Working with Financial Statements

In the first eight lessons, you learned about the history of accounting and how the accounting cycle works. You learned how to analyze and journalize business transactions, how to post entries to the general ledger account forms, and how to generate financial reports: the income statement, the statement of owner's equity, and the balance sheet. To know how to generate the numbers is good, but to be able to explain what they mean is even better. In this lesson, you will learn about ratio analysis and common-size techniques for financial statements. You will also learn about the limitations of financial statement analysis.

LESSON OBJECTIVES

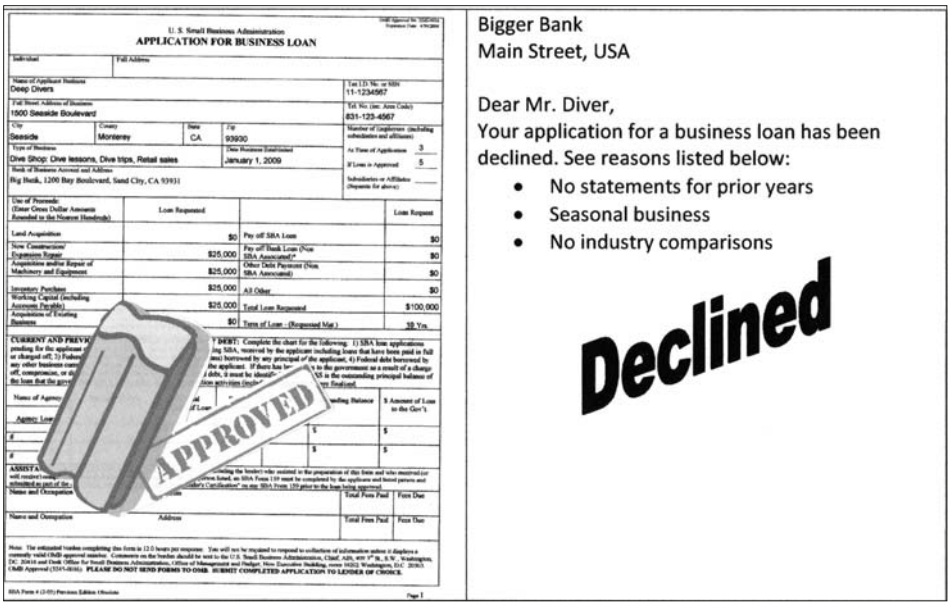
After studying this lesson, you will be able to:

- Explain the purpose of financial statement analysis
- Explain the different ratios: liquidity, leverage, activity, and profitability
- Compare financial statements over time using common-size techniques
- Explain the limitations of financial statement analysis

Case Study: Deep Divers

Dave Diver wanted to expand Deep Divers and needed additional capital. He has achieved good success. He owned a boat for dive trips that many research institutions were using already. Customers also like the shop, although it is a couple of blocks from the beach. He really wanted to build a building on a lot right on the beach that is for sale.

Dave went to his bank, bringing his financial information and all the research he had done on the lot and on the cost of building his own building. When the letter came in the mail and said he had been declined, Dave did not understand why. His wife suggested that he submit an application to a smaller bank. Dave did, but was just as confused when this application came back with a big "approved" stamp on it In this lesson, you will learn how banks look at loan applications. When the talk is about ratio analysis, financial statement analysis, and industry comparisons, you will understand how important good accounting records are for small businesses.



U.S. Small Business Administration

APPLICATION FOR BUSINESS LOAN

Deep Divers

1500 Seaside Boulevard

Seaside | Monterey | CA | 93930

Dive Shop: Dive lessons, Dive trips, Retail sales | January 1, 2009

Big Bank, 1200 Bay Boulevard, Sand City, CA 93931

APPROVED

Bigger Bank
Main Street, USA

Dear Mr. Diver,
Your application for a business loan has been declined. See reasons listed below:

- No statements for prior years
- Seasonal business
- No industry comparisons

Declined

Terms You Will Learn

Acid test ratio (quick ratio)	The quick assets (cash, marketable securities, accounts receivables, prepaids, and notes receivable) of a company divided by the total current liabilities (accounts payable and notes payable due within a year).
Cash to current liabilities	A ratio that looks at the relationship of a firm's cash to its current liabilities.
Common-size financial statements	A financial statement in which all numbers are calculated as a percentage of sales.
Cost of goods sold (COGS)	The original cost of an item sold in a business. If the business buys a chair for $25 and sells it for $35, its COGS is $25.
Current ratio (working capital)	The relationship between current assets and current liabilities. This is looked at closely by banks and lenders.
Debt-to-equity ratio	A measure of how much of the company is financed by its debtholders as compared to the capital of the owners.
Financial ratios	The relationship between the numbers on the financial statements.
Financial statement analysis	An analysis of both the financial statement numbers and the trends in those numbers over time.
Gross profit	Total sales less the cost of goods sold. This figure does not take expenses into account.
Inventory turnover	A measure of how effectively the company manages its inventory.
Leverage	The use of debt to finance investment in a firm.
Quick ratio (acid test ratio)	The quick assets (cash, marketable securities, accounts receivables, prepaids, and notes receivable) of a company divided by the total current liabilities (accounts payable and notes payable due within a year).
Receivables turnover	A measure of how quickly a company collects its accounts receivable.
Return on sales	Net income divided by sales. This is one of the most common ratios calculated.

Financial Statement Analysis

Financial statement analysis looks at the relationship between the financial statement numbers and their trends over a period of time. On the one hand, this analysis is looking to see if past performance will predict the future performance of the company. On the other hand, it looks at the numbers to find problem areas. If the analysis discovers a tremendous increase in inventory buildup without a similar increase in sales, then this could be a problem area. Too much money is tied up in inventory.

The relationships between the amounts on the financial statements are called *financial ratios*. To calculate a ratio, divide one number by another number. The result is the relationship of the top number to the bottom number. There are hundreds of ratios that can be calculated. Each can tell you something about the health of the company.

If you take the net income and divide it by the sales, the resulting *return on sales* ratio tells you how much profit the company made on each dollar of sales. Different industries will have different amounts. For example, the grocery industry will typically have a 1 to 2 percent ratio, while Microsoft in 2008 had a ratio of 29 percent. This means that grocery stores make 1 to 2 cents for each dollar of sales, while Microsoft made 29 cents for each dollar of sales.

Such ratio calculations provide more information when you compare them to other companies in the same industry of similar size. They also provide better information if you can compare them for more than one year.

Who uses this type of analysis? Everybody should: managers, bankers, lenders, government agencies, even employees. Say you set up a lemonade stand on a busy street corner one Saturday; you spent money on supplies and gas to get there. What if nobody stopped? Did you make or lose money? The next weekend, you moved your lemonade stand in front of a grocery store, and every other customer coming out purchased a cup of lemonade. You made a lot of money. Was your business decision a sound one? How did you make that decision? Could part of that decision have come from your financial analysis of the previous weekend?

Hands-On 1 Use Financial Statement Analysis

In this exercise, you will make decisions based on your analysis of the situation after looking at the finances of the organization.

1. Look at the following table.

	Sales (in millions)			
	Year 1	**Year 2**	**Year 3**	**Year 4**
Plant 1	1,000	4,000	7,000	
Plant 2	3,000	5,000	7,000	
Plant 3	5,000	3,000	1,000	

2. Look at the pattern of sales. What do you think will happen in Year 4? Indicate which way you think sales will go by placing a down arrow or an up arrow.

3. You just found out you need to select one plant for closure. Which one would you select, based on the data in the table?

_____

4. Look at the second table. This table shows the net income and the return on sales for each plant.

5. Does the additional information make your job harder or easier?

Return on Sales (in millions)

	Year 1	Year 2	Year 3
Plant 1: Sales	**1,000**	**4,000**	**7,000**
Net Income	200	800	950
Return on Sales	0.20	0.20	0.136
Plant 2: Sales	**3,000**	**5,000**	**7,000**
Net Income	350	700	850
Return on Sales	0.117	0.14	0.121
Plant 3: Sales	**5,000**	**3,000**	**1,000**
Net Income	950	750	450
Return on Sales	0.19	0.25	0.45

6. Which plant would you close now?

_____

7. Do you have enough information to make an informed decision?

_____

Ratios

There are many different ratios you can use. The ratios can be broken down into four categories: *liquidity, leverage*, *activity,* and *profitability.* You will learn about each ratio by examining selected financial data from financial statements of publicly traded companies.

Liquidity Ratios

Liquidity ratios are those that are used to determine the ability of the company to pay off its short-term debts ("short-term" is usually defined as less than one year). *Liquidity* means how much cash the company can get together in an emergency situation. The liquidity ratios include the *current ratio*, the *acid test or quick ratio*, and the *cash to current liabilities* ratio.

Current ratio: This is the relationship between current assets and current liabilities. It tells a business what its ability is to pay its current debts. The higher the value of the ratio, the larger margin of safety the company has to cover short-term debts. This ratio is calculated by dividing the total current assets by the total of the current liabilities:

Using words:
(Cash + Receivables + Inventory) / Current Liabilities = Current Ratio

Using numbers:
10 / 5 = 2

This means the business has $2 in cash for every dollar of current debt. The rule of thumb is that a current ratio less of than 2 could suggest problems with the liquidity of the firm.

Current assets include cash and assets that can be readily converted to cash within a short period of time, such as marketable securities, accounts receivable, inventories, work in progress, etc. Prepaid expenses should be included; those payments were made in advance and will not have to be paid in the near future. Prepaid items can be canceled and the remaining cash value returned to the business. For example, think of a magazine subscription. If you cancel it, then you get reimbursed for the issues that had not been delivered.

Current liabilities include accounts payable, bank overdraft, accrued expenses, short-term advances, income tax payable, and dividends payable.

An arrangement with a bank is often considered a long-term liability. However, an overdraft facility may be canceled at any time. It seems advisable to include an overdraft facility in current liabilities. An overdraft facility is similar to a line of credit that a company can draw upon. If a company does not make periodic payments on the line of credit, then the bank may cancel the line of credit.

This ratio is not the most helpful one, because it measures only the quantity of the current assets. It does not look at their quality. What if the accounts receivable are too old and not collectible? Some of the assets, such as work in progress, may not be converted easily to cash.

Acid test ratio (also known as the *quick ratio*): This is the acid test of liquidity for a company. It represents the true *working capital* (cash, accounts receivable, prepaids, and notes receivables available to meet the current debt obligations). Quick assets include cash and marketable securities.

Using words:
Total Quick Assets / Total Current Liabilities = Quick Ratio

Using numbers:
100 / 185 = 0.54

This means the company has 54 cents of assets to meet each dollar of its current liabilities. This ratio is more meaningful than the previous one because it takes inventory out of the calculation. Depending on how the inventory was handled, some of it could be outdated or stale and have less value now than when purchased. A company should have at least $1 of assets to meet each dollar of its current liabilities.

Cash to current liabilities: This is a useful ratio because it doesn't consider selling marketable securities, accounts receivable, or inventory. It is a basic benchmark of how much cash is in the company's pocket.

Using words:
Total Cash / Current Liabilities = Cash to Current Liabilities

Using numbers:
450 / 1,000 = 0.45

This means that the company has 45 cents for every dollar of current liabilities. This is not a good sign. If the creditors were to call all current debt, then this company would be in trouble. It's a good idea to have at least $1 of cash for every dollar of debt.

The liquidity ratios come from the balance sheet, so these measures of liquidity refer to the day the balance sheet was created.

Hands-On 2 Calculate Liquidity Ratios

In this exercise, you will calculate three liquidity ratios to determine the profitability of the Lofty Note Music Company. The data and ratios are listed in the following table.

The Lofty Note Music Company	
Cash	6,400
Short-term investments	4,000
Accounts receivable	3,500
Inventory	300
Other current assets	700
Current assets	14,900
Current liabilities	6,500
Total liabilities	7,500
Owner's equity or net worth	10,000
Current ratio	
Acid test ratio	
Cash to current liabilities	

1. What comments can you make about the firm?

_____

_____

_____

Leverage Ratios

Leverage is the act of borrowing that permits a company to purchase more assets than the stockholders pay for through their investments. Leverage ratios show the extent to which a company is using borrowed funds to purchase assets. By using leverage to increase its investment in operations, a company does not have to increase its equity. Higher leverage means that the company can borrow more money to purchase additional assets; the additional assets generate increased sales; increased sales mean that net income should increase.

For example: Your investors have invested $5,000,000 in your firm. This gives you $5,000,000 in equity. To increase your operating capital, you go to the bank and get a loan for an additional $10,000,000. Your firm is now worth $15,000,000. You have that much more money to invest in the business operation. This will help you increase value for the stockholders.

When it comes to leverage, investors like high leverage because it increases the size of the company without requiring additional investments. Bankers like low leverage because they want to make sure the company can repay its debt. The major disadvantage of high leverage is that if the company were to go bankrupt, the debtholders have first claim to the assets of the firm. The stockholders might be left with nothing on their original investment.

The key leverage ratios are the *debt ratio*, *debt-to-equity ratio*, and *interest coverage ratio*.

Debt ratio: This frequently used ratio compares the amount of liabilities to the amount of assets. It tells you how much money the company has borrowed to increase its size. If the ratio is greater than 1, it indicates that the company has more debt than assets. If the ratio is less than 1, it means that the company has more assets than debt.

Using words: Total Liabilities / Total Assets = Debt Ratio

Using numbers: 36,507 / 72,793 = 0.50

Hands-On 3 Calculate Debt Ratio

In this exercise, you will calculate the debt ratio for Microsoft for the years 2006 through 2008.

1. Locate the asset and liability information in the following table.

Microsoft (in millions)	2006	2007	2008
Total Assets	69,597	63,171	72,793
Total Liabilities	29,493	32,074	36,507
Debt Ratio			

2. Make the calculations. Write the solutions in the last row of the table.
3. What is happening with the company?

_____

_____

Debt-to-equity ratio: This ratio tells what proportion of equity and debt the company is using to finance its assets. If the ratio is greater than 1, then the assets are financed primarily with debt. If the ratio is less than 1, then equity is providing a majority of the financing.

Using words:
Total Liabilities / Owner's Equity or Net Worth = Debt-to-Equity Ratio

Using numbers:
36,507 / 36,286 = 1.006

The result shows $1.006 of debt for every dollar in equity or net worth to meet this obligation. (Or to round the solution, $1.01 to $1.)

Interest coverage ratio: When a company borrows money, it is usually charged interest. The interest coverage ratio measures the ability of the firm to service its debt with money earned from the primary source of business.

Using words:
Operating Income / Interest Expense = Interest Coverage Ratio

Using numbers:
18,000 / 2,000 = 9

The higher the ratio, the healthier the company is. A ratio close to 1 or less than 1 could indicate that the company has difficulty paying its interest.

Hands-On 4 Calculate Debt Equity and Interest Coverage

In this exercise, you will calculate both the debt equity ratio and interest coverage ratio using information from Microsoft.

Microsoft (in millions)	2006	2007	2008
Total Liabilities	29,493	32,074	36,507
Owner's Equity	40,104	31,097	36,286
Debt-to-Equity Ratio			
Operating Income	12,599	14,065	17,681
Interest Expense	0	0	0
Interest Coverage			

1. What could you say about this firm?

_____

_____

_____

Check figure: Debt-to-equity in 2006 = 73.54 percent; interest coverage is not applicable in this case

Activity Ratios

Activity ratios show how efficient a company is in the use of its assets. Three key activity ratios are *sales to total assets*, *receivables turnover*, and *inventory turnover.*

Sales to total assets: This ratio tells us how much revenue the assets are providing the business. If the ratio is low, then the assets are not providing adequate revenue. This is also known as total assets turnover. It shows how the company's managers are using both short-term and long-term assets to generate sales.

Using words:
Sales / Total Assets = Sales to Total Assets

Using numbers:
60,420 / 72,793 = 83%

A higher ratio means the investment required in assets to generate sales revenue is less, which ultimately increases the profitability of the business. There is no normal ratio; just remember that you want this number to be high (greater than 0). If you had to choose between two companies—one with a sales to total assets ratio of 85 percent and the other with a ratio of 10 percent—which one would you choose?

Receivables turnover: This ratio tells how quickly a company collects its accounts receivable. It is often reported in a number of days, in which case it is called the *collection period*.

Using words:
Annual Credit Sales / Accounts Receivable = Receivables Turnover

Using numbers:
18,000 / 2,000 = 9 times

Using words:
Accounts Receivable / (Annual Credit Sales / 365) = Collection Period

Using numbers:
2,000 / (18,000 / 365) = 40.56 days

The first calculation resulted in a receivables turnover of 9. You would have to divide that to figure out the number of days the credit was extended. The collection period calculation told you right away that the accounts receivable were collected in an average of 41 days.

Every industry has different normal collection periods. For instance, the collection period for a newspaper could be 20 to 30 days; the collection period for an advertiser could be 180 days. If the collection period is too long, it might indicate that the company is having trouble collecting. Accounts receivable have value when applying to banks for a loan. However, the age of the accounts receivable, meaning how long they have been outstanding, can adversely affect a bank's decision to lend money against those accounts. In this case, higher or longer is not better.

Inventory turnover: This ratio shows how often the inventory is replaced, or *turned,* during the accounting period. If it is too low, then this might be an indicator that the company is overstocking or that it is not selling its inventory fast enough. The higher the turnover, the better the company is handling its inventory. Inventory should be turned on average at least once a month.

Using words:
Cost of Goods Sold / Average Inventory = Inventory Turnover
(Average Inventory = (Beginning Inventory + Ending Inventory) / 2)

Using numbers:
500,000 / 50,000 = 10 times

This inventory turnover of 10 means the inventory was replaced 10 times, or almost once a month, during the accounting period.

Hands-On 5 Calculate Activity Ratios

In this exercise, you will calculate the activity ratios for Cypress Irrigation for the past two years.

	Year 1	Year 2
Sales	50,000	60,000
Total Assets	40,000	45,000
Annual Credit Sales	25,000	30,000
Accounts Receivable	15,000	17,500
Cost of Goods Sold	10,000	14,000
Average Inventory	1,000	1,250
Sales to Total Assets		
Receivables Turnover		
Inventory Turnover		

1. What can you say about the activity in this company?

_____

_____

_____

Check figure: Inventory Turnover = 11.20 and 10.00

Profitability Ratios

Profitability ratios show how successful a firm is in generating profits. In all of these ratios, the higher the number is, the better the performance of the organization.

Gross Margin: This is the amount of each dollar in sales that the company keeps in the form of gross profit. *Gross profit* is the difference between the sales and the cost of the sales to the company.

Using words:
Gross Profit / Sales = Gross Margin

Using numbers:
48,822 / 60,420 = 0.81

The higher the result, the better it is for the company. This indicates that the company can charge a premium for its goods or services.

Operating Margin: This ratio shows how much a company makes or loses from its primary business per dollar of sales. The number is usually stated as a percentage, and the higher the better.

Using words:
Operating Income / Sales = Operating Margin

Using numbers:
22,492 / 60,420 = 0.37

This is a better indicator of the company's performance because it takes into account not only the cost of sales, but also marketing and other overhead expenses.

Return on assets: This ratio measures how effectively a company uses its assets to generate profits. The number is usually stated as a percentage, and the higher the better.

Using words:
Net Income / Total Assets = Return on Assets

Using numbers:
17,681 / 72,793 = 24.29%

Return on equity: This a measure for shareholders. The ratio measures the profits earned for each dollar invested in the stock of the company. This number is usually stated as a percentage, and the higher the better.

Using words:
Net Income / Shareholder Equity = Return on Equity

Using numbers:
17,681 / 36,286 = 48.73%

Hands-On 6 Calculate Profitability Ratios

In this exercise, you will use the information provided to calculate the profitability ratios. Using the data from the first table, calculate the ratios in the second table.

Apple Inc., 2008 (all numbers in millions)	
Sales	32,479
Gross Profit	11,145
Operating Income	6,275
Net Income	4,834
Total Assets	39,572
Shareholder Equity	21,030

1. The financial data from Microsoft was used in the previous examples. How does Apple compare?

Ratio	Apple	Microsoft
Gross Margin		80.80%
Operating Margin		37.23%
Return on Assets		24.29%
Return on Equity		48.73%

QUICK REFERENCE: SELECTED FINANCIAL RATIOS

Ratio	Calculation	Definition	Better
Debt Ratio	Total Liabilities / Total Assets	Tells what proportion of debt a company has relative to its assets	↓
Acid Test (Quick)	(Cash + Marketable Securities) / Current Liabilities	Measures the amount of cash readily available to handle short-term debt	↑
Current Ratio	Current Assets / Current Liabilities	Shows the firm's ability to pay its current debts	↑
Debt-to-Equity	Total Liabilities / Shareholder Equity	Tells what proportion of equity and debt the company is using to finance its assets	See note
Sales to Total Assets	Sales / Total Assets	Tells how much revenue the assets are providing the business	↑
Inventory Turnover	Cost of Goods Sold / Average Inventory	Measures how often the inventory is replaced during the accounting period	↑
Gross Margin	Gross Profit / Sales	Tells the amount of each dollar in sales that the company keeps in gross profit	↑
Operating Margin	Operating Income / Sales	Tells how much the company makes from each dollar of sales from its primary business	↑
Return on Assets	Net Income / Total Assets	Shows how effective the assets are in generating profits	↑
Return on Equity	Net Income / Shareholder Equity	Measures the profits earned for each dollar invested in the company	↑

NOTE: If debt-to-equity is less than 1, it means equity is providing a majority of the financing; if it is greater than 1, then the assets are financed primarily with debt.

Common-Size Financial Statements

When you analyze financial statements, you are looking at numbers. How can you compare one year's performance with the next? If the sales were greater, then the company is no longer the same size as it was the year before. Who can you compare the company to? It is sometimes difficult to compare one company with another because of the services provided, the products sold, or the size of the companies. The companies are not really alike.

The use of *common-size financial statements* can be helpful. Common-size financial statements show all numbers as a percentage of sales for the year. The following figure shows a company's finances converted into common-size financial statements (sales are in millions). Do you see how much easier it is to compare one year to the next when you use the percentage of sales?

	Income Statement		Common-Size Income Statement	
	2008	**2007**	**2008**	**2007**
Sales	35,000	25,000	100.00%	100.00%
Cost of Goods Sold	(23,000)	(17,000)	(65.71%)	(68.00%)
Gross Profit	12,000	8,000	34.29%	32.00%
Taxes	(2,075)	(1,512)	(5.93%)	(6.05%)
Net Income	9,925	6,488	28.36%	25.95%

Hands-On 7 Calculate the Common-Size Percentages

In this exercise, you will calculate the common-size income statement for Central Coast Chocolates for the years 2007 and 2008.

1. Complete the following table, remembering to make each item a percentage of sales. To make an item a percentage of sales, take the item and divide it by the sales figure.

	Income Statement		Common Size Income Statement	
	2008	**2007**	**2008**	**2007**
Sales	350,000	295,000	100.00%	100.00%
Cost of Goods Sold	225,000	200,000		
Gross Profit	125,000	95,000		
Taxes	25,000	19,000		
Net Income	100,000	76,000		

2. What can you say about the performance of the company from 2007 to 2008?

Limitations of Financial Statement Analysis

Financial statement analysis sounds like such a great tool. However, it does have its limitations. Here are just a few of them:

- Reference points are needed. Ratios should be compared with the historical information of the firm, or to the ratios of a similar firm. Tracking this information down can be difficult. If you go on the Web, you can get a general industry comparison with several key players.
- Ratios are subject to the limitations of the different accounting methods. Choices made in the firm can significantly change ratio values. Cash or accrual basis can make a difference in the ratios. Also, the manner in which you handle inventory can greatly affect the value of the inventory and the ability to dispose of it quickly.
- The industry category of the firm may be difficult to identify. SIC (standard industry classification) codes have long been used to classify businesses. However, some businesses cross several codes, and it is not always easy to accurately fit the business in one code or another. If a business sells products, that usually falls under retail. But what if it also provides lessons and repairs items it does not sell? How should this business be classified?
- Seasonality can affect the ratios. Most businesses have a cycle or a season for their products. In Florida, a surf shop may do reasonably well in the summer surf season but worse in the winter. However, it may add skateboards and bicycles to its inventory, because these products do well year-round. Some business owners change their fiscal year to match the seasonality of their business: September through August, or July through June.

A key benefit of financial statement analysis is that you can see each company's strengths and weaknesses and predict its growth based on past performance. The best technique for analysis is to use all the tools at your disposal. Don't limit yourself to one ratio; try at least 10 of them. If you can get industry analysis figures for your industry, that is even better.

Summary

In this lesson, you learned about financial statement analysis. You learned about the different ratios that can be used to analyze the financial statements of a company. These ratios—measuring liquidity, leverage, activity, and profitability—make the analysis much easier. You also learned about common-sizing financial statements to make them easier to understand and to aid in making comparisons with other firms.

Be cautious when analyzing any company. Do you have all the relevant data? What more do you need? Which facts are you most interested in? Published industry averages are just guidelines. Knowing that a grocery store might average a 1 percent gross margin while a computer manufacturer's could be 37 percent is not going to make a person want to start a computer firm when what she really wants is a mom-and-pop grocery store.

The analysis techniques in this lesson can be applied to small firms, large firms, or firms you might want to invest in. The key is doing the analysis right.

Concepts Review

True/False Questions

1. Financial statement analysis looks at the relationship between the financial statement numbers and their trends over a period of time. **TRUE** **FALSE**
2. The acid test ratio measures the company's ability to collect accounts receivable. **TRUE** **FALSE**
3. The current ratio is the best ratio for measuring liquidity. **TRUE** **FALSE**
4. Liquidity ratios come from the income statement. **TRUE** **FALSE**
5. A debt ratio of greater than 1 means that the company has more assets than debt. **TRUE** **FALSE**
6. Investors like high leverage because it increases the size of a company without requiring additional investment. **TRUE** **FALSE**
7. If the gross margin is high, then it indicates the company can charge a premium for its product or services. **TRUE** **FALSE**
8. A high receivables turnover shows that the company is working hard to make sales. **TRUE** **FALSE**
9. Common-size financial statements show all numbers as a percentage of sales for the year . **TRUE** **FALSE**
10. One of the limitations of financial statement analysis is that you need reference points. **TRUE** **FALSE**

Multiple Choice Questions

1. Who should use financial statement analysis?
   - **a.** Only managers
   - **b.** Only bankers
   - **c.** Only new MBAs
   - **d.** Everyone
2. Which of the following is least necessary when evaluating a company?
   - **a.** Salary schedules
   - **b.** Statement of changes to owner's equity
   - **c.** Balance sheet
   - **d.** Income statement
3. Common-size financial statements are good to work with because:
   - **a.** The pages are the same size.
   - **b.** They show all numbers as a percentage of gross margin.
   - **c.** They show all numbers as a percentage of net income.
   - **d.** They show all numbers as a percentage of sales for the year.
4. Which of the following is not a limitation of financial statement analysis?
   - **a.** The industry category can be difficult to identify.
   - **b.** Accounting practices differ across firms.
   - **c.** Seasonality affects the ratios.
   - **d.** They don't tell you much about the company's growth.

Terms You Should Know

In your own words, write a definition for each of the following terms.

Common-size financial statements _____

_____

Cost of goods sold _____

_____

Financial ratios _____

_____

Financial statement analysis _____

_____

Gross profit _____

_____

Leverage _____

_____

Skill Builders

Skill Builder 1 Use Financial Statement Analysis

You have just been promoted, and one of your tasks is to invest your firm's hard-earned money in another company. There are two companies that the president of the firm is considering. She wants you to analyze the companies and give her your recommendations.

	Company 1		Company 2	
Income Statement	**2008**	**2007**	**2008**	**2007**
Sales	60,420	51,122	32,479	24,006
Cost of Revenue	11,598	10,693	21,334	15,852
Gross Profit	48,822	40,429	11,145	8,154
Operating Income	22,492	18,524	6,275	4,409
Net Income	17,681	14,065	4,834	3,496
Balance Sheet				
Current Assets	43,242	40,168	34,690	21,956
Total Assets	72,793	63,171	39,572	25,347
Current Liabilities	29,886	23,754	14,092	9,299
Total Liabilities	36,507	32,074	18,542	10,815
Stockholder Equity	36,286	31,097	21,030	14,532

1. What do you notice right away about both companies?

_____

_____

2. What other information would be helpful to you in your analysis?

_____

_____

Skill Builder 2 Calculate Liquidity Ratios

In this exercise, you will calculate liquidity ratios to determine the profitability of the two firms. The data is provided in the table below.

1. Calculate the ratios and write the results in the table directly.

(Figures in millions)	High Ride Details	Low Ride Details
Cash	9,500	7,000
Short-Term Investments	6,000	4,500
Accounts Receivables	5,000	5,000
Inventory	350	500
Other Current Assets	1,500	1,000
Current Assets	22,350	18,000
Current Liabilities	9,300	12,000
Total Liabilities	10,850	13,000
Owner's Equity or Net Worth	14,500	9,984
Current Ratio		
Acid Test Ratio		
Cash to Current Liabilities		

2. What comments can you make about the firms?

Skill Builder 3 Calculate Leverage Ratios

You are a junior loan officer. Two business owners have been in to visit with you. They both want to borrow some money to expand their businesses. Calculate the leverage ratios for both firms using the information in the table below.

	C Company	D Company
Total Assets	2,500,000	1,000,000
Total Liabilities	50,000	800,000
Owner's Equity	2,450,000	200,000
Operating Income	250,000	100,000
Interest Expense	1,000	52,800
Debt Ratio		
Debt-to-Equity Ratio		
Interest Coverage		

1. What can you say about these firms at first glance?

Skill Builder 4 Calculate Common-Size Percentages

In this exercise, you will calculate the common-size income statement for Central Coast Kayaking for the years 2007 and 2008.

1. Complete the following table, remembering to make each item a percentage of sales.

	Income Statement		Common-Size Income Statement	
	2008	**2007**	**2008**	**2007**
Sales	750,000	595,000	100%	100%
Cost of Goods Sold	555,000	375,000		
Gross Profit	195,000	95,000		
Taxes	45,000	35,000		
Net Income	150,000	60,000		

2. What can you say about the performance of the company from 2007 to 2008?

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Check figures: Net Income = 20.00% and 10.08%

Assessments

Assessment 1 Work with Activity Ratios

In this exercise, you will help Company B with the purchase of Company A. Company A and Company B have been friendly competitors for years. B wants to purchase A. The owner asks you to calculate the activity ratios for both firms to see how they compare.

	Company A	Company B
Sales	175,000	140,000
Total Assets	200,000	175,000
Annual Credit Sales	100,000	95,000
Accounts Receivable	50,000	30,000
Cost of Goods Sold	130,000	100,000
Average Inventory	15,000	9,000
Sales to Total Assets		
Receivables Turnover		
Inventory Turnover		

1. What can you say about the activity in these firms?

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Check figures: Inventory Turnover = 8.67 and 11.11

Assessment 2 Work with Profitability Ratios

In this exercise, you will use selected financial information about Catalina Sports for the past three years. Calculate the profitability ratios and tell what you think is happening.

Catalina Sports
(All numbers in millions)

	2008	2007
Sales	35,000	24,000
Gross Profit	10,000	8,000
Operating Income	6,500	4,500
Net Income	4,000	3,500
Total Assets	35,000	25,000
Shareholder Equity	21,000	14,000
Gross Margin		
Operating Margin		
Return on Assets		
Return on Equity		

1. What can you determine from looking at the ratios for the past couple of years?

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Check figures: 2008 figures = 28.57%, 18.57%, 11.43%, and 19.05%

Assessment 3 Work with Common Sizing

In this exercise, you will calculate the common-size income statements for Northwestern Kayaking and Humboldt Kayaks.

1. Complete the following table, remembering to make each item a percentage of sales.

	Northwestern Kayaking		Humboldt Kayaks	
	Income St.	**Common-Size**	**Income St.**	**Common-Size**
Sales	1,500,000	100.00%	1,675,000	100.00%
Cost of Goods Sold	895,000		1,350,000	
Gross Profit	605,000		325,000	
Taxes	65,000		30,000	
Net Income	540,000		295,000	

2. What can you say about the performance of the companies?

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Check figure: Net Income Common-Size = 36% and 17.61%