

Financial Accounting

Prepared by Dr. Sara Abdallah

MGM 611

Lecture 10





مجموعة جامعة
الجميع الذكية
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MIDOCEAN
UNIVERSITY
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Financial Statements Analysis

Lecture 10

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TOPIC
10

LEARNING OBJECTIVES

- Summarize and report results of analysis.
- Explain the form and assess the content of a complete income statement.
- Explain and apply methods of horizontal analysis.
- Describe and apply methods of vertical analysis.
- Define and apply ratio analysis.

Learning Objective

Explain the purpose and identify the building blocks of analysis.

Basics of Analysis

Reduces
uncertainty

Application
of analytical
tools

Involves
transforming
data

Financial statement analysis helps users
make better decisions.

Internal Users

Managers
Officers
Internal Auditors



External Users

Shareholders
Lenders
Suppliers

Basics of Analysis

Financial market analysis is all about understanding what has happened, what is currently happening, and what will happen in a particular market.

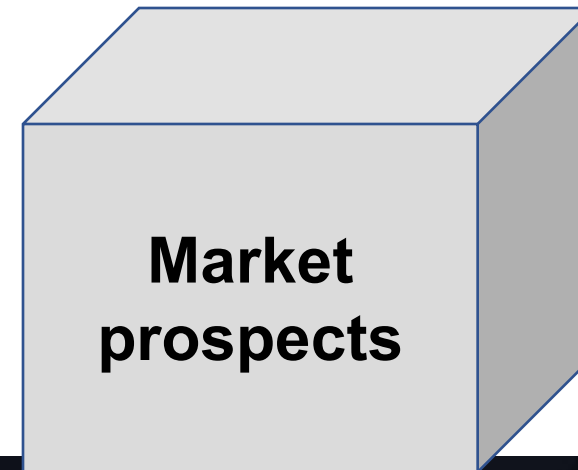
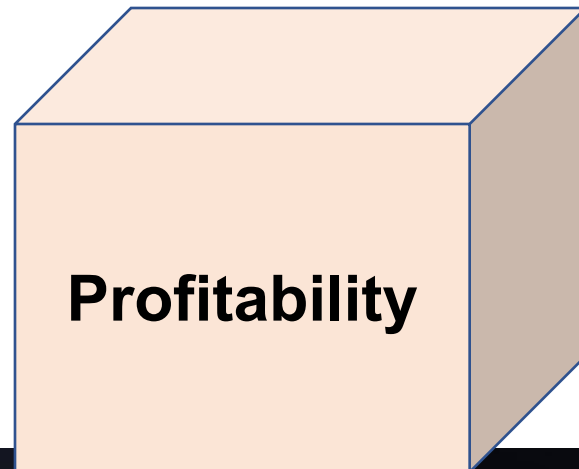
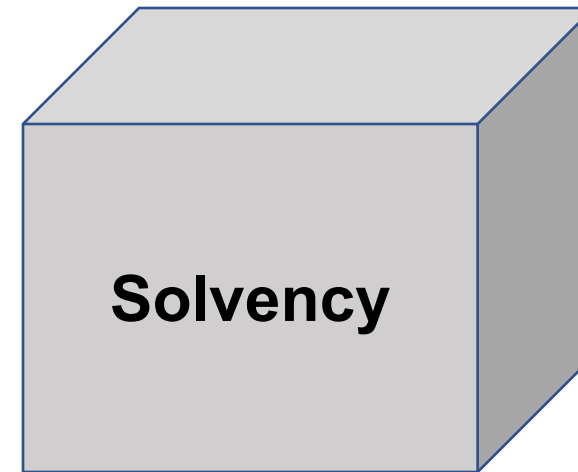
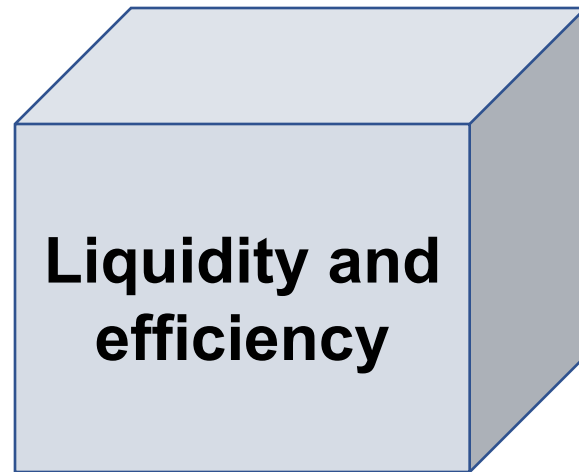
The evaluation of company performance and financial condition includes evaluation of (1) past and current performance, (2) current financial position, and (3) future performance and risk.

Basics of Analysis

One purpose of financial statement analysis for internal users is to provide strategic information to improve company efficiency and effectiveness in providing products and services.

A company's External Users analyze financial statements to assess future company prospects for making operating decisions.

Building Blocks of Analysis



Information for Analysis

- 1. Income Statement**
- 2. Balance Sheet**
- 3. Statement of
Stockholders' Equity**
- 4. Statement of Cash Flows**
- 5. Notes to the Financial
Statements**

Financial reporting includes not only general purpose financial statements, but also information from SEC filings, press releases, shareholders' meetings, forecasts, management letters, auditor's reports, and Webcasts.

Learning Objective

Describe standards for comparisons in analysis.

Standards for Comparison

When we interpret our analysis, it is essential to compare the results we obtained to other standards or benchmarks.



1 Intracompany

2 Competitors

3 Industry

4 Guidelines

Tools of Analysis

Horizontal Analysis

Comparing a company's financial condition and performance across time.

Vertical Analysis

Comparing a company's financial condition and performance to a base amount.

Ratio Analysis

Measurement of key relations between financial statement items.

Learning Objective

Explain and apply
methods of horizontal
analysis.

Horizontal Analysis

Horizontal analysis refers to examination of financial statement data *across time*.

Comparative Statements

Calculate Change in Dollar Amount

$$\text{Dollar change} = \text{Analysis period amount} - \text{Base period amount}$$

When measuring the amount of the change in dollar amounts, compare the analysis period balance to the base period balance. The analysis period is usually the current year while the base period is usually the prior year.

Comparative Statements

Calculate Change as a Percent

$$\text{Percent change} = \frac{\text{Dollar change}}{\text{Base period amount}} \times 100$$

When calculating the change as a percentage, divide the amount of the dollar change by the base period amount, and then multiply by 100 to convert to a percentage.

Comparative Balance Sheets

APPLE INC. Comparative Balance Sheets September 26, 2015, and September 27, 2014				
\$ millions	2015	2014	Dollar Change	Percent Change
Assets				
Cash and cash equivalents	\$ 21,120	\$ 13,844	\$ 7,276	52.6%
Short-term marketable securities	20,481	11,233	9,248	82.3
Accounts receivable, net	16,849	17,460	(611)	(3.5)
Inventories	2,349	2,111	238	11.3
Deferred tax assets	5,546	4,318	1,228	28.4
Vendor non-trade receivables	13,494	9,759	3,735	38.3
Other current assets	9,539	9,806	(267)	(2.7)
Total current assets	89,378	68,531	20,847	30.4
Long-term marketable securities	164,065	130,162	33,903	26.0
Property, plant and equipment, net	22,471	20,624	1,847	9.0
Goodwill	5,116	4,616	500	10.8
Acquired intangible assets, net	3,893	4,142	(249)	(6.0)
Other assets	5,556	3,764	1,792	47.6
Total assets	<u>\$290,479</u>	<u>\$231,839</u>	<u>\$ 58,640</u>	<u>25.3</u>
Liabilities				
Accounts payable	\$ 35,490	\$ 30,196	\$ 5,294	17.5%
Accrued expenses	25,181	18,453	6,728	36.5
Deferred revenue	8,940	8,491	449	5.3
Commercial paper	8,499	6,308	2,191	34.7
Current portion of long-term debt	2,500	0	2,500	—
Total current liabilities	80,610	63,448	17,162	27.0
Deferred revenue—noncurrent	3,624	3,031	593	19.6
Long-term debt	53,463	28,987	24,476	84.4
Other noncurrent liabilities	33,427	24,826	8,601	34.6
Total liabilities	171,124	120,292	50,832	42.3
Stockholders' Equity				
Common stock	27,416	23,313	4,103	17.6
Retained earnings	92,284	87,152	5,132	5.9
Accumulated other comprehensive income	(345)	1,082	(1,427)	—
Total stockholders' equity	<u>119,355</u>	<u>111,547</u>	<u>7,808</u>	<u>7.0</u>
Total liabilities and stockholders' equity	<u>\$290,479</u>	<u>\$231,839</u>	<u>\$ 58,640</u>	<u>25.3</u>

Comparative Income Statements

APPLE INC. Comparative Income Statements For Years Ended September 26, 2015, and September 27, 2014				
\$ millions, except per share	2015	2014	Dollar Change	Percent Change
Net sales	\$233,715	\$182,795	\$50,920	27.9%
Cost of sales	140,089	112,258	27,831	24.8
Gross margin	93,626	70,537	23,089	32.7
Research and development	8,067	6,041	2,026	33.5
Selling, general and administrative	14,329	11,993	2,336	19.5
Total operating expenses	22,396	18,034	4,362	24.2
Operating income	71,230	52,503	18,727	35.7
Other income, net	1,285	980	305	31.1
Income before provision for income taxes	72,515	53,483	19,032	35.6
Provision for income taxes	19,121	13,973	5,148	36.8
Net income	\$ 53,394	\$ 39,510	13,884	35.1
Basic earnings per share	\$ 9.28	\$ 6.49	\$ 2.79	43.0
Diluted earnings per share	\$ 9.22	\$ 6.45	\$ 2.77	42.9

Trend Analysis

Trend analysis is used to reveal patterns in data covering successive periods.

$$\text{Trend percent} = \frac{\text{Analysis period amount}}{\text{Base period amount}} \times 100$$

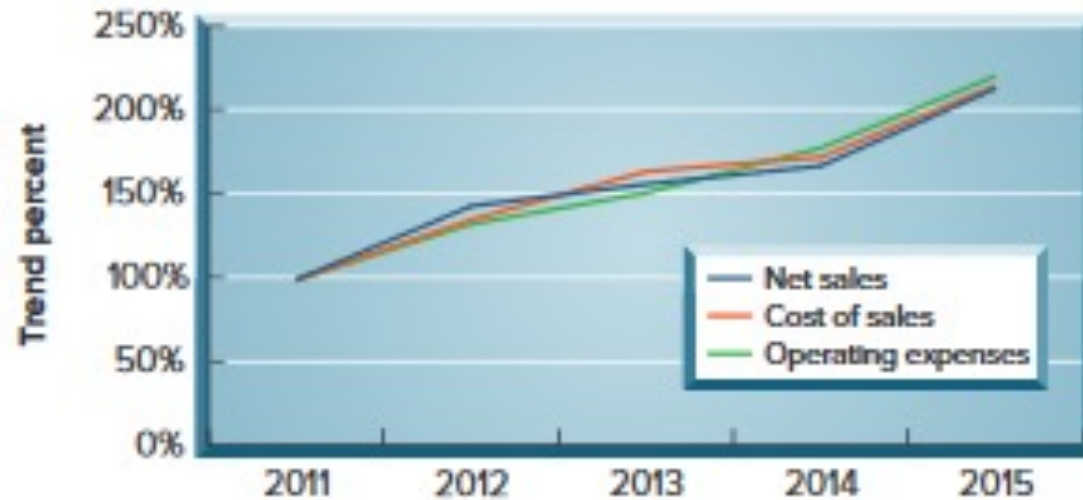
Trend Analysis

\$ millions	2015	2014	2013	2012	2011
Net sales.....	\$233,715	\$182,795	\$170,910	\$156,508	\$108,249
Cost of sales.....	140,089	112,258	106,606	87,846	64,431
Operating expenses.....	22,396	18,034	15,305	13,421	10,028

Using 2011 as the base year we will get the following trend information:

In trend percent	2015	2014	2013	2012	2011
Net sales.....	215.9%	168.9%	157.9%	144.6%	100.0%
Cost of sales.....	217.4	174.2	165.5	136.3	100.0
Operating expenses.....	223.3	179.8	152.6	133.8	100.0

Trend Analysis



We can use the trend percentages to construct a graph so we can see the trend over time.

Learning Objective

Describe and apply
methods of vertical
analysis.

Vertical Analysis

Common-Size Statements

$$\text{Common-size percent} = \frac{\text{Analysis amount}}{\text{Base amount}} \times 100$$

Financial Statement

Base Amount

Balance Sheet

Total Assets

Income Statement

Revenues

Common-Size Balance Sheet

APPLE INC.				
Common-Size Comparative Balance Sheets				
September 26, 2015, and September 27, 2014				
\$ millions	2015	2014	Common-Size Percents*	
			2015	2014
Assets				
Cash and cash equivalents	\$ 21,120	\$ 13,844	7.3%	6.0%
Short-term marketable securities	20,481	11,233	7.1	4.8
Accounts receivable, net	16,849	17,460	5.8	7.5
Inventories	2,349	2,111	0.8	0.9
Deferred tax assets	5,546	4,318	1.9	1.9
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Other current assets	9,539	9,806	3.3	4.2
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Property, plant and equipment, net	22,471	20,624	7.7	8.9
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Total assets	<u>\$290,479</u>	<u>\$231,839</u>	<u>100.0%</u>	<u>100.0%</u>
Liabilities				
Accounts payable	\$ 35,490	\$ 30,196	12.2%	13.0%
Accrued expenses	25,181	18,453	8.7	8.0
Deferred revenue	8,940	8,491	3.1	3.7
Commercial paper	8,499	6,308	2.9	2.7
Current portion of long-term debt	2,500	0	0.9	0.0
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Retained earnings	92,284	87,152	31.8	37.6
Accumulated other comprehensive income	(345)	1,082	(0.1)	0.5
Total stockholders' equity	<u>119,355</u>	<u>111,547</u>	<u>41.1</u>	<u>48.1</u>
Total liabilities and stockholders' equity	<u>\$290,479</u>	<u>\$231,839</u>	<u>100.0%</u>	<u>100.0%</u>

* Percents are rounded to tenths and thus may not exactly sum to totals and subtotals.

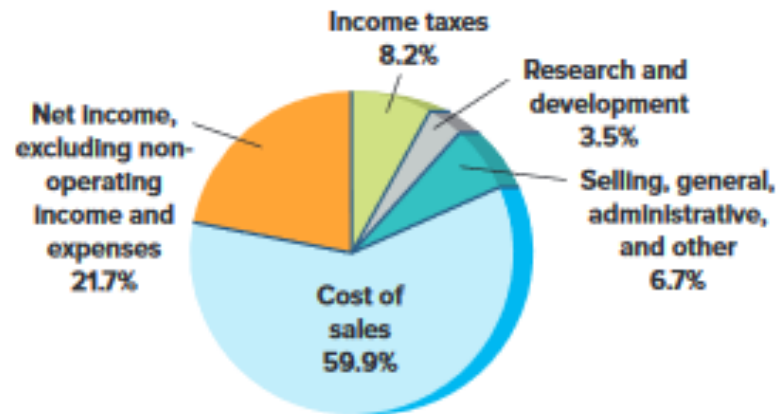
Common-Size Income Statement

APPLE INC. Common-Size Comparative Income Statements For Years Ended September 26, 2015, and September 27, 2014				
\$ millions	2015	2014	Common-Size Percents*	
			2015	2014
Net sales	\$233,715	\$182,795	100.0%	100.0%
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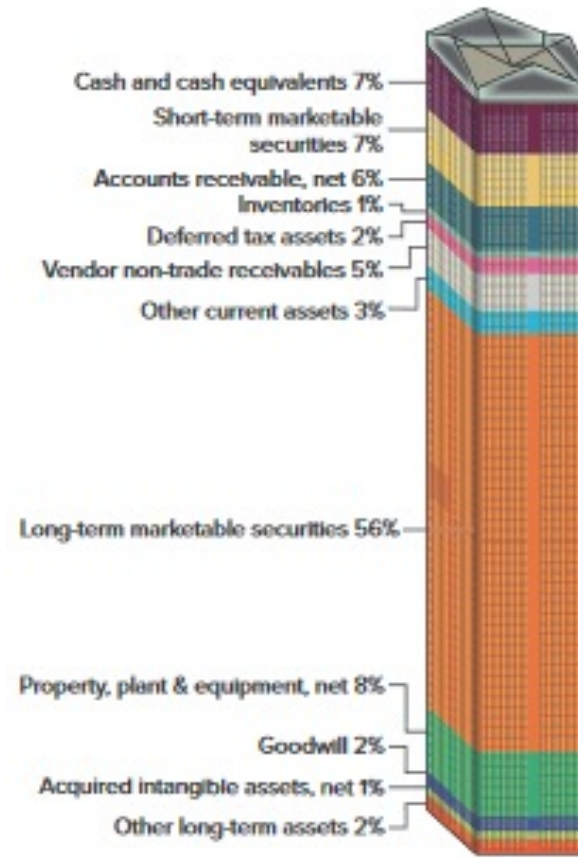
* Percents are rounded to tenths and thus may not exactly sum to totals and subtotals.

Common-Size Graphics

Common-Size Graphic of
Income Statement



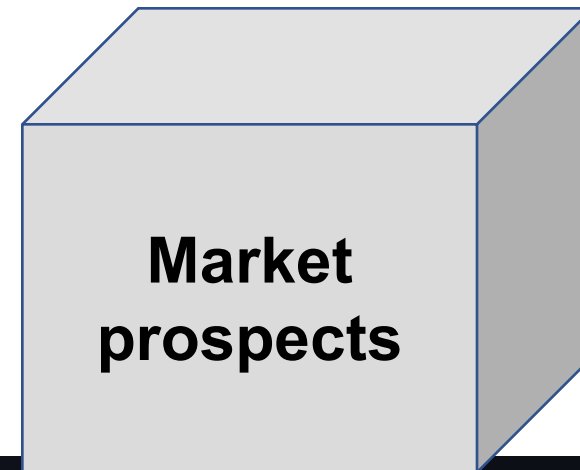
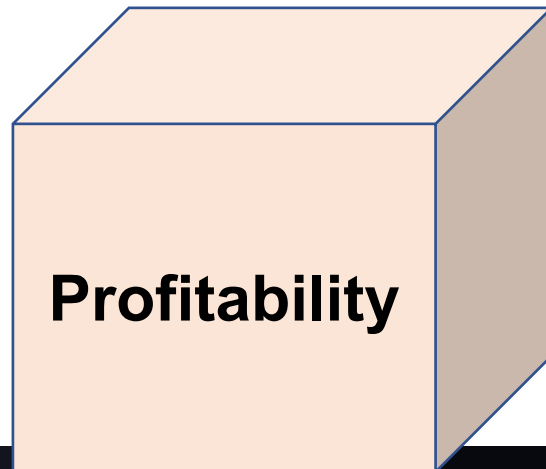
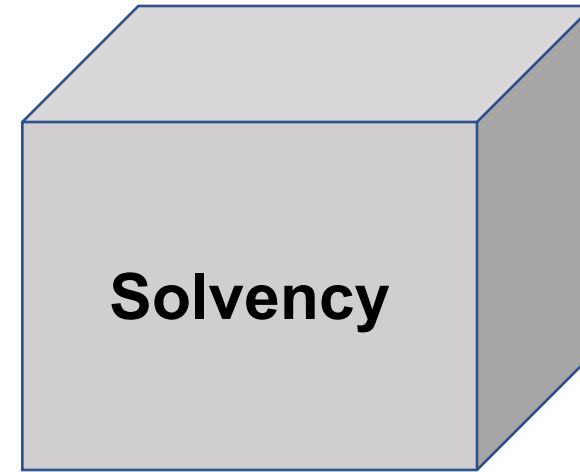
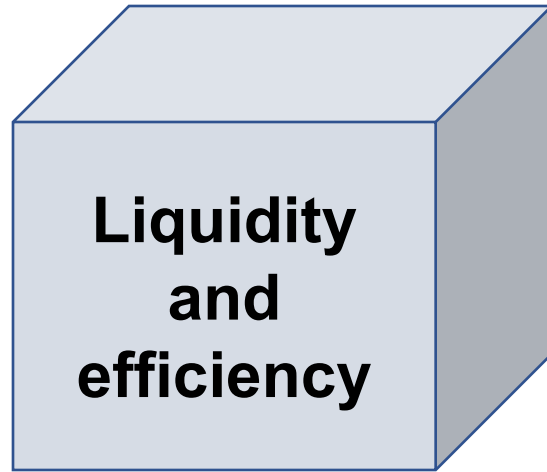
Common-Size Graphic of
Asset Components



Learning Objective

Define and apply ratio analysis.

Ratio Analysis



Liquidity and Efficiency

Current
Ratio

Inventory
Turnover

Acid-test
Ratio

Days' Sales
Uncollected

Accounts
Receivable
Turnover

Days' Sales
in Inventory

Total Asset
Turnover

Working Capital

Working capital represents current assets financed from long-term capital sources that do not require near-term repayment.

$$\begin{array}{r} \text{Current assets} \\ - \text{Current liabilities} \\ \hline = \text{Working capital} \end{array}$$

More working capital suggests a strong liquidity position and an ability to meet current obligations.

Current Ratio

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$



This ratio measures the short-term debt-paying ability of the company. A higher current ratio suggests a strong liquidity position.

Acid-Test Ratio

$$\text{Acid-test ratio} = \frac{\text{Cash + Short-term investments + Current receivables}}{\text{Current liabilities}}$$

Referred to as Quick Assets

This ratio is like the **current ratio** but excludes current assets such as inventories and prepaid expenses that may be difficult to quickly convert into cash.

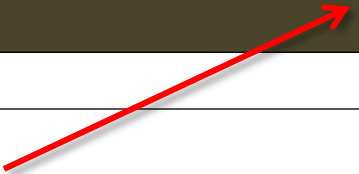
Accounts Receivable Turnover

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

$$\text{Average accounts receivable} = \frac{(\text{Beginning acct. rec.} + \text{Ending acct. rec.})}{2}$$

This ratio measures how many times a company converts its receivables into cash each year.

Inventory Turnover

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


$$\text{Average inventory} = \frac{(\text{Beginning inventory} + \text{Ending inventory})}{2}$$

This ratio measures the number of times merchandise is sold and replaced during the year.

Days' Sales Uncollected

$$\text{Day's sales uncollected} = \frac{\text{Accounts receivable, net}}{\text{Net sales}} \times 365$$

Provides insight into how frequently a company collects its accounts receivable.

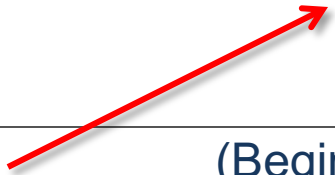
Days' Sales in Inventory

$$\text{Day's sales in Inventory} = \frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$$

This ratio is a useful measure in evaluating inventory liquidity. If a product is demanded by customers, this formula estimates how long it takes to sell the inventory.

Total Asset Turnover

$$\text{Total asset turnover} = \frac{\text{Net sales}}{\text{Average total assets}}$$


$$\text{Average assets} = \frac{(\text{Beginning assets} + \text{Ending assets})}{2}$$

This ratio reflects a company's ability to use its assets to generate sales. It is an important indication of operating efficiency.

Solvency

Debt
Ratio

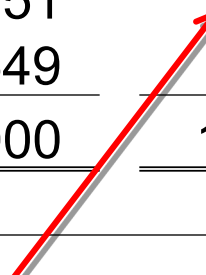
Equity
Ratio

Pledged Assets
to Secured
Liabilities

Times
Interest
Earned

Debt and Equity Ratios

In Millions	Amount	Ratio	
Total liabilities	\$ 83,451	40.3%	[Debt ratio]
Total equity	123,549	59.7%	[Equity ratio]
Total liabilities and equity	<u>\$ 207,000</u>	<u>100.0%</u>	



$$\$83,451 \div \$207,000 = 40.3\%$$

The *debt ratio* expresses total liabilities as a percent of total assets. The *equity ratio* provides complementary information by expressing total equity as a percent of total assets.

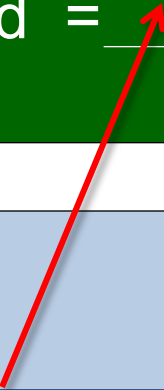
Debt-to-Equity Ratio

$$\text{Debt-to-equity ratio} = \frac{\text{Total liabilities}}{\text{Total equity}}$$

This ratio measures what portion of a company's assets are contributed by creditors. A larger debt-to-equity ratio implies less opportunity to expand through use of debt financing.

Times Interest Earned

$$\text{Times interest earned} = \frac{\text{Income before interest and taxes}}{\text{Interest expense}}$$



Net income
+ Interest expense
+ Income taxes
= Income before interest and taxes

This is the most common measure of the ability of a company's operations to provide protection to long-term creditors.

Profitability: is the ability to provide financial rewards sufficient to attract and retain financing.

Profit
Margin

Return on
Total Assets

Profit Margin

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

This ratio describes a company's ability to earn net income from each sales dollar.

Return on Total Assets

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

Return on total assets measures how well assets have been employed by the company's management.

Market Prospects

Price-Earnings
Ratio

Dividend
Yield

Price-Earnings Ratio

$$\text{Price-earnings ratio} = \frac{\text{Market price per common share}}{\text{Earnings per share}}$$

This measure is often used by investors as a general guideline in gauging stock values. Generally, the higher the price-earnings ratio, the more opportunity a company has for growth.

Dividend Yield

$$\text{Dividend yield} = \frac{\text{Annual cash dividends per share}}{\text{Market price per share}}$$

This ratio identifies the return, in terms of cash dividends, on the current market price per share of the company's common stock.

Summary of Ratios

Ratio	Formula	Measure of
Liquidity and Efficiency		
Current ratio	$= \frac{\text{Current assets}}{\text{Current liabilities}}$	Short-term debt-paying ability
Acid-test ratio	$= \frac{\text{Cash} + \text{Short-term investments} + \text{Current receivables}}{\text{Current liabilities}}$	Immediate short-term debt-paying ability
Accounts receivable turnover	$= \frac{\text{Net sales}}{\text{Average accounts receivable, net}}$	Efficiency of collection
Inventory turnover	$= \frac{\text{Cost of goods sold}}{\text{Average inventory}}$	Efficiency of inventory management
Days' sales uncollected	$= \frac{\text{Accounts receivable, net}}{\text{Net sales}} \times 365$	Liquidity of receivables
Days' sales in inventory	$= \frac{\text{Ending inventory}}{\text{Cost of goods sold}} \times 365$	Liquidity of inventory
Total asset turnover	$= \frac{\text{Net sales}}{\text{Average total assets}}$	Efficiency of assets in producing sales
Solvency		
Debt ratio	$= \frac{\text{Total liabilities}}{\text{Total assets}}$	Creditor financing and leverage
Equity ratio	$= \frac{\text{Total equity}}{\text{Total assets}}$	Owner financing
Debt-to-equity ratio	$= \frac{\text{Total liabilities}}{\text{Total equity}}$	Debt versus equity financing
Times interest earned	$= \frac{\text{Income before interest expense and income taxes}}{\text{Interest expense}}$	Protection in meeting interest payments
Profitability		
Profit margin ratio	$= \frac{\text{Net income}}{\text{Net sales}}$	Net income in each sales dollar
Gross margin ratio	$= \frac{\text{Net sales} - \text{Cost of goods sold}}{\text{Net sales}}$	Gross margin in each sales dollar
Return on total assets	$= \frac{\text{Net income}}{\text{Average total assets}}$	Overall profitability of assets
Return on common stockholders' equity	$= \frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common stockholders' equity}}$	Profitability of owner investment
Book value per common share	$= \frac{\text{Shareholders' equity applicable to common shares}}{\text{Number of common shares outstanding}}$	Liquidation at reported amounts
Basic earnings per share	$= \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted-average common shares outstanding}}$	Net income per common share
Market Prospects		
Price-earnings ratio	$= \frac{\text{Market price per common share}}{\text{Earnings per share}}$	Market value relative to earnings
Dividend yield	$= \frac{\text{Annual cash dividends per share}}{\text{Market price per share}}$	Cash return per common share



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