

**ACCT 102 - Professor Johnson**  
**Lecture Notes – Chapter 13: ANALYZING FINANCIAL STATEMENTS**

**BASICS OF ANALYSIS**

**Purpose of Analysis**

Who analyzes financial statements?

1. Internal users, such as management, internal auditors, and consultants use financial statement analysis to improve company efficiency and effectiveness in providing products and services.
2. External users, such as stockbrokers and lenders, to make better and more informed investing and lending decisions.
3. Others, such as suppliers, to establish credit terms, or analyst services such as Standard & Poor's, in making buy-sell ratings on stocks and in setting credit ratings.

**Information for Analysis**

External users rely on the financial statements (the income statement, balance sheet, statement of retained earnings, statement cash flows, and the notes to the financial statements), for the data needed to perform financial analyses. Internal users receive special reports not available to those outside the company.

**Standards for Comparison**

Data derived from financial analysis is not useful unless compared to a benchmark.

Common benchmarks are:

1. Intracompany: Comparing data from the current year to the prior years for the company analyzed can indicate useful trends in performance.
2. Industry: Comparing financial analysis data from a company to its industry average lets us know how a company compares to its competitors.
3. Competitor: Comparing a company's financial data to one of its competitors is especially useful in making investing decisions.

**Analysis Tools**

The three most common financial statement analysis tools are:

1. Horizontal analysis
2. Vertical analysis
3. Ratio analysis

*Horizontal analysis*

Horizontal analysis compares changes in accounts across time. For example, assume Company A had the following data available:

	<u>2019</u>	<u>2018</u>
Net sales	\$110,000	\$100,000
Cost of goods sold	<u>60,000</u>	<u>51,000</u>
Gross profit	50,000	49,000

A horizontal analysis for this data would be:

	2019	2018	Dollar Change	Percent Change
Net sales	\$110,000	\$100,000	\$10,000	10.0% (1)
Cost of goods sold	<u>60,000</u>	<u>51,000</u>	<u>9,000</u>	17.6%
Gross profit	50,000	49,000	1,000	2.0%

(1) The percent change is calculated as: Dollar change / older period amount = Percent change. ( $\$10,000 / \$100,000 = 10\%$ .)

What does this tell us? Even though sales increased by 10% from 2018 to 2019, gross profit only increased by 2%. Why? We don't know; financial analysis doesn't give us answers to questions, but does highlight questions we would direct to management.

A type of horizontal analysis which may also be performed is called trend analysis, or trend percents. Using 2018 as the base year, the trend percentages for the example above would be:

	<u>2019</u>	<u>2018</u>
Net sales	110%	100%
Cost of goods sold	118%	100%
Gross profit	102%	100%

This analysis tell us that net sales increased by 10%, but gross profit only by 2%.

Here is a guided example illustrating the use of common size comparisons.

[http://lectures.mhhe.com/connect/0078025605/guided\\_ex/chapter13/ex1307/ex1307.html](http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1307/ex1307.html)

The following guided example focuses on computing trend percentages.

[http://lectures.mhhe.com/connect/0078025605/guided\\_ex/chapter13/ex1303/ex1303.html](http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1303/ex1303.html)

### *Vertical analysis*

Vertical analysis expresses each financial statement as a dollar amount and a percentage. The percentage is calculated on a base amount. For a balance sheet vertical analysis, the base amount is usually total assets. For an income statement vertical analysis, the base amount is usually revenues.

Using the above example, a vertical analysis would be:

	Common-Size Percents			
	2019	2018	2019	2018
Net sales	\$110,000	\$100,000	100.0%	100.0%
Cost of goods sold	<u>60,000</u>	51,000	<u>54.5%</u>	<u>51.0%</u>
Gross profit	50,000	49,000	45.5%	49.0%

The common-size percents for cost of goods sold are calculated as follows:

$$2019: \$60,000 / \$110,000 = 54.5\%$$

$$2018: \$51,000 / \$100,000 = 51.0\%$$

What does this tell us? Even though sales increased, gross profit, as a percentage of net sales decreased. Why? If you were a bank loan officer, and Company A was applying for a loan, this would be a good question to ask Company A's chief financial officer.

### *Ratio Analysis*

Several ratios were covered in ACCT 101. This chapter organizes and applies them in a summary framework.

A ratio is simply a mathematical relationship between two or more items in the financial statements. Usually, their calculation involves division. The ratio result may be expressed as a percentage or a number, depending on the ratio.

There is a summary of ratios, and their formulas, may be found in Exhibit 13.16. We will be working exercises and problems in class to review how these ratios are calculated and used. These ratios are included in four different areas, which are summarized as follows:

<i>Name</i>	<i>Description</i>	<i>Ratios included</i>
Liquidity and Efficiency Ratios	Liquidity refers to the amount of assets available to meet short-term cash requirements. Efficiency ratios measure the productivity of a company in using its assets to generate revenue or cash flow.	Current ratio; acid-test ratio; Accounts receivable turnover; Inventory turnover; Days' sales uncollected; Days' sales in inventory; and Total asset turnover.
Solvency Ratios	Solvency is the company's ability to cover long-term debt obligations over the long run.	Debt ratio; Equity ratio; Debt-to-equity ratio; and Times interest earned.
Profitability Ratios	These ratios measure the company's ability to use its assets to produce profits and positive cash flows.	Profit margin ratio; Gross margin ratio; Return on total assets; Return on common stockholders' equity; Book value per common share; and Basic earnings per share.
Market Prospects Ratios	Used primarily by stock analysts of publicly-traded companies, these ratios are used to measure investors' expectations for the company based on prior periods' results of operations.	Price-earnings ratio and Dividend yield.

We need to understand that ratio computations are worthless unless compared to the company's industry average; prior historical results; or directly to a competitor's ratios.

Below are several guided examples for many of these ratios.

Name of ratio	Guided example link
Current and acid-test	<a href="http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1308/ex1308.html">http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1308/ex1308.html</a>
A/R and Inventory Turnover; days sales in A/R and in Inventory	<a href="http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1309/ex1309.html">http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1309/ex1309.html</a>
Debt and Equity; Debt to Equity; Times Interest Earned	<a href="http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1310/ex1310.html">http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1310/ex1310.html</a>
Profit Margin Ratio; Total Asset Turnover; Return on Total Assets	<a href="http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1311/ex1311.html">http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1311/ex1311.html</a>
Return on Common Stockholders' Equity and the Price-Earnings Ratio	<a href="http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1312/ex1312.html">http://lectures.mhhe.com/connect/0078025605/guided_ex/chapter13/ex1312/ex1312.html</a>