

14

Financial Statement Analysis

Learning Objectives

1

Apply horizontal and vertical analysis to financial statements.

2

Analyze a company's performance using ratio analysis.

3

Apply the concept of sustainable income.

Analyzing financial statements involves:

Characteristics

- ◆ Liquidity
- ◆ Profitability
- ◆ Solvency

Comparison Bases

- ◆ Intracompany
- ◆ Industry
averages
- ◆ Intercompany

Tools of Analysis

- ◆ Horizontal
- ◆ Vertical
- ◆ Ratio

Horizontal Analysis

Horizontal analysis, also called trend analysis, is a technique for evaluating a series of financial statement data over a period of time.

- ◆ **Purpose** is to determine the increase or decrease.
- ◆ **Commonly applied** to the
 - ▶ balance sheet,
 - ▶ income statement, and
 - ▶ statement of retained earnings.

Horizontal Analysis

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

			Increase or (Decrease) during 2013	
			Amount	Percent
	2013	2012		
Sales revenue	\$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	<u>\$ 263,800</u>	<u>\$ 208,500</u>	<u>\$ 55,300</u>	<u>26.5%</u>

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 an **income statement**, we might say that selling expenses are 16% of net sales.
- ◆ Vertical analysis is commonly applied to the
 - ▶ balance sheet and
 - ▶ income statement.

Vertical Analysis

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

	2013		2012	
	Amount	Percent	Amount	Percent
Sales revenue	\$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%

Vertical Analysis

Enables a comparison of companies of different sizes.

Condensed Income Statements For the Year Ended December 31, 2013 (in thousands)				
	Quality Department Store Inc.		Macy's, Inc.	
	<u>Dollars</u>	<u>Percent</u>	<u>Dollars</u>	<u>Percent</u>
Net sales	\$2,097	100.0%	\$27,931,000	100.0%
Cost of goods sold	<u>1,281</u>	<u>61.1%</u>	<u>16,725,000</u>	<u>59.9%</u>
Gross profit	816	38.9%	11,206,000	40.1%
Selling and administrative expenses	<u>357</u>	<u>17.0%</u>	<u>8,440,000</u>	<u>30.2%</u>
Income from operations	459	21.9%	2,766,000	9.9%
Other expenses and revenues (including income taxes)	<u>195</u>	<u>9.3%</u>	<u>1,280,000</u>	<u>4.6%</u>
Net income	<u><u>\$ 264</u></u>	<u><u>12.6%</u></u>	<u><u>\$ 1,486,000</u></u>	<u><u>5.3%</u></u>

Illustration 14-10
Intercompany income statement comparison

Ratio analysis expresses the relationship among selected items of financial statement data.

Financial Ratio Classifications

Liquidity

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

Profitability

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

Solvency

Measures the ability of the company to survive over a long period of time.

Ratio Analysis

A single ratio by itself is not very meaningful.

The discussion of ratios include 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 **Macy's, Inc.** as Quality Department Store's principal competitor.

Ratio Analysis

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.
- ◆ Ratios include the **current ratio**, the **acid-test ratio**, **accounts receivable turnover**, and **inventory turnover**.

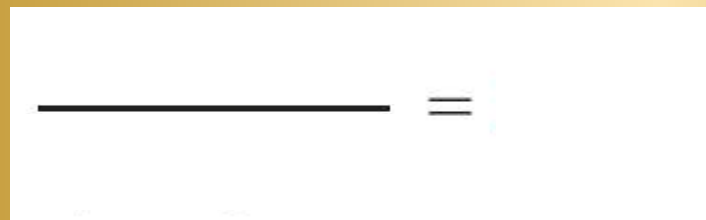
QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	<u>2013</u>	<u>2012</u>
<u>Assets</u>		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
<u>Liabilities</u>		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
<u>Stockholders' Equity</u>		

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

	<u>2013</u>	<u>2012</u>
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Total income	459,000	377,000

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



1. CURRENT RATIO

Illustration 14-12

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

Quality Department Store	
<u>2013</u>	<u>2012</u>
$\frac{\$1,020,000}{\$344,500} = 2.96:1$	$\frac{\$945,000}{\$303,000} = 3.12:1$
<u>Industry average</u>	<u>Macy's, Inc.</u>
1.70:1	1.52:1

Ratio of 2.96:1 means that for every dollar of current liabilities, Quality has \$2.96 of current assets.

2. ACID-TEST RATIO

Illustration 14-13

QUALITY DEPARTMENT STORE INC. Balance Sheet (partial)		
	2013	2012
Current assets		
Cash	\$ 100,000	\$155,000
Short-term investments	20,000	70,000
Accounts receivable (net*)	230,000	180,000
Inventory	620,000	500,000
Prepaid expenses	50,000	40,000
Total current assets	<u><u>\$1,020,000</u></u>	<u><u>\$ 945,000</u></u>
*Allowance for doubtful accounts is \$10,000 at the end of each year.		

QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		
Common stock, \$1 par	275,400	270,000

QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	2013	2012
Current assets		
Cash	\$ 100,000	\$155,000
Short-term investments	20,000	70,000
Accounts receivable (net*)	230,000	180,000
Inventory	620,000	500,000
Prepaid expenses	50,000	40,000
Total current assets	<u>\$1,020,000</u>	<u>\$ 945,000</u>

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

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

$$\underline{\quad + \quad + \quad} = \quad$$

2. ACID-TEST RATIO

Illustration 14-14

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

Quality Department Store

2013

$$\frac{\$100,000 + \$20,000 + \$230,000}{\$344,500} = 1.02:1$$

Industry average

0.70:1

2012

$$\frac{\$155,000 + \$70,000 + \$180,000}{\$303,000} = 1.34:1$$

Macy's, Inc.

0.47:1

Acid-test ratio measures immediate liquidity.

QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	<u>2013</u>	<u>2012</u>
Current assets		
Cash	\$ 100,000	\$155,000
Short-term investments	20,000	70,000
Accounts receivable (net*)	230,000	180,000
Inventory	620,000	500,000
Prepaid expenses	50,000	40,000
Total current assets	<u>\$1,020,000</u>	<u>\$ 945,000</u>

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

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

	<u>2013</u>	<u>2012</u>
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000

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

3. ACCOUNTS RECEIVABLE TURNOVER

Illustration 14-15

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

Quality Department Store

$$\frac{\begin{array}{c} \text{2013} \\ \$2,097,000 \end{array}}{\left[\frac{\$180,000 + \$230,000}{2} \right]} = 10.2 \text{ times}$$

Industry average
46.4 times

$$\frac{\begin{array}{c} \text{2012} \\ \$1,837,000 \end{array}}{\left[\frac{\$200,000 + \$180,000}{2} \right]} = 9.7 \text{ times}$$

Macy's, Inc.
69.1 times

Measures the number of times, on average, the company collects receivables during the period.

3. ACCOUNTS RECEIVABLE TURNOVER

$$\frac{\$2,097,000}{(\$180,000 + \$230,000) / 2} = 10.2 \text{ times}$$

A **variant** of the accounts receivable turnover ratio is to convert it to an **average collection period** in terms of days.

$$365 \text{ days} / 10.2 \text{ times} = \text{every } 35.78 \text{ days}$$

Accounts receivable are collected on average every 36 days.

QUALITY DEPARTMENT STORE INC.
Balance Sheet (partial)

	<u>2013</u>	<u>2012</u>
Current assets		
Cash	\$ 100,000	\$155,000
Short-term investments	20,000	70,000
Accounts receivable (net*)	230,000	180,000
Inventory	620,000	500,000
Prepaid expenses	50,000	40,000
Total current assets	<u>\$1,020,000</u>	<u>\$ 945,000</u>

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

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

	<u>2013</u>	<u>2012</u>
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		

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

_____ = _____

| _____ |

4. INVENTORY TURNOVER

Illustration 14-16

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

Quality Department Store

$$\frac{\begin{array}{c} \text{2013} \\ \$1,281,000 \end{array}}{\begin{array}{c} \frac{[\$500,000 + \$620,000]}{2} \end{array}} = 2.3 \text{ times}$$

Industry average
4.3 times

$$\frac{\begin{array}{c} \text{2012} \\ \$1,140,000 \end{array}}{\begin{array}{c} \frac{[\$450,000 + \$500,000]}{2} \end{array}} = 2.4 \text{ times}$$

Macy's, Inc.
3.1 times

Measures the number of times, on average, the inventory is sold during the period.

4. INVENTORY TURNOVER

$$\frac{\$1,281,000}{(\$500,000 + \$620,000) / 2} = 2.3 \text{ times}$$

A variant of inventory turnover is the days in inventory.

$$365 \text{ days} / 2.3 \text{ times} = \text{every } 159 \text{ days}$$

Inventory turnover ratios vary considerably among industries.

Ratio Analysis

Profitability Ratios

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

- ◆ Income affects the company's ability to obtain debt and equity financing, their liquidity position, and their ability to grow.
- ◆ Ratios include the **profit margin, asset turnover, return on assets, return on common stockholders' equity, earnings per share, price-earnings ratio, and payout ratio.**

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		

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

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	<u>\$ 263,800</u>	<u>\$ 208,500</u>

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

5. PROFIT MARGIN

Illustration 14-17

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

Quality Department Store

<u>2013</u>
$\frac{\$263,800}{\$2,097,000} = 12.6\%$
<u>Industry average</u>
8.0%

<u>2012</u>
$\frac{\$208,500}{\$1,837,000} = 11.4\%$
<u>Macy's, Inc.</u>
5.3%

Measures the percentage of each dollar of sales that results in net income.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		
Common stock, \$1 par	275,000	270,000
Retained earnings	728,000	525,000
Total stockholders' equity	<u>1,003,000</u>	<u>795,000</u>

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	<u>2,097,000</u>	<u>1,837,000</u>
Cost of goods sold	<u>1,281,000</u>	<u>1,140,000</u>
Gross profit	<u>816,000</u>	<u>697,000</u>
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	<u>357,000</u>	<u>320,000</u>
Income from operations	<u>459,000</u>	<u>377,000</u>
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		

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

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6. ASSET TURNOVER

Illustration 14-18

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

Quality Department Store

$$\frac{\begin{array}{c} \text{2013} \\ \$2,097,000 \end{array}}{\left[\frac{\$1,595,000 + \$1,835,000}{2} \right]} = 1.2 \text{ times}$$

Industry average
1.4 times

$$\frac{\begin{array}{c} \text{2012} \\ \$1,837,000 \end{array}}{\left[\frac{\$1,446,000 + \$1,595,000}{2} \right]} = 1.2 \text{ times}$$

Macy's, Inc.
1.3 times

Measures how efficiently a company uses its assets to generate sales.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		
Common stock, \$1 par	275,400	270,000
Retained earnings	727,600	525,000

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

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	\$ 263,800	\$ 208,500




Diagram illustrating a single-strand break (SSB) on a DNA molecule. The break is indicated by a vertical line segment on the top strand, with a blue vertical line segment extending from the break point to the right, labeled "SSB".

7. RETURN ON ASSET

Illustration 14-19

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

Quality Department Store

2013

$$\frac{\$263,800}{\left[\frac{\$1,595,000 + \$1,835,000}{2} \right]} = 15.4 \%$$

Industry average

8.9%

2012

$$\frac{\$208,500}{\left[\frac{\$1,446,000 + \$1,595,000}{2} \right]} = 13.7 \%$$

Macy's, Inc.

7.0%

An overall measure of profitability.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000

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

Stockholders' Equity		
Common stock, \$1 par	275,400	270,000
Retained earnings	727,600	525,000
Total stockholders' equity	1,003,000	795,000
Total liabilities and stockholders' equity	\$1,835,000	\$1,595,000

Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	\$ 263,800	\$ 208,500

8. RETURN ON COMMON STOCKHOLDERS' EQUITY

Illustration 14-20

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

Quality Department Store	
<div><div>2013</div><div>$\frac{\\$263,800}{\left[\frac{\\$795,000 + \\$1,003,000}{2} \right]} = 29.3\%$</div></div>	<div><div>2012</div><div>$\frac{\\$208,500}{\left[\frac{\\$667,000 + \\$795,000}{2} \right]} = 28.5\%$</div></div>
<div>Industry average</div> <div>18.3%</div>	<div>Macy's, Inc.</div> <div>24.2%</div>

Shows how many dollars of net income the company earned for each dollar invested by the owners.

8. RETURN ON COMMON STOCKHOLDERS' EQUITY

With Preferred Stock

- ◆ Deduct preferred dividend from net income.

Illustration 14-21

Return on common stockholders' equity with preferred stock

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

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000

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

Stockholders' Equity		
Common stock, \$1 par	275,400	270,000
Retained earnings	727,600	525,000
Total stockholders' equity	1,003,000	795,000
Total liabilities and stockholders' equity	\$1,835,000	\$1,595,000

Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	\$ 263,800	\$ 208,500

$$\frac{[270,000 + 275,400]}{2} =$$

9. EARNINGS PER SHARE (EPS)

Illustration 14-22

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

Quality Department Store

$$\frac{\begin{array}{c} \text{2013} \\ \$263,800 \end{array}}{\left[\frac{270,000 + 275,400}{2} \right]} = \$0.97$$

$$\frac{\begin{array}{c} \text{2012} \\ \$208,500 \end{array}}{\$270,000} = \$0.77$$

A measure of the net income earned on each share of common stock.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000

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

$$\frac{\$12.00}{} = $$

10. PRICE-EARNINGS RATIO

Illustration 14-23

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

Quality Department Store

<u>2013</u>
$\frac{\$12.00}{\$0.97} = 12.4 \text{ times}$
<u>Industry average</u>
21.3 times

<u>2012</u>
$\frac{\$8.00}{\$0.77} = 10.4 \text{ times}$
<u>Macy's, Inc.</u>
13.5 times

Reflects investors' assessments of a company's future earnings.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		
Common stock, \$1 par	275,000	270,000

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

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	<u>\$ 263,800</u>	<u>\$ 208,500</u>

$$\underline{\$61,200} =$$

11. PAYOUT RATIO

Illustration 14-24

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

Quality Department Store

$$\frac{\text{2013}}{\$61,200}{\$263,800} = 23.2\%$$

$$\frac{\text{Industry average}}{16.1\%}$$

$$\frac{\text{2012}}{\$60,000}{\$208,500} = 28.8\%$$

$$\frac{\text{Macy's, Inc.}}{24.2\%}$$

Measures the percentage of earnings distributed in the form of cash dividends.

Ratio Analysis

Solvency Ratios

Solvency ratios measure the ability of a company to survive over a long period of time.

- ◆ **Debt to Assets** and
- ◆ **Times Interest Earned**

are two ratios that provide information about debt-paying ability.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

	2013	2012
Assets		
Current assets	\$1,020,000	\$ 945,000
Plant assets (net)	800,000	632,500
Intangible assets	15,000	17,500
Total assets	<u>\$1,835,000</u>	<u>\$1,595,000</u>
Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	<u>832,000</u>	<u>800,000</u>
Stockholders' Equity		
Common stock, \$1 par	275,400	270,000
Retained earnings	727,600	525,000
Total stockholders' equity	<u>1,003,000</u>	<u>795,000</u>
Total liabilities and stockholders' equity	<u>\$1,835,000</u>	<u>\$1,595,000</u>

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

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000
Sales returns and allowances	98,000	123,000
Net sales	2,097,000	1,837,000
Cost of goods sold	1,281,000	1,140,000
Gross profit	816,000	697,000
Selling expenses	253,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000

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

_____ =

12. DEBT TO TOTAL ASSETS RATIO

Illustration 14-25

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

Quality Department Store

$$\frac{\text{2013}}{\$832,000}{\$1,835,000} = 45.3\%$$

Industry average

34.2%

$$\frac{\text{2012}}{\$800,000}{\$1,595,000} = 50.2\%$$

Macy's, Inc.

71.1%

Measures the percentage of the total assets that creditors provide.

QUALITY DEPARTMENT STORE INC.
Condensed Balance Sheets

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

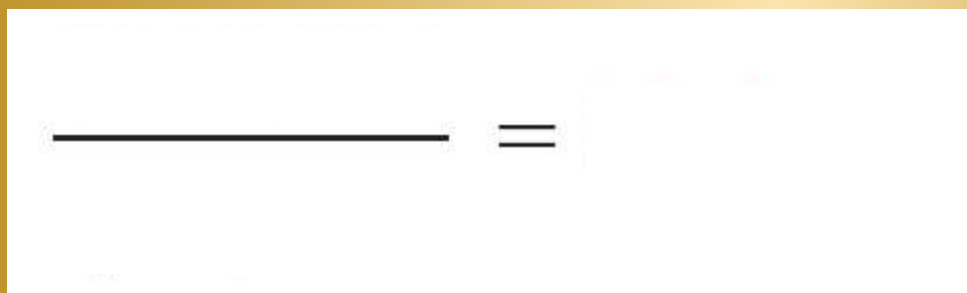
	2013	2012
Assets		

	2013	2012
Sales revenue	\$2,195,000	\$1,960,000

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

Liabilities		
Current liabilities	\$ 344,500	\$ 303,000
Long-term liabilities	487,500	497,000
Total liabilities	832,000	800,000
Stockholders' Equity		
Common stock, \$1 par	275,400	270,000
Retained earnings	727,600	525,000
Total stockholders' equity	1,003,000	795,000
Total liabilities and stockholders' equity	\$1,835,000	\$1,595,000

Selling expenses	255,000	211,500
Administrative expenses	104,000	108,500
Total operating expenses	357,000	320,000
Income from operations	459,000	377,000
Other revenues and gains		
Interest and dividends	9,000	11,000
Other expenses and losses		
Interest expense	36,000	40,500
Income before income taxes	432,000	347,500
Income tax expense	168,200	139,000
Net income	\$ 263,800	\$ 208,500



13. TIMES INTEREST EARNED

Illustration 14-25

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

Quality Department Store	
<u>2013</u>	<u>2012</u>
$\frac{\$468,000}{\$36,000} = 13 \text{ times}$	$\frac{\$388,000}{\$40,500} = 9.6 \text{ times}$
<u>Industry average</u>	<u>Macy's, Inc.</u>
16.1 times	6.9 times

Provides an indication of the company's ability to meet interest payments as they come due.

Alternative Terminology
Times interest earned is also called *interest coverage*.

Sustainable income is the most likely level of income to be obtained by a company in the future. It differs from actual net income by the amount of **unusual** revenues, expenses, gains, and losses included in the current year's income.

Information on unusual items such as gains or losses on discontinued items and components of other comprehensive income are disclosed.

These unusual items are reported **net of income taxes**.

Discontinued Operations

Discontinued Operations
are reported after
“Income from continuing
operations.”

Previously labeled as
“Net Income”.

Moved to

Income Statement (in thousands)

Sales	\$285,000
Cost of goods sold	149,000

Other revenue (expense):

Interest revenue	17,000
Interest expense	(21,000)
Total other	(4,000)
Income before taxes	79,000
Income tax expense	24,000

Income from continuing operations	55,000
--	---------------

Discontinued operations:

Loss from operations, net of tax	315
Loss on disposal, net of tax	189
Total loss on discontinued operations	504
Net income	\$ 54,496

Other Comprehensive Income

Assume Stassi Company classifies their investment in IBM stock as available-for-sale.

STASSI CORPORATION
Statement of Comprehensive Income (partial)
For the Year Ended 2017

Net income	\$ 300,000
Unrealized loss on available-for-sale securities (net of tax)	<u>2,000</u>
Other comprehensive income	<u><u>\$298,000</u></u>

Illustration 14-30

Lower portion of statement of
comprehensive income



Thank You