOCKHOLDERS' EQUITY

Another widely used profitability ratio is **return on common stockholders' equity**. It measures profitability from the common stockholders' viewpoint. This ratio shows how many dollars of net income the company earned for each dollar invested by the owners. We compute it by dividing net income by average common stockholders' equity. Assuming that common stockholders' equity at the beginning of 2006 was $667,000, Illustration 18-20 shows the 2007 and 2006 ratios for Quality Department Store and comparative data.

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

Quality Department Store

2007	2006
$\frac{\$263{,}800}{\left[\frac{\$795{,}000 + \$1{,}003{,}000}{2}\right]} = 29.3\%$	$\frac{\$208{,}500}{\left[\frac{\$667{,}000 + \$795{,}000}{2}\right]} = 28.5\%$

Industry average	J. C. Penney Company
19.2%	23.1%

Illustration 18-20 Return on common stockholders' equity

Quality's rate of return on common stockholders' equity is high at 29.3%, considering an industry average of 19.2% and a rate of 23.1% for J.C. Penney.

With Preferred Stock. When a company has preferred stock, we must deduct **preferred dividend** requirements from net income to compute income available to common stockholders. Similarly, we deduct the par value of preferred stock (or call price, if applicable) from total stockholders' equity to determine the amount of common stockholders' equity used in this ratio. The ratio then appears as follows.

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

Illustration 18-21 Return on common stockholders' equity with preferred stock

Note that Quality's rate of return on stockholders' equity (29.3%) is substantially higher than its rate of return on assets (15.4%). The reason is that Quality has made effective use of **leverage**. **Leveraging** or **trading on the equity** at a gain means that the company has borrowed money at a lower rate of interest than it is able to earn by using the borrowed money. Leverage enables Quality Department Store to use money supplied by nonowners to increase the return to the owners. A comparison of the rate of return on total assets with the rate of interest paid for borrowed money indicates the profitability of trading on the equity. Quality Department Store earns more on its borrowed funds than it has to pay in the form of interest. Thus the return to stockholders exceeds the return on the assets, due to benefits from the positive leveraging.

9. EARNINGS PER SHARE (EPS)

Earnings per share (EPS) is a measure of the net income earned on each share of common stock. It is computed by dividing net income by the number of weighted average common shares outstanding during the year. A measure of net income earned on a per share basis provides a useful perspective for determining profitability. Assuming that there is no change in the number of outstanding shares during 2006 and that the 2007 increase occurred midyear, Illustration 18-22 shows the net income per share for Quality Department Store for 2007 and 2006.

Illustration 18-22
Earnings per share

$$\text{Earnings per Share} = \frac{\text{Net Income}}{\text{Weighted Average Common Shares Outstanding}}$$

Quality Department Store

2007	2006
$\dfrac{\$263{,}800}{\left[\dfrac{270{,}000 + 275{,}400}{2}\right]} = \$0.97$	$\dfrac{\$208{,}500}{270{,}000} = \$0.77$

Note that no industry or J.C. Penney data are presented. Such comparisons are not meaningful because of the wide variations in the number of shares of outstanding stock among companies. The only meaningful EPS comparison is an intracompany trend comparison: Quality's earnings per share increased 20 cents per share in 2007. This represents a 26% increase over the 2006 earnings per share of 77 cents.

The terms "earnings per share" and "net income per share" refer to the amount of net income applicable to each share of **common stock**. Therefore, in computing EPS, if there are preferred dividends declared for the period, we must deduct them from net income to determine income available to the common stockholders.

10. PRICE-EARNINGS RATIO

The **price-earnings (P-E) ratio** is an oft-quoted measure of the ratio of the market price of each share of common stock to the earnings per share. The price-earnings (P-E) ratio reflects investors' assessments of a company's future earnings. We compute it by dividing the market price per share of the stock by earnings per share. Assuming that the market price of Quality Department Store Inc. stock is $8 in 2006 and $12 in 2007, the price-earnings ratio computation is as follows.

Illustration 18-23
Price-earnings ratio

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

Quality Department Store

2007	2006
$\dfrac{\$12.00}{\$0.97} = 12.4$ times	$\dfrac{\$8.00}{\$0.77} = 10.4$ times
Industry average: 17.1 times	J.C. Penney Company: 9.7 times

In 2007 each share of Quality's stock sold for 12.4 times the amount that the company earned on each share. Quality's price-earnings ratio is lower than the industry

average of 17.1 times, but 28% higher than the ratio of 9.7 times for J.C. Penney. The average price-earnings ratio for the stocks that constitute the Standard and Poor's 500 Index (500 largest U.S. firms) in early 2007 was approximately 19.1 times.

11. PAYOUT RATIO

The **payout ratio** measures the percentage of earnings distributed in the form of cash dividends. We compute it by dividing cash dividends by net income. Companies that have high growth rates generally have low payout ratios because they reinvest most of their net income into the business. The 2007 and 2006 payout ratios for Quality Department Store are computed as shown in Illustration 18-24.

$$\text{Payout Ratio} = \frac{\text{Cash Dividends}}{\text{Net Income}}$$

Quality Department Store

2007	2006
$\frac{\$61,200}{\$263,800} = 23.2\%$	$\frac{\$60,000}{\$208,500} = 28.8\%$
Industry average: 16.1%	J.C. Penney Company: 15.7%

Illustration 18-24
Payout ratio

Quality's payout ratio is higher than J.C. Penney's payout ratio of 15.7%. As indicated earlier (page 797), Quality funded its purchase of plant assets through retention of earnings but still is able to pay dividends.

Solvency Ratios

Solvency ratios measure the ability of a company to survive over a long period of time. Long-term creditors and stockholders are particularly interested in a company's ability to pay interest as it comes due and to repay the face value of debt at maturity. Debt to total assets and times interest earned are two ratios that provide information about debt-paying ability.

12. DEBT TO TOTAL ASSETS RATIO

The **debt to total assets ratio** measures the percentage of the total assets that creditors provide. We compute it by dividing total debt (both current and long-term liabilities) by total assets. This ratio indicates the company's degree of leverage. It also provides some indication of the company's ability to withstand losses without impairing the interests of creditors. The higher the percentage of debt to total assets, the greater the risk that the company may be unable to meet its maturing obligations. The 2007 and 2006 ratios for Quality Department Store and comparative data are as follows.

$$\text{Debt to Total Assets Ratio} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Quality Department Store

2007	2006
$\frac{\$832,000}{\$1,835,000} = 45.3\%$	$\frac{\$800,000}{\$1,595,000} = 50.2\%$
Industry average: 40.1%	J.C. Penney Company: 62.9%

Illustration 18-25
Debt to total assets ratio

A ratio of 45.3% means that creditors have provided 45.3% of Quality Department Store's total assets. Quality's 45.3% is above the industry average of 40.1%. It is considerably below the high 62.9% ratio of J.C. Penney. The lower the ratio, the more equity "buffer" there is available to the creditors. Thus, from the creditors' point of view, a low ratio of debt to total assets is usually desirable.

The adequacy of this ratio is often judged in the light of the company's earnings. Generally, companies with relatively stable earnings (such as public utilities) have higher debt to total assets ratios than cyclical companies with widely fluctuating earnings (such as many high-tech companies).

13. TIMES INTEREST EARNED

ALTERNATIVE TERMINOLOGY

Times interest earned is also called *interest coverage*.

Times interest earned provides an indication of the company's ability to meet interest payments as they come due. We compute it by dividing income before interest expense and income taxes by interest expense. Illustration 18-26 shows the 2007 and 2006 ratios for Quality Department Store and comparative data. Note that times interest earned uses income before income taxes and interest expense. This represents the amount available to cover interest. For Quality Department Store the 2007 amount of $468,000 is computed by taking the income before income taxes of $432,000 and adding back the $36,000 of interest expense.

Illustration 18-26
Times interest earned

$$\text{Times Interest Earned} = \frac{\text{Income before Income Taxes and Interest Expense}}{\text{Interest Expense}}$$

Quality Department Store

2007	2006
$\frac{\$468,000}{\$36,000} = 13$ times	$\frac{\$388,000}{\$40,500} = 9.6$ times
Industry average: 10.7 times	J.C. Penney Company: 12.3 times

Quality's interest expense is well covered at 13 times, compared with the industry average of 10.7 times and J.C. Penney's 12.3 times.

INVESTOR INSIGHT

Keeping Up to Date as an Investor

Today, investors have access to information provided by corporate managers that used to be available only to professional analysts. Corporate managers have always made themselves available to security analysts for questions at the end of every quarter. Now, because of a combination of new corporate disclosure requirements by the Securities and Exchange Commission and technologies that make communication to large numbers of people possible at a very low price, the average investor can listen in on these discussions. For example, one individual investor, Matthew Johnson, a Nortel Networks local area network engineer in Belfast, Northern Ireland, "stayed up past midnight to listen to Apple Computer's Internet conference call. Hearing the company's news 'from the dog's mouth,' he says 'gave me better information' than hunting through chat-rooms."

Source: Jeff D. Opdyke, "Individuals Pick Up on Conference Calls," *Wall Street Journal*, November 20, 2000.

? If you want to keep current with the financial and operating developments of a company in which you own shares, what are some ways you can do so?

Summary of Ratios

Illustration 18-27 summarizes the ratios discussed in this chapter. The summary includes the formula and purpose or use of each ratio.

Illustration 18-27 Summary of liquidity, profitability, and solvency ratios

Ratio	Formula	Purpose or Use
Liquidity Ratios		
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Measures short-term debt-paying ability.
2. Acid-test (quick) ratio	$\frac{\text{Cash + Short-term investments + Receivables (net)}}{\text{Current liabilities}}$	Measures immediate short-term liquidity.
3. Receivables turnover	$\frac{\text{Net credit sales}}{\text{Average net receivables}}$	Measures liquidity of receivables.
4. Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Measures liquidity of inventory.
Profitability Ratios		
5. Profit margin	$\frac{\text{Net income}}{\text{Net sales}}$	Measures net income generated by each dollar of sales.
6. Asset turnover	$\frac{\text{Net sales}}{\text{Average assets}}$	Measures how efficiently assets are used to generate sales.
7. Return on assets	$\frac{\text{Net income}}{\text{Average assets}}$	Measures overall profitability of assets.
8. Return on common stockholders' equity	$\frac{\text{Net income − Preferred dividends}}{\text{Average common stockholders' equity}}$	Measures profitability of owners' investment.
9. Earnings per share (EPS)	$\frac{\text{Net income − Preferred dividends}}{\text{Weighted average common shares outstanding}}$	Measures net income earned on each share of common stock.
10. Price-earnings (P-E) ratio	$\frac{\text{Market price per share of stock}}{\text{Earnings per share}}$	Measures the ratio of the market price per share to earnings per share.
11. Payout ratio	$\frac{\text{Cash dividends}}{\text{Net income}}$	Measures percentage of earnings distributed in the form of cash dividends.
Solvency Ratios		
12. Debt to total assets ratio	$\frac{\text{Total debt}}{\text{Total assets}}$	Measures the percentage of total assets provided by creditors.
13. Times interest earned	$\frac{\text{Income before income taxes and interest expense}}{\text{Interest expense}}$	Measures ability to meet interest payments as they come due.

DO IT!

RATIO ANALYSIS

The condensed financial statements of John Cully Company, for the years ended June 30, 2010 and 2009, are presented below.

JOHN CULLY COMPANY
Balance Sheets
June 30

Assets	(in thousands) 2010	2009
Current assets		
Cash and cash equivalents	$ 553.3	$ 611.6
Accounts receivable (net)	776.6	664.9
Inventories	768.3	653.5
Prepaid expenses and other current assets	204.4	269.2
Total current assets	2,302.6	2,199.2
Property, plant, and equipment (net)	694.2	647.0
Investments	12.3	12.6
Intangibles and other assets	876.7	849.3
Total assets	$3,885.8	$3,708.1
Liabilities and Stockholders' Equity		
Current liabilities	$1,497.7	$1,322.0
Long-term liabilities	679.5	637.1
Stockholders' equity—common	1,708.6	1,749.0
Total liabilities and stockholders' equity	$3,885.8	$3,708.1

JOHN CULLY COMPANY
Income Statements
For the Year Ended June 30

	(in thousands) 2010	2009
Revenues	$6,336.3	$5,790.4
Costs and expenses		
Cost of goods sold	1,617.4	1,476.3
Selling and administrative expenses	4,007.6	3,679.0
Interest expense	13.9	27.1
Total costs and expenses	5,638.9	5,182.4
Income before income taxes	697.4	608.0
Income tax expense	291.3	232.6
Net income	$ 406.1	$ 375.4

Compute the following ratios for 2010 and 2009.

(a) Current ratio.
(b) Inventory turnover. (Inventory on 6/30/08 was $599.0.)
(c) Profit margin ratio.
(d) Return on assets. (Assets on 6/30/08 were $3,349.9.)
(e) Return on common stockholders' equity. (Stockholders' equity on 6/30/08 was $1,795.9.)
(f) Debt to total assets ratio.
(g) Times interest earned.

Solution

	2010	2009
(a) Current ratio:		
$2,302.6 ÷ $1,497.7 =	1.5:1	
$2,199.2 ÷ $1,322.0 =		1.7:1
(b) Inventory turnover:		
$1,617.4 ÷ [($768.3 + $653.5) ÷ 2] =	2.3 times	
$1,476.3 ÷ [($653.5 + $599.0) ÷ 2] =		2.4 times
(c) Profit margin:		
$406.1 ÷ $6,336.3	6.4%	
$375.4 ÷ $5,790.4		6.5%
(d) Return on assets:		
$406.1 ÷ [($3,885.8 + $3,708.1) ÷ 2] =	10.7%	
$375.4 ÷ [($3,708.1 + $3,349.9) ÷ 2] =		10.6%
(e) Return on common stockholders' equity:		
$406.1 ÷ [($1,708.6 + $1,749.0) ÷ 2] =	23.5%	
$375.4 ÷ [($1,749.0 + $1,795.9) ÷ 2] =		21.2%
(f) Debt to total assets ratio:		
($1,497.7 + $679.5) ÷ $3,885.8 =	56.0%	
($1,322.0 + $637.1) ÷ $3,708.1 =		52.8%
(g) Times interest earned:		
($406.1 + $291.3 + $13.9) ÷ $13.9 =	51.2 times	
($375.4 + $232.6 + $27.1) ÷ $27.1 =		23.4 times

action plan

- ✔ Remember that the current ratio includes all current assets. The acid-test ratio uses only cash, short-term investments, and net receivables.
- ✔ Use average balances for turnover ratios like inventory, receivables, and assets.

Related exercise material: **BE18-9, BE18-10, BE18-12, BE18-13, E18-5, E18-7, E18-8, E18-9, E18-11,** and **DO IT! 18-2.**

The Navigator

EARNING POWER AND IRREGULAR ITEMS

STUDY OBJECTIVE 6

Understand the concept of earning power, and how irregular items are presented.

Users of financial statements are interested in the concept of earning power. **Earning power** means the normal level of income to be obtained in the future. Earning power differs from actual net income by the amount of irregular revenues, expenses, gains, and losses. Users are interested in earning power because it helps them derive an estimate of future earnings without the "noise" of irregular items.

For users of financial statements to determine earning power or regular income, the "irregular" items are separately identified on the income statement. Companies report two types of "irregular" items.

1. Discontinued operations.
2. Extraordinary items.

These "irregular" items are reported net of income taxes. That is, the income statement first reports income tax on the income before "irregular" items. Then the amount of tax for each of the listed "irregular" items is computed. The general concept is "let the tax follow income or loss."

Discontinued Operations

Discontinued operations refers to the disposal of a **significant component** of a business. Examples involve stopping an entire activity or eliminating a major class of customers. For example, Kmart reported as discontinued operations its decision to terminate its interest in four business activities, including PACE Membership Warehouse and PayLess Drug Stores Northwest.

Following the disposal of a significant component, the company should report on its income statement both income from continuing operations and income (or loss) from discontinued operations. **The income (loss) from discontinued operations consists of two parts: the income (loss) from operations** and **the gain (loss) on disposal of the segment**.

To illustrate, assume that during 2010 Acro Energy Inc. has income before income taxes of $800,000. During 2010 Acro discontinued and sold its unprofitable chemical division. The loss in 2010 from chemical operations (net of $60,000 taxes) was $140,000. The loss on disposal of the chemical division (net of $30,000 taxes) was $70,000. Assuming a 30% tax rate on income, Illustration 18-28 shows Acro's income statement presentation.

Illustration 18-28
Statement presentation of discontinued operations

HELPFUL HINT

Observe the dual disclosures: (1) The results of operations of the discontinued division must be eliminated from the results of continuing operations. (2) The company must also report the disposal of the operation.

ACRO ENERGY INC.
Income Statement (partial)
For the Year Ended December 31, 2010

Income before income taxes		$800,000
Income tax expense		240,000
Income from continuing operations		560,000
Discontinued operations		
Loss from operations of chemical division, net of $60,000 income tax saving	**$140,000**	
Loss from disposal of chemical division, net of $30,000 income tax saving	**70,000**	**210,000**
Net income		$350,000

Note that the statement uses the caption "Income from continuing operations," and adds a new section "Discontinued operations". **The new section reports both the operating loss and the loss on disposal net of applicable income taxes.** This presentation clearly indicates the separate effects of continuing operations and discontinued operations on net income.

Extraordinary Items

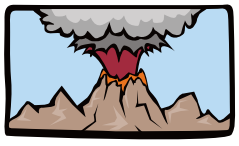
Extraordinary items are events and transactions that meet two conditions: They are (1) **unusual in nature,** and (2) **infrequent in occurrence**. To be *unusual*, the item should be abnormal and only incidentally related to the company's customary activities. To be *infrequent*, the item should not be reasonably expected to recur in the foreseeable future.

A company must evaluate both criteria in terms of its operating environment. Thus, Weyerhaeuser Co. reported the $36 million in damages to its timberland caused by the volcanic eruption of Mount St. Helens as an extraordinary item. The eruption was both unusual and infrequent. In contrast, Florida Citrus Company does not report frost damage to its citrus crop as an extraordinary item, because frost damage is not infrequent. Illustration 18-29 (next page) shows the classification of extraordinary and ordinary items.

Companies report extraordinary items net of taxes in a separate section of the income statement, immediately below discontinued operations. To illustrate, assume that in 2010 a foreign government expropriated property held as an investment by Acro Energy Inc. If the loss is $70,000 before applicable income taxes of $21,000, the income statement will report a deduction of $49,000, as shown in

Extraordinary items

1. Effects of major natural casualties, if rare in the area.

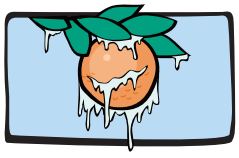


2. Expropriation (takeover) of property by a foreign government.

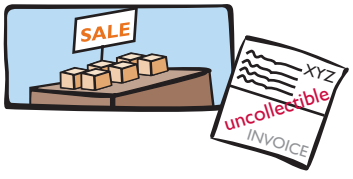
3. Effects of a newly enacted law or regulation, such as a property condemnation action.

Ordinary items

1. Effects of major natural casualties, not uncommon in the area.



2. Write-down of inventories or write-off of receivables.



3. Losses attributable to labor strikes.

4. Gains or losses from sales of property, plant, or equipment.

Illustration 18-29
Examples of extraordinary and ordinary items

Illustration 18-30. When there is an extraordinary item to report, the company adds the caption "Income before extraordinary item" immediately before the section for the extraordinary item. This presentation clearly indicates the effect of the extraordinary item on net income.

ACRO ENERGY INC.
Income Statement (partial)
For the Year Ended December 31, 2010

Income before income taxes		$800,000
Income tax expense		240,000
Income from continuing operations		560,000
Discontinued operations		
Loss from operations of chemical division, net of $60,000 income tax saving	$140,000	
Loss from disposal of chemical division, net of $30,000 income tax saving	70,000	210,000
Income before extraordinary item		350,000
Extraordinary item		
Expropriation of investment, net of $21,000 income tax saving		**49,000**
Net income		$301,000

Illustration 18-30
Statement presentation of extraordinary items

HELPFUL HINT
If there are no discontinued operations, the third line of the income statement would be labeled "Income before extraordinary item."

What if a transaction or event meets one (but not both) of the criteria for an extraordinary item? In that case the company reports it under either "Other revenues and gains" or "Other expenses and losses" at its gross amount (not net of tax). This is true, for example, of gains (losses) resulting from the sale of property, plant, and equipment, as explained in Chapter 10. It is quite common for companies to use the label "Non-recurring charges" for losses that do not meet the extraordinary item criteria.

INVESTOR INSIGHT

What Does "Non-Recurring" Really Mean?

Many companies incur restructuring charges as they attempt to reduce costs. They often label these items in the income statement as "non-recurring" charges to suggest that they are isolated events which are unlikely to occur in future periods. The question for analysts is, are these costs really one-time, "non-recurring" events, or do they reflect problems that the company will be facing for many periods in the future? If they are one-time events, they can be largely ignored when trying to predict future earnings.

But some companies report "one-time" restructuring charges over and over again. For example, toothpaste and other consumer-goods giant Procter & Gamble Co. reported a restructuring charge in 12 consecutive quarters. Motorola had "special" charges in 14-consecutive quarters. On the other hand, other companies have a restructuring charge only once in a five- or ten-year period. There appears to be no substitute for careful analysis of the numbers that comprise net income.

If a company takes a large restructuring charge, what is the effect on the company's current income statement versus future ones?

Changes in Accounting Principle

ETHICS NOTE

Changes in accounting principle should result in financial statements that are more informative for statement users. They should *not* be used to artificially improve the reported performance or financial position of the corporation.

For ease of comparison, users of financial statements expect companies to prepare such statements on a basis **consistent** with the preceding period. A **change in accounting principle** occurs when the principle used in the current year is different from the one used in the preceding year. Accounting rules permit a change when management can show that the new principle is preferable to the old principle. An example is a change in inventory costing methods (such as FIFO to average cost).

Companies report most changes in accounting principle retroactively. That is, they report both the current period and previous periods using the new principle. As a result the same principle applies in all periods. This treatment improves the ability to compare results across years.

Comprehensive Income

The income statement reports most revenues, expenses, gains, and losses recognized during the period. However, over time, specific exceptions to this general practice have developed. Certain items now bypass income and are reported directly in stockholders' equity.

For example, in Chapter 16 you learned that companies do not include in income any unrealized gains and losses on available-for-sale securities. Instead, they report such gains and losses in the balance sheet as adjustments to stockholders' equity. Why are these gains and losses on available-for-sale securities excluded from net income? Because disclosing them separately (1) reduces the

volatility of net income due to fluctuations in fair value, yet (2) informs the financial statement user of the gain or loss that would be incurred if the securities were sold at fair value.

Many analysts have expressed concern over the significant increase in the number of items that bypass the income statement. They feel that such reporting has reduced the usefulness of the income statement. To address this concern, in addition to reporting net income, a company must also report comprehensive income. **Comprehensive income** includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders. A number of alternative formats for reporting comprehensive income are allowed. These formats are discussed in advanced accounting courses.

DO IT!

IRREGULAR ITEMS

In its proposed 2010 income statement, AIR Corporation reports income before income taxes $400,000, extraordinary loss due to earthquake $100,000, income taxes $120,000 (not including irregular items), loss on operation of discontinued flower division $50,000, and loss on disposal of discontinued flower division $90,000. The income tax rate is 30%. Prepare a correct income statement, beginning with "Income before income taxes."

action plan

- ✔ Recall that a loss is extraordinary if it is both unusual and infrequent.
- ✔ Disclose the income tax effect of each component of income, beginning with income before any irregular items.
- ✔ Show discontinued operations before extraordinary items.

Solution

AIR CORPORATION
Income Statement (partial)
For the Year Ended December 31, 2010

Income before income taxes		$400,000
Income tax expense		120,000
Income from continuing operations		280,000
Discontinued operations		
Loss from operation of flower division, net of $15,000 tax saving	$35,000	
Loss on disposal of flower division, net of $27,000 tax saving	63,000	98,000
Income before extraordinary item		182,000
Extraordinary earthquake loss, net of $30,000 tax saving		70,000
Net income		$112,000

Related exercise material: **BE18-14, BE18-15, E18-12, E18-13,** and **DO IT! 18-3.**

The Navigator

QUALITY OF EARNINGS

STUDY OBJECTIVE 7
Understand the concept of quality of earnings.

In evaluating the financial performance of a company, the quality of a company's earnings is of extreme importance to analysts. A company that has a high **quality of earnings** provides full and transparent information that will not confuse or mislead users of the financial statements.

The issue of quality of earnings has taken on increasing importance because recent accounting scandals suggest that some companies are spending too much time managing their income and not enough time managing their business. Here are some of the factors affecting quality of earnings.

Alternative Accounting Methods

Variations among companies in the application of generally accepted accounting principles may hamper comparability and reduce quality of earnings. For example, one company may use the FIFO method of inventory costing, while another company in the same industry may use LIFO. If inventory is a significant asset to both companies, it is unlikely that their current ratios are comparable. For example, if General Motors Corporation had used FIFO instead of LIFO for inventory valuation, its inventories in a recent year would have been 26% higher, which significantly affects the current ratio (and other ratios as well).

In addition to differences in inventory costing methods, differences also exist in reporting such items as depreciation, depletion, and amortization. Although these differences in accounting methods might be detectable from reading the notes to the financial statements, adjusting the financial data to compensate for the different methods is often difficult, if not impossible.

Pro Forma Income

Companies whose stock is publicly traded are required to present their income statement following generally accepted accounting principles (GAAP). In recent years, many companies have also reported a second measure of income, called pro forma income. **Pro forma income** usually excludes items that the company thinks are unusual or nonrecurring. For example, at one time, Cisco Systems (a high-tech company) reported a quarterly net loss under GAAP of $2.7 billion. Cisco reported pro forma income for the same quarter as a profit of $230 million. This large difference in profits between GAAP income numbers and pro forma income is not unusual these days. For example, during one 9-month period the 100 largest firms on the Nasdaq stock exchange reported a total pro forma income of $19.1 billion, but a total loss as measured by GAAP of $82.3 billion—a difference of about $100 billion!

To compute pro forma income, companies generally can exclude any items they deem inappropriate for measuring their performance. Many analysts and investors are critical of the practice of using pro forma income because these numbers often make companies look better than they really are. As the financial press noted, pro forma numbers might be called EBS, which stands for "earnings before bad stuff." Companies, on the other hand, argue that pro forma numbers more clearly indicate sustainable income because they exclude unusual and nonrecurring expenses. "Cisco's technique gives readers of financial statements a clear picture of Cisco's normal business activities," the company said in a statement issued in response to questions about its pro forma income accounting.

The SEC has provided some guidance on how companies should present pro forma information. Stay tuned: Everyone seems to agree that pro forma numbers can be useful if they provide insights into determining a company's sustainable income. However, many companies have abused the flexibility that pro forma numbers allow and have used the measure as a way to put their companies in a good light.

Improper Recognition

Because some managers have felt pressure from Wall Street to continually increase earnings, they have manipulated the earnings numbers to meet these expectations. The most common abuse is the improper recognition of revenue. One practice that companies are using is *channel stuffing*: Offering deep discounts on their products to customers, companies encourage their customers to buy early (stuff the channel) rather than later. This lets the company report good earnings in the current period, but it often leads to a disaster in subsequent periods because customers have no need for additional goods. To illustrate, Bristol-Myers Squibb at one time indicated

that it used sales incentives to encourage wholesalers to buy more drugs than needed to meet patients' demands. As a result, the company had to issue revised financial statements showing corrected revenues and income.

Another practice is the improper capitalization of operating expenses. The classic case is WorldCom. It capitalized over $7 billion dollars of operating expenses so that it would report positive net income. In other situations, companies fail to report all their liabilities. Enron had promised to make payments on certain contracts if financial difficulty developed, but these guarantees were not reported as liabilities. In addition, disclosure was so lacking in transparency that it was impossible to understand what was happening at the company.

DO IT!

QUALITY OF EARNINGS, FINANCIAL STATEMENT ANALYSIS

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

Comprehensive income	Vertical analysis
Quality of earnings	Pro forma income
Solvency ratio	Extraordinary item

1. _____ Measures the ability of the company to survive over a long period of time.
2. _____ Usually excludes items that a company thinks are unusual or non-recurring.
3. _____ Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders.
4. _____ Indicates the level of full and transparent information provided to users of the financial statements.
5. _____ Describes events and transactions that are unusual in nature and infrequent in occurrence.
6. _____ Expresses each item within a financial statement as a percent of a base amount.

action plan

- ✔ Develop a sound understanding of basic methods used for financial reporting.
- ✔ Understand the use of fundamental analysis techniques.

Solution

1. Solvency ratio: Measures the ability of the company to survive over a long period of time.
2. Pro forma income: Usually excludes items that a company thinks are unusual or non-recurring.
3. Comprehensive income: Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders.
4. Quality of earnings: Indicates the level of full and transparent information provided to users of the financial statements.
5. Extraordinary item: Describes events and transactions that are unusual in nature and infrequent in occurrence.
6. Vertical analysis: Expresses each item within a financial statement as a percent of a base amount.

Related exercise material: DO IT! 18-4.

The Navigator

Comprehensive DO IT!

The events and transactions of Dever Corporation for the year ending December 31, 2010, resulted in the following data.

Cost of goods sold	$2,600,000
Net sales	4,400,000
Other expenses and losses	9,600
Other revenues and gains	5,600
Selling and administrative expenses	1,100,000
Income from operations of plastics division	70,000
Gain from disposal of plastics division	500,000
Loss from tornado disaster (extraordinary loss)	600,000

Analysis reveals that:

1. All items are before the applicable income tax rate of 30%.
2. The plastics division was sold on July 1.
3. All operating data for the plastics division have been segregated.

Instructions

Prepare an income statement for the year.

action plan

- ✔ Report material items not typical of continuing operations in separate sections, net of taxes.
- ✔ Associate income taxes with the item that affects the taxes.
- ✔ Apply the corporate tax rate to income before income taxes to determine tax expense.
- ✔ Recall that all data presented in determining income before income taxes are the same as for unincorporated companies.

Solution to Comprehensive DO IT!

DEVER CORPORATION
Income Statement
For the Year Ended December 31, 2010

Net sales		$4,400,000
Cost of goods sold		2,600,000
Gross profit		1,800,000
Selling and administrative expenses		1,100,000
Income from operations		700,000
Other revenues and gains	$5,600	
Other expenses and losses	9,600	4,000
Income before income taxes		696,000
Income tax expense ($696,000 × 30%)		208,800
Income from continuing operations		487,200
Discontinued operations		
Income from operations of plastics division, net of $21,000 income taxes ($70,000 × 30%)	49,000	
Gain from disposal of plastics division, net of $150,000 income taxes ($500,000 × 30%)	350,000	399,000
Income before extraordinary item		886,200
Extraordinary item		
Tornado loss, net of $180,000 income tax saving ($600,000 × 30%)		420,000
Net income		$ 466,200

The Navigator

SUMMARY OF STUDY OBJECTIVES

1 **Discuss the need for comparative analysis.** There are three bases of comparison: (1) Intracompany, which compares an item or financial relationship with other data within a company. (2) Industry, which compares company data with industry averages. (3) Intercompany, which compares an item or financial relationship of a company with data of one or more competing companies.

2 **Identify the tools of financial statement analysis.** Financial statements can be analyzed horizontally, vertically, and with ratios.

3 **Explain and apply horizontal analysis.** Horizontal analysis is a technique for evaluating a series of data over a period of time to determine the increase or decrease that has taken place, expressed as either an amount or a percentage.

4 **Describe and apply vertical analysis.** Vertical analysis is a technique that expresses each item within a financial statement in terms of a percentage of a relevant total or a base amount.

5 **Identify and compute ratios used in analyzing a firm's liquidity, profitability, and solvency.** The formula and purpose of each ratio was presented in Illustration 18-27 (page 809).

6 **Understand the concept of earning power, and how irregular items are presented.** Earning power refers to a company's ability to sustain its profits from operations. "Irregular items"—discontinued operations and extraordinary items—are presented net of tax below income from continuing operations to highlight their unusual nature.

7 **Understand the concept of quality of earnings.** A high quality of earnings provides full and transparent information that will not confuse or mislead users of the financial statements. Issues related to quality of earnings are (1) alternative accounting methods, (2) pro forma income, and (3) improper recognition.

The Navigator

GLOSSARY

Acid-test (quick) ratio A measure of a company's immediate short-term liquidity; computed by dividing the sum of cash, short-term investments, and net receivables by current liabilities. (p. 801).

Asset turnover A measure of how efficiently a company uses its assets to generate sales; computed by dividing net sales by average assets. (p. 804).

Change in accounting principle The use of a principle in the current year that is different from the one used in the preceding year. (p. 814).

Comprehensive income Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders. (p. 815).

Current ratio A measure used to evaluate a company's liquidity and short-term debt-paying ability; computed by dividing current assets by current liabilities. (p. 800).

Debt to total assets ratio Measures the percentage of total assets provided by creditors; computed by dividing total debt by total assets. (p. 807).

Discontinued operations The disposal of a significant segment of a business. (p. 811).

Earnings per share (EPS) The net income earned on each share of common stock; computed by dividing net income minus preferred dividends (if any) by the number of weighted average common shares outstanding. (p. 806).

Extraordinary items Events and transactions that are unusual in nature and infrequent in occurrence. (p. 812).

Horizontal analysis A technique for evaluating a series of financial statement data over a period of time, to determine the increase (decrease) that has taken place, expressed as either an amount or a percentage. (p. 793).

Inventory turnover A measure of the liquidity of inventory; computed by dividing cost of goods sold by average inventory. (p. 802).

Leveraging See Trading on the equity. (p. 805).

Liquidity ratios Measures of the short-term ability of the enterprise to pay its maturing obligations and to meet unexpected needs for cash. (p. 800).

Payout ratio Measures the percentage of earnings distributed in the form of cash dividends; computed by dividing cash dividends by net income. (p. 807).

Price-earnings (P-E) ratio Measures the ratio of the market price of each share of common stock to the earnings per share; computed by dividing the market price of the stock by earnings per share. (p. 806).

Profit margin Measures the percentage of each dollar of sales that results in net income; computed by dividing net income by net sales. (p. 803).

Profitability ratios Measures of the income or operating success of an enterprise for a given period of time. (p. 803).

Pro forma income A measure of income that usually excludes items that a company thinks are unusual or nonrecurring. (p. 816).

Quality of earnings Indicates the level of full and transparent information provided to users of the financial statements. (p. 815).

Ratio An expression of the mathematical relationship between one quantity and another. The relationship may be expressed either as a percentage, a rate, or a simple proportion. (p. 799).

Ratio analysis A technique for evaluating financial statements that expresses the relationship between selected financial statement data. (p. 799).

Receivables turnover A measure of the liquidity of receivables; computed by dividing net credit sales by average net receivables. (p. 802).

Return on assets An overall measure of profitability; computed by dividing net income by average assets. (p. 804).

Return on common stockholders' equity Measures the dollars of net income earned for each dollar invested by the owners; computed by dividing net income minus preferred dividends (if any) by average common stockholders' equity. (p. 805).

Solvency ratios Measures of the ability of the enterprise to survive over a long period of time. (p. 807).

Times interest earned Measures a company's ability to meet interest payments as they come due; computed by dividing income before interest expense and income taxes by interest expense. (p. 808).

Trading on the equity Borrowing money at a lower rate of interest than can be earned by using the borrowed money. (p. 805).

Vertical analysis A technique for evaluating financial statement data that expresses each item within a financial statement as a percent of a base amount. (p. 797).

SELF-STUDY QUESTIONS

Answers are at the end of the chapter.

(SO 1) **1.** Comparisons of data within a company are an example of the following comparative basis:
a. Industry averages.
b. Intracompany.
c. Intercompany.
d. Both (b) and (c).

(SO 3) **2.** In horizontal analysis, each item is expressed as a percentage of the:
a. net income amount.
b. stockholders' equity amount.
c. total assets amount.
d. base year amount.

(SO 4) **3.** In vertical analysis, the base amount for depreciation expense is generally:
a. net sales.
b. depreciation expense in a previous year.
c. gross profit.
d. fixed assets.

(SO 4) **4.** The following schedule is a display of what type of analysis?

	Amount	Percent
Current assets	$200,000	25%
Property, plant, and equipment	600,000	75%
Total assets	$800,000	

a. Horizontal analysis.
b. Differential analysis.
c. Vertical analysis.
d. Ratio analysis.

(SO 3) **5.** Sammy Corporation reported net sales of $300,000, $330,000, and $360,000 in the years, 2008, 2009, and 2010, respectively. If 2008 is the base year, what is the trend percentage for 2010?
a. 77%.
b. 108%.
c. 120%.
d. 130%.

(SO 5) **6.** Which of the following measures is an evaluation of a firm's ability to pay current liabilities?
a. Acid-test ratio.
b. Current ratio.
c. Both (a) and (b).
d. None of the above.

(SO 5) **7.** A measure useful in evaluating the efficiency in managing inventories is:
a. inventory turnover.
b. average days to sell inventory.
c. Both (a) and (b).
d. None of the above.

Use the following financial statement information as of the end of each year to answer Self-Study Questions 8–12.

	2010	2009
Inventory	$ 54,000	$ 48,000
Current assets	81,000	106,000
Total assets	382,000	326,000
Current liabilities	27,000	36,000
Total liabilities	102,000	88,000
Stockholders' equity	280,000	238,000
Net sales	784,000	697,000
Cost of goods sold	306,000	277,000
Net income	134,000	90,000
Tax expense	22,000	18,000
Interest expense	12,000	12,000
Dividends paid to preferred stockholders	20,000	20,000
Dividends paid to common stockholders	15,000	10,000

(SO 5) **8.** Compute the days in inventory for 2010.
a. 64.4 days.
b. 60.8 days.
c. 6 days.
d. 24 days.

(SO 5) **9.** Compute the current ratio for 2010.
a. 1.26:1.
b. 3.0:1.
c. .80:1.
d. 3.75:1.

(SO 5) **10.** Compute the profit margin ratio for 2010.
a. 17.1%.
b. 18.1%.
c. 37.9%.
d. 5.9%.

(SO 5) **11.** Compute the return on common stockholders' equity for 2010.
a. 47.9%.
b. 51.7%.

c. 40.7%.
d. 44.0%.

(SO 5) **12.** Compute the times interest earned for 2010.
a. 11.2 times.
b. 65.3 times.
c. 14.0 times.
d. 13.0 times.

(SO 6) **13.** In reporting discontinued operations, the income statement should show in a special section:
a. gains and losses on the disposal of the discontinued segment.
b. gains and losses from operations of the discontinued segment.
c. Both (a) and (b).
d. Neither (a) nor (b).

(SO 6) **14.** Scout Corporation has income before taxes of $400,000 and an extraordinary loss of $100,000. If the income tax rate is 25% on all items, the income statement should show income before extraordinary items and extraordinary items, respectively, of:
a. $325,000 and $100,000.
b. $325,000 and $75,000.
c. $300,000 and $100,000
d. $300,000 and $75,000.

15. Which situation below might indicate a company has a low quality of earnings? (SO 7)
a. The same accounting principles are used each year.
b. Revenue is recognized when earned.
c. Maintenance costs are expensed as incurred.
d. The company is continually reporting pro forma income numbers.

Go to the book's companion website, **www.wiley.com/college/weygandt**, for Additional Self-Study questions.

The Navigator

QUESTIONS

1. (a) Juan Marichal believes that the analysis of financial statements is directed at two characteristics of a company: liquidity and profitability. Is Juan correct? Explain.
(b) Are short-term creditors, long-term creditors, and stockholders interested primarily in the same characteristics of a company? Explain.

2. (a) Distinguish among the following bases of comparison: (1) intracompany, (2) industry averages, and (3) intercompany.
(b) Give the principal value of using each of the three bases of comparison.

3. Two popular methods of financial statement analysis are horizontal analysis and vertical analysis. Explain the difference between these two methods.

4. (a) If Leonard Company had net income of $360,000 in 2010 and it experienced a 24.5% increase in net income for 2011, what is its net income for 2011?
(b) If six cents of every dollar of Leonard revenue is net income in 2010, what is the dollar amount of 2010 revenue?

5. What is a ratio? What are the different ways of expressing the relationship of two amounts? What information does a ratio provide?

6. Name the major ratios useful in assessing (a) liquidity and (b) solvency.

7. Raphael Ochoa is puzzled. His company had a profit margin of 10% in 2010. He feels that this is an indication that the company is doing well. Cindy Lore, his accountant, says that more information is needed to determine the firm's financial well-being. Who is correct? Why?

8. What do the following classes of ratios measure? (a) Liquidity ratios. (b) Profitability ratios. (c) Solvency ratios.

9. What is the difference between the current ratio and the acid-test ratio?

10. Donte Company, a retail store, has a receivables turnover of 4.5 times. The industry average is 12.5 times. Does Donte have a collection problem with its receivables?

11. Which ratios should be used to help answer the following questions?
(a) How efficient is a company in using its assets to produce sales?
(b) How near to sale is the inventory on hand?
(c) How many dollars of net income were earned for each dollar invested by the owners?
(d) How able is a company to meet interest charges as they fall due?

12. The price-earnings ratio of General Motors (automobile builder) was 8, and the price-earnings ratio of Microsoft (computer software) was 38. Which company did the stock market favor? Explain.

13. What is the formula for computing the payout ratio? Would you expect this ratio to be high or low for a growth company?

14. Holding all other factors constant, indicate whether each of the following changes generally signals good or bad news about a company.
(a) Increase in profit margin.
(b) Decrease in inventory turnover.
(c) Increase in the current ratio.
(d) Decrease in earnings per share.
(e) Increase in price-earnings ratio.
(f) Increase in debt to total assets ratio.
(g) Decrease in times interest earned.

15. The return on assets for Tresh Corporation is 7.6%. During the same year Tresh's return on common stockholders' equity is 12.8%. What is the explanation for the difference in the two rates?

16. Which two ratios do you think should be of greatest interest to:
    (a) A pension fund considering the purchase of 20-year bonds?
    (b) A bank contemplating a short-term loan?
    (c) A common stockholder?
17. Why must preferred stock dividends be subtracted from net income in computing earnings per share?
18. (a) What is meant by trading on the equity?
    (b) How would you determine the profitability of trading on the equity?
19. Hillman Inc. has net income of $160,000, weighted average shares of common stock outstanding of 50,000, and preferred dividends for the period of $40,000. What is Hillman's earnings per share of common stock? Kate Hillman, the president of Hillman Inc., believes the computed EPS of the company is high. Comment.
20. Why is it important to report discontinued operations separately from income from continuing operations?
21. You are considering investing in Shawnee Transportation. The company reports 2010 earnings per share of $6.50 on income before extraordinary items and $4.75 on net income. Which EPS figure would you consider more relevant to your investment decision? Why?
22. STL Inc. reported 2009 earnings per share of $3.20 and had no extraordinary items. In 2010, EPS on income before extraordinary items was $2.99, and EPS on net income was $3.49. Is this a favorable trend?
23. Indicate which of the following items would be reported as an extraordinary item in Mordica Corporation's income statement.
    (a) Loss from damages caused by volcano eruption.
    (b) Loss from sale of temporary investments.
    (c) Loss attributable to a labor strike.
    (d) Loss caused when manufacture of a product was prohibited by the Food and Drug Administration.
    (e) Loss from flood damage. (The nearby Black River floods every 2 to 3 years.)
    (f) Write-down of obsolete inventory.
    (g) Expropriation of a factory by a foreign government.
24. Identify and explain factors that affect quality of earnings.
25. PEPSICO Identify the specific sections in PepsiCo's 2007 annual report where horizontal and vertical analyses of financial data are presented.

BRIEF EXERCISES

WILEY PLUS

Follow the rounding procedures used in the chapter.

Discuss need for comparative analysis.
(SO 1)

BE18-1 You recently received a letter from your Uncle Frank. A portion of the letter is presented below.

You know that I have a significant amount of money I saved over the years. I am thinking about starting an investment program. I want to do the investing myself, based on my own research and analysis of financial statements. I know that you are studying accounting, so I have a couple of questions for you. I have heard that different users of financial statements are interested in different characteristics of companies. Is this true, and, if so, why? Also, some of my friends, who are already investing, have told me that comparisons involving a company's financial data can be made on a number of different bases. Can you explain these bases to me?

Instructions

Write a letter to your Uncle Frank which answers his questions.

Identify and use tools of financial statement analysis.
(SO 2, 3, 4, 5)

BE18-2 Drew Carey Corporation reported the following amounts in 2009, 2010, and 2011.

	2009	2010	2011
Current assets	$200,000	$230,000	$240,000
Current liabilities	$160,000	$168,000	$184,000
Total assets	$500,000	$600,000	$620,000

Instructions

(a) Identify and describe the three tools of financial statement analysis. **(b)** Perform each of the three types of analysis on Drew Carey's current assets.

Prepare horizontal analysis.
(SO 3)

BE18-3 Using the following data from the comparative balance sheet of Rodenbeck Company, illustrate horizontal analysis.

	December 31, 2011	December 31, 2010
Accounts receivable	$ 520,000	$ 400,000
Inventory	$ 840,000	$ 600,000
Total assets	$ 3,000,000	$2,500,000

BE18-4 Using the same data presented above in BE18-3 for Rodenbeck Company, illustrate vertical analysis. *Prepare vertical analysis.* (SO 4)

BE18-5 Net income was $500,000 in 2009, $450,000 in 2010, and $522,000 in 2011. What is the percentage of change from **(a)** 2009 to 2010 and **(b)** 2010 to 2011? Is the change an increase or a decrease? *Calculate percentage of change.* (SO 3)

BE18-6 If Soule Company had net income of $585,000 in 2011 and it experienced a 30% increase in net income over 2010, what was its 2010 net income? *Calculate net income.* (SO 3)

BE18-7 Horizontal analysis (trend analysis) percentages for Epstein Company's sales, cost of goods sold, and expenses are shown below. *Calculate change in net income.* (SO 3)

Horizontal Analysis	2011	2010	2009
Sales	96.2	106.8	100.0
Cost of goods sold	102.0	97.0	100.0
Expenses	109.6	98.4	100.0

Did Epstein's net income increase, decrease, or remain unchanged over the 3-year period?

BE18-8 Vertical analysis (common size) percentages for Charles Company's sales, cost of goods sold, and expenses are shown below. *Calculate change in net income.* (SO 4)

Vertical Analysis	2011	2010	2009
Sales	100.0	100.0	100.0
Cost of goods sold	59.2	62.4	64.5
Expenses	25.0	25.6	27.5

Did Charles's net income as a percent of sales increase, decrease, or remain unchanged over the 3-year period? Provide numerical support for your answer.

BE18-9 Selected condensed data taken from a recent balance sheet of Perkins Inc. are as follows. *Calculate liquidity ratios.* (SO 5)

PERKINS INC.
Balance Sheet (partial)

Cash	$ 8,041,000
Short-term investments	4,947,000
Accounts receivable	12,545,000
Inventories	14,814,000
Other current assets	5,571,000
Total current assets	$45,918,000
Total current liabilities	$40,644,000

What are the **(a)** working capital, **(b)** current ratio, and **(c)** acid-test ratio?

BE18-10 McLaren Corporation has net income of $11.44 million and net revenue of $80 million in 2010. Its assets are $14 million at the beginning of the year and $18 million at the end of the year. What are McLaren's **(a)** asset turnover and **(b)** profit margin? *Calculate profitability ratios.* (SO 5)

BE18-11 The following data are taken from the financial statements of Morino Company. *Evaluate collection of accounts receivable.* (SO 5)

	2011	2010
Accounts receivable (net), end of year	$ 550,000	$ 520,000
Net sales on account	3,960,000	3,100,000

Terms for all sales are 1/10, n/60.

(a) Compute for each year (1) the receivables turnover and (2) the average collection period. At the end of 2009, accounts receivable (net) was $480,000.

(b) What conclusions about the management of accounts receivable can be drawn from these data?

Evaluate management of inventory. (SO 5)

BE18-12 The following data are from the income statements of Huntsinger Company.

	2011	2010
Sales	$6,420,000	$6,240,000
Beginning inventory	980,000	860,000
Purchases	4,340,000	4,661,000
Ending inventory	1,020,000	980,000

(a) Compute for each year (1) the inventory turnover and (2) the average days to sell the inventory. **(b)** What conclusions concerning the management of the inventory can be drawn from these data?

Calculate profitability ratios. (SO 5)

BE18-13 Gladow Company has owners' equity of $400,000 and net income of $66,000. It has a payout ratio of 20% and a rate of return on assets of 15%. How much did Gladow pay in cash dividends, and what were its average assets?

Prepare income statement including extraordinary items. (SO 6)

BE18-14 An inexperienced accountant for Ming Corporation showed the following in the income statement: income before income taxes and extraordinary item $400,000, and extraordinary loss from flood (before taxes) $70,000. The extraordinary loss and taxable income are both subject to a 30% tax rate. Prepare a correct income statement.

Prepare discontinued operations section of income statement. (SO 6)

BE18-15 On June 30, Reeves Corporation discontinued its operations in Mexico. During the year, the operating loss was $300,000 before taxes. On September 1, Reeves disposed of the Mexico facility at a pretax loss of $120,000. The applicable tax rate is 30%. Show the discontinued operations section of the income statement.

DO IT! REVIEW

Prepare horizontal analysis. (SO 3)

DO IT! 18-1 Summary financial information for Holland Company is as follows.

	December 31, 2011	December 31, 2010
Current assets	$ 199,000	$ 220,000
Plant assets	821,000	780,000
Total assets	$1,020,000	$1,000,000

Compute the amount and percentage changes in 2011 using horizontal analysis, assuming 2010 is the base year.

Compute ratios. (SO 5)

DO IT! 18-2 The condensed financial statements of Eau Fraîche Company for the years 2009 and 2010 are presented below.

EAU FRAÎCHE COMPANY
Balance Sheets
December 31

	2010	2009
Current assets		
Cash and cash equivalents	$ 330	$ 360
Accounts receivable (net)	470	400
Inventories	460	390
Prepaid expenses	120	160
Total current assets	1,380	1,310
Property, plant, and equipment	420	380
Investments	10	10
Intangibles and other assets	530	510
Total assets	$2,340	$2,210
Current liabilities	$ 900	$ 790
Long-term liabilities	410	380
Stockholders' equity—common	1,030	1,040
Total liabilities and stockholders' equity	$2,340	$2,210

EAU FRAÎCHE COMPANY
Income Statements
For the Year Ended December 31

	2010	2009
Revenues	$3,800	$3,460
Costs and expenses		
Cost of goods sold	970	890
Selling & administrative expenses	2,400	2,330
Interest expense	10	20
Total costs and expenses	3,380	3,240
Income before income taxes	420	220
Income tax expense	168	132
Net income	$ 252	$ 88

Compute the following ratios for 2010 and 2009.
(a) Current ratio.
(b) Inventory turnover. (Inventory on 12/31/08 was $340.)
(c) Profit margin ratio.
(d) Return on assets. (Assets on 12/31/08 were $1,900.)
(e) Return on common stockholders' equity. (Equity on 12/31/08 was $900.)
(f) Debt to total assets ratio.
(g) Times interest earned.

DO IT! 18-3 In its proposed 2010 income statement, Supply Corporation reports income before income taxes $500,000, extraordinary loss due to earthquake $150,000, income taxes $200,000 (not including irregular items), loss on operation of discontinued music division $60,000, and gain on disposal of discontinued music division $40,000. The income tax rate is 40%. Prepare a correct income statement, beginning with income before income taxes.

Prepare income statement, including irregular items. (SO 6)

DO IT! 18-4 Match each of the following terms with the phrase that it best matches.

Quality of earnings	Pro forma income
Current ratio	Discontinued operations
Horizontal analysis	Comprehensive income

1. _____ A measure used to evaluate a company's liquidity.
2. _____ Usually excludes items that a company thinks are unusual or nonrecurring.
3. _____ Indicates the level of full and transparent information provided to users of the financial statements.
4. _____ The disposal of a significant segment of a business.
5. _____ Determines increases or decreases in a series of financial statement data.
6. _____ Includes all changes in stockholders' equity during a period except those resulting from investments by stockholders and distributions to stockholders.

Match terms relating to quality of earnings and financial statement analysis. (SO 3, 4, 5, 6, 7)

EXERCISES

Follow the rounding procedures used in the chapter.

E18-1 Financial information for Blevins Inc. is presented below.

Prepare horizontal analysis. (SO 3)

	December 31, 2011	December 31, 2010
Current assets	$125,000	$100,000
Plant assets (net)	396,000	330,000
Current liabilities	91,000	70,000
Long-term liabilities	133,000	95,000
Common stock, $1 par	161,000	115,000
Retained earnings	136,000	150,000

Instructions
Prepare a schedule showing a horizontal analysis for 2011 using 2010 as the base year.

Prepare vertical analysis.
(SO 4)

E18-2 Operating data for Gallup Corporation are presented below.

	2011	2010
Sales	$750,000	$600,000
Cost of goods sold	465,000	390,000
Selling expenses	120,000	72,000
Administrative expenses	60,000	54,000
Income tax expense	33,000	24,000
Net income	72,000	60,000

Instructions
Prepare a schedule showing a vertical analysis for 2011 and 2010.

Prepare horizontal and vertical analyses.
(SO 3, 4)

E18-3 The comparative condensed balance sheets of Conard Corporation are presented below.

CONARD CORPORATION
Comparative Condensed Balance Sheets
December 31

	2011	2010
Assets		
Current assets	$ 74,000	$ 80,000
Property, plant, and equipment (net)	99,000	90,000
Intangibles	27,000	40,000
Total assets	$200,000	$210,000
Liabilities and stockholders' equity		
Current liabilities	$ 42,000	$ 48,000
Long-term liabilities	143,000	150,000
Stockholders' equity	15,000	12,000
Total liabilities and stockholders' equity	$200,000	$210,000

Instructions
(a) Prepare a horizontal analysis of the balance sheet data for Conard Corporation using 2010 as a base.
(b) Prepare a vertical analysis of the balance sheet data for Conard Corporation in columnar form for 2011.

Prepare horizontal and vertical analyses.
(SO 3, 4)

E18-4 The comparative condensed income statements of Hendi Corporation are shown below.

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

	2011	2010
Net sales	$600,000	$500,000
Cost of goods sold	483,000	420,000
Gross profit	117,000	80,000
Operating expenses	57,200	44,000
Net income	$ 59,800	$ 36,000

Instructions
(a) Prepare a horizontal analysis of the income statement data for Hendi Corporation using 2010 as a base. (Show the amounts of increase or decrease.)
(b) Prepare a vertical analysis of the income statement data for Hendi Corporation in columnar form for both years.

Compute liquidity ratios and compare results.
(SO 5)

E18-5 Nordstrom, Inc. operates department stores in numerous states. Selected financial statement data for the year ending February 2, 2008, are shown on the next page.

NORDSTROM, INC.
Balance Sheet (partial)

(in millions)	End-of-Year	Beginning-of-Year
Cash and cash equivalents	$ 358	$ 403
Accounts receivable (net)	1,788	684
Merchandise inventory	956	997
Prepaid expenses	78	61
Other current assets	181	597
Total current assets	$3,361	$2,742
Total current liabilities	$1,635	$1,433

For the year, net sales were $8,828, and cost of goods sold was $5,526 (in millions).

Instructions
(a) Compute the four liquidity ratios at the end of the year.
(b) Using the data in the chapter, compare Nordstrom's liquidity with (1) that of J.C. Penney Company, and (2) the industry averages for department stores.

E18-6 Leach Incorporated had the following transactions occur involving current assets and current liabilities during February 2010.

Perform current and acid-test ratio analysis.
(SO 5)

Feb.	3	Accounts receivable of $15,000 are collected.
	7	Equipment is purchased for $28,000 cash.
	11	Paid $3,000 for a 3-year insurance policy.
	14	Accounts payable of $12,000 are paid.
	18	Cash dividends of $5,000 are declared.

Additional information:

1. As of February 1, 2010, current assets were $130,000, and current liabilities were $50,000.
2. As of February 1, 2010, current assets included $15,000 of inventory and $2,000 of prepaid expenses.

Instructions
(a) Compute the current ratio as of the beginning of the month and after each transaction.
(b) Compute the acid-test ratio as of the beginning of the month and after each transaction.

E18-7 Bennis Company has the following comparative balance sheet data.

Compute selected ratios.
(SO 5)

BENNIS COMPANY
Balance Sheets
December 31

	2011	2010
Cash	$ 15,000	$ 30,000
Receivables (net)	70,000	60,000
Inventories	60,000	50,000
Plant assets (net)	200,000	180,000
	$345,000	$320,000
Accounts payable	$50,000	$60,000
Mortgage payable (15%)	100,000	100,000
Common stock, $10 par	140,000	120,000
Retained earnings	55,000	40,000
	$345,000	$320,000

Additional information for 2011:

1. Net income was $25,000.
2. Sales on account were $410,000. Sales returns and allowances were $20,000.
3. Cost of goods sold was $198,000.
4. The allowance for doubtful accounts was $2,500 on December 31, 2011, and $2,000 on December 31, 2010.

Instructions

Compute the following ratios at December 31, 2011.

(a) Current.
(b) Acid-test.
(c) Receivables turnover.
(d) Inventory turnover.

Compute selected ratios. (SO 5)

E18-8 Selected comparative statement data for Willingham Products Company are presented below. All balance sheet data are as of December 31.

	2011	2010
Net sales	$760,000	$720,000
Cost of goods sold	480,000	440,000
Interest expense	7,000	5,000
Net income	50,000	42,000
Accounts receivable	120,000	100,000
Inventory	85,000	75,000
Total assets	580,000	500,000
Total common stockholders' equity	430,000	325,000

Instructions

Compute the following ratios for 2011.

(a) Profit margin.
(b) Asset turnover.
(c) Return on assets.
(d) Return on common stockholders' equity.

Compute selected ratios. (SO 5)

E18-9 The income statement for Christensen, Inc., appears below.

CHRISTENSEN, INC.
Income Statement
For the Year Ended December 31, 2010

Sales	$400,000
Cost of goods sold	230,000
Gross profit	170,000
Expenses (including $16,000 interest and $24,000 income taxes)	105,000
Net income	$ 65,000

Additional information:

1. The weighted average common shares outstanding in 2010 were 30,000 shares.
2. The market price of Christensen, Inc. stock was $13 in 2010.
3. Cash dividends of $26,000 were paid, $5,000 of which were to preferred stockholders.

Instructions

Compute the following ratios for 2010.

(a) Earnings per share.
(b) Price-earnings.
(c) Payout.
(d) Times interest earned.

Compute amounts from ratios. (SO 5)

E18-10 Rees Corporation experienced a fire on December 31, 2011, 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, 2011	December 31, 2010
Cash	$ 30,000	$ 10,000
Receivables (net)	72,500	126,000
Inventory	200,000	180,000
Accounts payable	50,000	90,000
Notes payable	30,000	60,000
Common stock, $100 par	400,000	400,000
Retained earnings	113,500	101,000

Additional information:

1. The inventory turnover is 3.5 times.
2. The return on common stockholders' equity is 24%. The company had no additional paid-in capital.
3. The receivables turnover is 8.8 times.
4. The return on assets is 20%.
5. Total assets at December 31, 2010, were $605,000.

Instructions

Compute the following for Rees Corporation.

(a) Cost of goods sold for 2011.
(b) Net sales (credit) for 2011.
(c) Net income for 2011.
(d) Total assets at December 31, 2011.

E18-11 Scully Corporation's comparative balance sheets are presented below.

Compute ratios.
(SO 5)

SCULLY CORPORATION
Balance Sheets
December 31

	2010	2009
Cash	$ 4,300	$ 3,700
Accounts receivable	21,200	23,400
Inventory	10,000	7,000
Land	20,000	26,000
Building	70,000	70,000
Accumulated depreciation	(15,000)	(10,000)
Total	$110,500	$120,100
Accounts payable	$ 12,370	$ 31,100
Common stock	75,000	69,000
Retained earnings	23,130	20,000
Total	$110,500	$120,100

Scully's 2010 income statement included net sales of $100,000, cost of goods sold of $60,000, and net income of $15,000.

Instructions

Compute the following ratios for 2010.

(a) Current ratio.
(b) Acid-test ratio.
(c) Receivables turnover.
(d) Inventory turnover.
(e) Profit margin.
(f) Asset turnover.
(g) Return on assets.
(h) Return on common stockholders' equity.
(i) Debt to total assets ratio.

E18-12 For its fiscal year ending October 31, 2010, Molini Corporation reports the following partial data shown on the next page.

Prepare a correct income statement.
(SO 6)

Income before income taxes	$540,000
Income tax expense (30% × $390,000)	117,000
Income before extraordinary items	423,000
Extraordinary loss from flood	150,000
Net income	$273,000

The flood loss is considered an extraordinary item. The income tax rate is 30% on all items.

Instructions

(a) Prepare a correct income statement, beginning with income before income taxes.

(b) Explain in memo form why the income statement data are misleading.

Prepare income statement. (SO 6)

E18-13 Yadier Corporation has income from continuing operations of $290,000 for the year ended December 31, 2010. It also has the following items (before considering income taxes).

1. An extraordinary loss of $80,000.
2. A gain of $30,000 on the discontinuance of a division.
3. A correction of an error in last year's financial statements that resulted in a $20,000 understatement of 2009 net income.

Assume all items are subject to income taxes at a 30% tax rate.

Instructions

(a) Prepare an income statement, beginning with income from continuing operations.

(b) Indicate the statement presentation of any item not included in (a) above.

EXERCISES: SET B

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Exercise Set B.

PROBLEMS

Follow the rounding procedures used in the chapter.

Prepare vertical analysis and comment on profitability. (SO 4, 5)

P18-1 Comparative statement data for Douglas Company and Maulder Company, two competitors, appear below. All balance sheet data are as of December 31, 2011, and December 31, 2010.

	Douglas Company		Maulder Company	
	2011	2010	2011	2010
Net sales	$1,549,035		$339,038	
Cost of goods sold	1,080,490		241,000	
Operating expenses	302,275		79,000	
Interest expense	8,980		2,252	
Income tax expense	54,500		6,650	
Current assets	325,975	$312,410	83,336	$ 79,467
Plant assets (net)	521,310	500,000	139,728	125,812
Current liabilities	65,325	75,815	35,348	30,281
Long-term liabilities	108,500	90,000	29,620	25,000
Common stock, $10 par	500,000	500,000	120,000	120,000
Retained earnings	173,460	146,595	38,096	29,998

Instructions

(a) Prepare a vertical analysis of the 2011 income statement data for Douglas Company and Maulder Company in columnar form.

(b) Comment on the relative profitability of the companies by computing the return on assets and the return on common stockholders' equity ratios for both companies.

P18-2 The comparative statements of Villa Tool Company are presented below.

Compute ratios from balance sheet and income statement. (SO 5)

VILLA TOOL COMPANY
Income Statement
For the Year Ended December 31

	2011	2010
Net sales	$1,818,500	$1,750,500
Cost of goods sold	1,011,500	996,000
Gross profit	807,000	754,500
Selling and administrative expense	516,000	479,000
Income from operations	291,000	275,500
Other expenses and losses		
Interest expense	18,000	14,000
Income before income taxes	273,000	261,500
Income tax expense	81,000	77,000
Net income	$ 192,000	$ 184,500

VILLA TOOL COMPANY
Balance Sheets
December 31

Assets	2011	2010
Current assets		
Cash	$ 60,100	$ 64,200
Short-term investments	69,000	50,000
Accounts receivable (net)	117,800	102,800
Inventory	123,000	115,500
Total current assets	369,900	332,500
Plant assets (net)	600,300	520,300
Total assets	$970,200	$852,800
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$160,000	$145,400
Income taxes payable	43,500	42,000
Total current liabilities	203,500	187,400
Bonds payable	200,000	200,000
Total liabilities	403,500	387,400
Stockholders' equity		
Common stock ($5 par)	280,000	300,000
Retained earnings	286,700	165,400
Total stockholders' equity	566,700	465,400
Total liabilities and stockholders' equity	$970,200	$852,800

All sales were on account. The allowance for doubtful accounts was $3,200 on December 31, 2011, and $3,000 on December 31, 2010.

Instructions

Compute the following ratios for 2011. (Weighted average common shares in 2011 were 57,000.)

(a) Earnings per share.
(b) Return on common stockholders' equity.
(c) Return on assets.
(d) Current.
(e) Acid-test.
(f) Receivables turnover.
(g) Inventory turnover.
(h) Times interest earned.
(i) Asset turnover.
(j) Debt to total assets.

Perform ratio analysis, and evaluate financial position and operating results.

(SO 5)

P18-3 Condensed balance sheet and income statement data for Kersenbrock Corporation appear below.

KERSENBROCK CORPORATION
Balance Sheets
December 31

	2011	2010	2009
Cash	$ 25,000	$ 20,000	$ 18,000
Receivables (net)	50,000	45,000	48,000
Other current assets	90,000	95,000	64,000
Investments	75,000	70,000	45,000
Plant and equipment (net)	400,000	370,000	358,000
	$640,000	$600,000	$533,000
Current liabilities	$ 75,000	$ 80,000	$ 70,000
Long-term debt	80,000	85,000	50,000
Common stock, $10 par	340,000	310,000	300,000
Retained earnings	145,000	125,000	113,000
	$640,000	$600,000	$533,000

KERSENBROCK CORPORATION
Income Statement
For the Year Ended December 31

	2011	2010
Sales	$740,000	$700,000
Less: Sales returns and allowances	40,000	50,000
Net sales	700,000	650,000
Cost of goods sold	420,000	400,000
Gross profit	280,000	250,000
Operating expenses (including income taxes)	235,000	220,000
Net income	$ 45,000	$ 30,000

Additional information:

1. The market price of Kersenbrock's common stock was $4.00, $5.00, and $8.00 for 2009, 2010, and 2011, respectively.
2. All dividends were paid in cash.

Instructions

(a) Compute the following ratios for 2010 and 2011.
- **(1)** Profit margin.
- **(2)** Asset turnover.
- **(3)** Earnings per share. (Weighted average common shares in 2011 were 32,000 and in 2010 were 31,000.)
- **(4)** Price-earnings.
- **(5)** Payout.
- **(6)** Debt to total assets.

(b) Based on the ratios calculated, discuss briefly the improvement or lack thereof in financial position and operating results from 2010 to 2011 of Kersenbrock Corporation.

P18-4 Financial information for Hanshew Company is presented below.

Compute ratios, and comment on overall liquidity and profitability.
(SO 5)

HANSHEW COMPANY
Balance Sheets
December 31

Assets	2011	2010
Cash	$ 70,000	$ 65,000
Short-term investments	52,000	40,000
Receivables (net)	98,000	80,000
Inventories	125,000	135,000
Prepaid expenses	29,000	23,000
Land	130,000	130,000
Building and equipment (net)	180,000	175,000
	$684,000	$648,000
Liabilities and Stockholders' Equity		
Notes payable	$100,000	$100,000
Accounts payable	48,000	42,000
Accrued liabilities	50,000	40,000
Bonds payable, due 2012	150,000	150,000
Common stock, $10 par	200,000	200,000
Retained earnings	136,000	116,000
	$684,000	$648,000

HANSHEW COMPANY
Income Statement
For the Years Ended December 31

	2011	2010
Sales	$850,000	$790,000
Cost of goods sold	620,000	575,000
Gross profit	230,000	215,000
Operating expenses	187,000	173,000
Net income	$ 43,000	$ 42,000

Additional information:

1. Inventory at the beginning of 2010 was $118,000.
2. Receivables (net) at the beginning of 2010 were $88,000. The allowance for doubtful accounts was $4,000 at the end of 2011, $3,800 at the end of 2010, and $3,700 at the beginning of 2010
3. Total assets at the beginning of 2010 were $630,000.
4. No common stock transactions occurred during 2010 or 2011.
5. All sales were on account.

Instructions

(a) Indicate, by using ratios, the change in liquidity and profitability of Hanshew Company from 2010 to 2011. (*Note*: Not all profitability ratios can be computed.)

(b) Given below are three independent situations and a ratio that may be affected. For each situation, compute the affected ratio (1) as of December 31, 2011, and (2) as of December 31, 2012, after giving effect to the situation. Net income for 2012 was $50,000. Total assets on December 31, 2012, were $700,000.

Situation	Ratio
(1) 18,000 shares of common stock were sold at par on July 1, 2012.	Return on common stockholders' equity
(2) All of the notes payable were paid in 2012. The only change in liabilities was that the notes payable were paid.	Debt to total assets
(3) Market price of common stock was $9 on December 31, 2011, and $12.80 on December 31, 2012.	Price-earnings ratio

Compute selected ratios, and compare liquidity, profitability, and solvency for two companies. (SO 5)

P18-5 Selected financial data of Target and Wal-Mart for a recent year are presented here (in millions).

	Target Corporation	Wal-Mart Stores, Inc.
Income Statement Data for Year		
Net sales	$61,471	$374,526
Cost of goods sold	41,895	286,515
Selling and administrative expenses	16,200	70,847
Interest expense	647	1,798
Other income (expense)	1,896	4,273
Income tax expense	1,776	6,908
Net income	$ 2,849	$ 12,731
Balance Sheet Data (End of Year)		
Current assets	$18,906	$ 47,585
Noncurrent assets	25,654	115,929
Total assets	$44,560	$163,514
Current liabilities	$11,782	$ 58,454
Long-term debt	17,471	40,452
Total stockholders' equity	15,307	64,608
Total liabilities and stockholders' equity	$44,560	$163,514
Beginning-of-Year Balances		
Total assets	$37,349	$151,587
Total stockholders' equity	15,633	61,573
Current liabilities	11,117	52,148
Total liabilities	21,716	90,014
Other Data		
Average net receivables	$ 7,124	$ 3,247
Average inventory	6,517	34,433
Net cash provided by operating activities	4,125	20,354

Instructions

(a) For each company, compute the following ratios.

(1) Current.
(2) Receivables turnover.
(3) Average collection period.
(4) Inventory turnover.
(5) Days in inventory.
(6) Profit margin.
(7) Asset turnover.
(8) Return on assets.
(9) Return on common stockholders' equity.
(10) Debt to total assets.
(11) Times interest earned.

(b) Compare the liquidity, profitability, and solvency of the two companies.

Compute numerous ratios. (SO 5)

P18-6 The comparative statements of Dillon Company are presented below.

DILLON COMPANY
Income Statement
For Year Ended December 31

	2011	2010
Net sales (all on account)	$600,000	$520,000
Expenses		
Cost of goods sold	415,000	354,000
Selling and administrative	120,800	114,800
Interest expense	7,800	6,000
Income tax expense	18,000	14,000
Total expenses	561,600	488,800
Net income	$ 38,400	$ 31,200

DILLON COMPANY
Balance Sheets
December 31

Assets	2011	2010
Current assets		
Cash	$ 21,000	$ 18,000
Short-term investments	18,000	15,000
Accounts receivable (net)	86,000	74,000
Inventory	90,000	70,000
Total current assets	215,000	177,000
Plant assets (net)	423,000	383,000
Total assets	$638,000	$560,000
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$122,000	$110,000
Income taxes payable	23,000	20,000
Total current liabilities	145,000	130,000
Long-term liabilities		
Bonds payable	120,000	80,000
Total liabilities	265,000	210,000
Stockholders' equity		
Common stock ($5 par)	150,000	150,000
Retained earnings	223,000	200,000
Total stockholders' equity	373,000	350,000
Total liabilities and stockholders' equity	$638,000	$560,000

Additional data:

The common stock recently sold at $19.50 per share.
The year-end balance in the allowance for doubtful accounts was $3,000 for 2011 and $2,400 for 2010.

Instructions

Compute the following ratios for 2011.

(a) Current.
(b) Acid-test.
(c) Receivables turnover.
(d) Inventory turnover.
(e) Profit margin.
(f) Asset turnover.
(g) Return on assets.
(h) Return on common stockholders' equity.
(i) Earnings per share.
(j) Price-earnings.
(k) Payout.
(l) Debt to total assets.
(m) Times interest earned.

P18-7 Presented below is an incomplete income statement and an incomplete comparative balance sheet of Cotte Corporation.

Compute missing information given a set of ratios.
(SO 5)

COTTE CORPORATION
Income Statement
For the Year Ended December 31, 2011

Sales	$11,000,000
Cost of goods sold	?
Gross profit	?
Operating expenses	1,665,000
Income from operations	?
Other expenses and losses	
Interest expense	?
Income before income taxes	?
Income tax expense	560,000
Net income	$?

COTTE CORPORATION
Balance Sheets
December 31

Assets	2011	2010
Current assets		
Cash	$ 450,000	$ 375,000
Accounts receivable (net)	?	950,000
Inventory	?	1,720,000
Total current assets	?	3,045,000
Plant assets (net)	4,620,000	3,955,000
Total assets	$?	$7,000,000
Liabilities and Stockholders' Equity		
Current liabilities	$?	$ 825,000
Long-term notes payable	?	2,800,000
Total liabilities	?	3,625,000
Common stock, $1 par	3,000,000	3,000,000
Retained earnings	400,000	375,000
Total stockholders' equity	3,400,000	3,375,000
Total liabilities and stockholders' equity	$?	$7,000,000

Additional information:

1. The receivables turnover for 2011 is 10 times.
2. All sales are on account.
3. The profit margin for 2011 is 14.5%.
4. Return on assets is 22% for 2011.
5. The current ratio on December 31, 2011, is 3.0.
6. The inventory turnover for 2011 is 4.8 times.

Instructions

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.)

Prepare income statement with discontinued operations and extraordinary loss.
(SO 6)

P18-8 Cheaney Corporation owns a number of cruise ships and a chain of hotels. The hotels, which have not been profitable, were discontinued on September 1, 2010. The 2010 operating results for the company were as follows.

Operating revenues	$12,850,000
Operating expenses	8,700,000
Operating income	$ 4,150,000

Analysis discloses that these data include the operating results of the hotel chain, which were: operating revenues $2,000,000 and operating expenses $2,400,000. The hotels were sold at a gain of $200,000 before taxes. This gain is not included in the operating results. During the year, Cheaney suffered an extraordinary loss of $800,000 before taxes, which is not included in the operating results. In 2010, the company had other revenues and gains of $100,000, which are not included in the operating results. The corporation is in the 30% income tax bracket.

Instructions

Prepare a condensed income statement.

Prepare income statement with nontypical items.
(SO 6)

P18-9 The ledger of LaRussa Corporation at December 31, 2010, contains the following summary data.

Net sales	$1,700,000	Cost of goods sold	$1,100,000
Selling expenses	120,000	Administrative expenses	150,000
Other revenues and gains	20,000	Other expenses and losses	28,000

Your analysis reveals the following additional information that is not included in the above data.

1. The entire puzzles division was discontinued on August 31. The income from operations for this division before income taxes was $20,000. The puzzles division was sold at a loss of $90,000 before income taxes.
2. On May 15, company property was expropriated for an interstate highway. The settlement resulted in an extraordinary gain of $120,000 before income taxes.
3. The income tax rate on all items is 30%.

Instructions

Prepare an income statement for the year ended December 31, 2010. Use the format illustrated in the Comprehensive DO IT! (p. 818).

PROBLEMS: SET B

Visit the book's companion website at **www.wiley.com/college/weygandt**, and choose the Student Companion site, to access Problem Set B.

CONTINUING COOKIE CHRONICLE

(Note: This is a continuation of the Cookie Chronicle from Chapters 1-17.)

CCC18 Natalie and Curtis have comparative balance sheets and income statements for Cookie & Coffee Creations Inc. They have been told that they can use these financial statements to prepare horizontal and vertical analyses, and to calculate financial ratios, to analyze how their business is doing and to make some decisions they have been considering.

Go to the book's companion website, **www.wiley.com/college/weygandt**, *to see the completion of this problem.*

BROADENING YOUR PERSPECTIVE

FINANCIAL REPORTING AND ANALYSIS

Financial Reporting Problem

PepsiCo, Inc.

BYP18-1 Your parents are considering investing in PepsiCo, common stock. They ask you, as an accounting expert, to make an analysis of the company for them. Fortunately, excerpts from a current annual report of PepsiCo are presented in Appendix A of this textbook. Note that all dollar amounts are in millions.

Instructions

(Follow the approach in the chapter for rounding numbers.)

(a) Make a 5-year trend analysis, using 2003 as the base year, of (1) net sales and (2) net income. Comment on the significance of the trend results.

(b) Compute for 2007 and 2006 the (1) profit margin, (2) asset turnover, (3) return on assets, and (4) return on common stockholders' equity. How would you evaluate PepsiCo's profitability? Total assets at December 31, 2005, were $31,727, and total stockholders' equity at December 31, 2005, was $14,320.

(c) Compute for 2007 and 2006 the (1) debt to total assets and (2) times interest earned ratio. How would you evaluate PepsiCo's long-term solvency?

(d) What information outside the annual report may also be useful to your parents in making a decision about PepsiCo, Inc.?

Comparative Analysis Problem

PepsiCo, Inc. vs. The Coca-Cola Company

BYP18-2 PepsiCo's financial statements are presented in Appendix A. Financial statements of The Coca-Cola Company are presented in Appendix B.

Instructions

(a) Based on the information contained in these financial statements, determine each of the following for each company.
- **(1)** The percentage increase (decrease) in (i) net sales and (ii) net income from 2006 to 2007.
- **(2)** The percentage increase in (i) total assets and (ii) total common stockholders' (shareholders') equity from 2006 to 2007.
- **(3)** The basic earnings per share and price-earnings ratio for 2007. (For both PepsiCo and Coca-Cola, use the basic earnings per share.) Coca-Cola's common stock had a market price of $61.37 at the end of fiscal-year 2007.

(b) What conclusions concerning the two companies can be drawn from these data?

Exploring the Web

BYP18-3 The Management Discussion and Analysis section of an annual report addresses corporate performance for the year, and sometimes uses financial ratios to support its claims.

Address: www.ibm.com/investor/tools/index.phtml or go to **www.wiley.com/college/weygandt**

Steps

1. From IBM's Investor Tools, choose **Investment Guides**.
2. Choose **Guide to Annual Reports**.
3. Choose **Anatomy of an Annual Report**.

Instructions

Using the information from the above site, answer the following questions.

(a) What are the optional elements that are often included in an annual report?
(b) What are the elements of an annual report that are required by the SEC?
(c) Describe the contents of the Management Discussion.
(d) Describe the contents of the Auditors' Report.
(e) Describe the contents of the Selected Financial Data.

CRITICAL THINKING

Decision Making Across the Organization

BYP18-4 As the CPA for Carismo Manufacturing Inc., you have been asked to develop some key ratios from the comparative financial statements. This information is to be used to convince creditors that the company is solvent and will continue as a going concern. The data requested and the computations developed from the financial statements follow.

	2010	2009
Current ratio	3.1 times	2.1 times
Acid-test ratio	.8 times	1.4 times
Asset turnover	2.8 times	2.2 times
Net income	Up 32%	Down 8%
Earnings per share	$3.30	$2.50

Instructions

With the class divided into groups, answer the following.

Carismo Manufacturing Inc. asks you to prepare a list of brief comments stating how each of these items supports the solvency and going-concern potential of the business. The company wishes to use these comments to support its presentation of data to its creditors. You are to prepare

the comments as requested, giving the implications and the limitations of each item separately. Then prepare a collective inference that may be drawn from the individual items about Carismo's solvency and going-concern potential.

BYP18-5 General Dynamics develops, produces, and supports innovative, reliable, and highly sophisticated military and commercial products. In July of a recent year, the corporation announced that its Quincy Shipbuilding Division (Quincy) will be closed following the completion of the Maritime Prepositioning Ship construction program.

Prior to discontinuance, the operating results of Quincy were net sales $246.8 million, income from operations before income taxes $28.3 million, and income taxes $12.5 million. The corporation's loss on disposition of Quincy was $5.0 million, net of $4.3 million income tax benefits.

From its other operating activities, General Dynamics' financial results were net sales $8,163.8 million, cost of goods sold $6,958.8 million, and selling and administrative expenses $537.0 million. In addition, the corporation had interest expense of $17.2 million and interest revenue of $3.6 million. Income taxes were $282.9 million.

General Dynamics had an average of 42.3 million shares of common stock outstanding during the year.

Instructions

With the class divided into groups, answer the following.

(a) Prepare the income statement for the year, assuming that the year ended on December 31, 2010. Show earnings per share data on the income statement. All dollars should be stated in millions, except for per share amounts. (For example, $8 million would be shown as $8.0)

(b) In the preceding year, Quincy's earnings were $51.6 million before income taxes of $22.8 million. For comparative purposes, General Dynamics reported earnings per share of $0.61 from discontinued operations for Quincy in the preceding year.

(1) What was the average number of common shares outstanding during the preceding year?

(2) If earnings per share from continuing operations was $7.47, what was income from continuing operations during the preceding year? (Round to two decimals.)

Communication Activity

BYP18-6 Beth Harlan is the CEO of Lafferty's Electronics. Harlan is an expert engineer but a novice in accounting. She asks you to explain (1) the bases for comparison in analyzing Lafferty's financial statements, and (2) the factors affecting quality of earnings.

Instructions

Write a letter to Beth Harlan that explains the bases for comparison and factors affecting quality of earnings.

Ethics Case

BYP18-7 Jack McClintock, president of McClintock Industries, wishes to issue a press release to bolster his company's image and maybe even its stock price, which has been gradually falling. As controller, you have been asked to provide a list of twenty financial ratios along with some other operating statistics relative to McClintock Industries' first quarter financials and operations.

Two days after you provide the ratios and data requested, Jeremy Phelps, the public relations director of McClintock, asks you to prove the accuracy of the financial and operating data contained in the press release written by the president and edited by Jeremy. In the press release, the president highlights the sales increase of 25% over last year's first quarter and the positive change in the current ratio from 1.5:1 last year to 3:1 this year. He also emphasizes that production was up 50% over the prior year's first quarter.

You note that the press release contains only positive or improved ratios and none of the negative or deteriorated ratios. For instance, no mention is made that the debt to total assets ratio has increased from 35% to 55%, that inventories are up 89%, and that while the current ratio improved, the acid-test ratio fell from 1:1 to .5:1. Nor is there any mention that the reported profit for the quarter would have been a loss had not the estimated lives of McClintock's plant and machinery been increased by 30%. Jeremy emphasized, "The prez wants this release by early this afternoon."

Instructions

(a) Who are the stakeholders in this situation?
(b) Is there anything unethical in president McClintock's actions?
(c) Should you as controller remain silent? Does Jeremy have any responsibility?

"All About You" Activity

BYP18-8 In this chapter you learned how to use many tools for performing a financial analysis of a company. When making personal investments, however, it is most likely that you won't be buying stocks and bonds in individual companies. Instead, when most people want to invest in stock, they buy mutual funds. By investing in a mutual fund, you reduce your risk because the fund diversifies by buying the stock of a variety of different companies, bonds, and other investments, depending on the stated goals of the fund.

Before you invest in a fund, you will need to decide what type of fund you want. For example, do you want a fund that has the potential of high growth (but also high risk), or are you looking for lower risk and a steady stream of income? Do you want a fund that invests only in U.S. companies, or do you want one that invests globally? Many resources are available to help you with these types of decisions.

Instructions

Go to **http://web.archive.org/web/20050210200843/http://www.cnb1.com/invallocmdl.htm** and complete the investment allocation questionnaire. Add up your total points to determine the type of investment fund that would be appropriate for you.

Answers to Insight and Accounting Across the Organization Questions

p. 808 Keeping Up to Date as an Investor

Q: If you want to keep current with the financial and operating developments of a company in which you own shares, what are some ways you can do so?

A: *You can obtain current information on your investments through a company's Web site, financial magazines and newspapers, CNBC television programs, investment letters, and a stockbroker.*

p. 814 What Does "Non-Recurring" Really Mean?

Q: If a company takes a large restructuring charge, what is the effect on the company's current income statement versus future ones?

A: *The current period's net income can be greatly diminished by a large restructuring charge, while the net income in future periods can be enhanced because they are relieved of costs (i.e., depreciation and labor expenses) that would have been charged to them.*

Answers to Self-Study Questions

1. b **2.** d **3.** a **4.** c **5.** c **6.** c **7.** c **8.** b **9.** b **10.** a **11.** d **12.** c **13.** c **14.** d **15.** d