

Chapter 14

Analyzing Financial Statement

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Annual Report

- Financial statements
- Notes to the financial statements, including a summary of the accounting methods used
- Management's discussion and analysis (MD&A) of the financial results
- The auditor's report
- Comparative financial data for a series of years

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Financial Analyses

- Time-series
- Component percentage
- Financial ratios

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Time -series Analysis

- Compares one value across several periods.
- A base year must be chosen as the basis for comparison.

	<u>2003</u>	<u>2002</u>	<u>2001</u>	<u>2000</u>
Sales	\$41,500	\$37,850	\$36,300	\$35,000
	+ 18.6%	+ 8.1%	+ 3.7%	Base year

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Component Percentages

- Express each item in a financial statement to a single base number set to 100%.
- Sales / total assets are commonly used as the base number

	<u>2002</u>	<u>%</u>
Sales	\$38,303	100.0
Cost of goods sold	19,688	51.4
Gross margin	\$18,615	48.6
Total operating expenses	13,209	34.5
Operating income	\$ 5,406	14.1
Other income	2,187	5.7
Income before taxes	\$ 7,593	19.8
Income taxes	2,827	7.4
Net income	\$ 4,766	12.4

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Ratio Analysis

- **Profitability:**
Can a company earn a satisfactory rate of return?
- **Liquidity:**
Can a company pay the bills as they come due?
- **Solvency:**
Can the company survive over a long period of time?
- **Market test**
Is the stock a good investment?

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Tests of Profitability

- Return on Equity
- Return on Assets
- Financial leverage percentage
- Earnings per Share
- Quality of income
- Profit Margin
- Assets turnover

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Return on Equity

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

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Return on Assets

$$\text{Return on Assets} = \frac{\text{Net Income} + \text{Interest Expense (net of tax)}}{\text{Average Total Assets}}$$

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Financial Leverage Percentage

$$\text{Financial Leverage} = \text{Return on Equity} - \text{Return on Assets}$$

Financial leverage means using borrowed funds to increase returns to shareholders.

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Earnings per Share (EPS)

$$\text{EPS} = \frac{\text{Net Income}}{\text{Average Number of Shares of Common Stock Outstanding}}$$

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Quality of Income

$$\text{Quality of Income} = \frac{\text{Cash Flow from Operating Activities}}{\text{Net Income}}$$

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Profit Margin

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

Gross Profit Margin = $\frac{\text{Net Sales} - \text{COGS}}{\text{Net Sales}}$

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Asset Turnover

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

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

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Tests of Liquidity

- Cash ratio
- Quick ratio
- Current ratio
- Working Capital
- Receivable turnover
- Inventory turnover

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Cash Ratio

Cash Ratio = $\frac{\text{Cash} + \text{Cash Equivalents}}{\text{Current Liabilities}}$

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Quick Ratio (Acid Test)

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

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Current Ratio

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

Working Capital = $\text{Current Assets} - \text{Current Liabilities}$

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Receivable Turnover

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

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Inventory Turnover

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

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Tests of Solvency

- Times interest earned
- Cash coverage
- Debt-to-equity

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Times Interest Earned Ratio

$$\text{Times Interest Earned} = \frac{\text{Net Income} + \text{Interest Expense} + \text{Income Tax Expense}}{\text{Interest Expense}}$$

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Cash Coverage Ratio

$$\text{Cash Coverage} = \frac{\text{Cash Flow from Operating Activities Before Interest and Taxes}}{\text{Interest Paid}}$$

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Debt-to-Equity Ratio

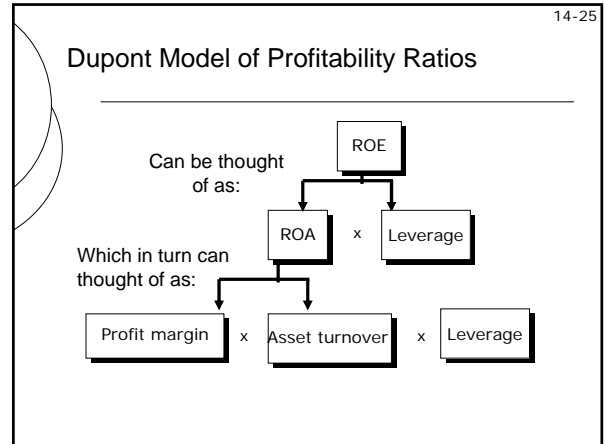
$$\text{Debt/Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Owners' Equity}}$$

This ratio measures a firm's leverage: how much amount of debt is borrowed for \$1 invested by owners

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Dupont Model of Profitability Ratios

$$\frac{\text{Net Income}}{\text{Average Owners' Equity}} = \frac{\text{Net Income}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Owners' Equity}}$$

$$= \frac{\text{Net Income}}{\text{Net Sales}} \times \frac{\text{Net Sales}}{\text{Average Total Assets}} \times \frac{\text{Average Total Assets}}{\text{Average Owners' Equity}}$$


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Market Tests

- P/ E ratio
- Dividend yield

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Price/Earnings (P/E) Ratio

$$\text{P/E Ratio} = \frac{\text{Current Market Price of Stock}}{\text{Earnings Per Share}}$$

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Dividend Yield

$$\text{Dividend Yield} = \frac{\text{Dividends Per Share}}{\text{Market Price of Stock}}$$

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Interpreting Ratios

Ratios may be interpreted by comparison with ratios of other companies or with industry average ratios.

Ratios may vary because of the company's industry characteristics, nature of operations, size, and accounting policies.