

# Essentials of Financial Statement Analysis

## An Introduction to Financial Statement Analysis

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## Financial Statements Quick Review

### Balance Sheet

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#### **Purpose**

The balance sheet is the most basic and essential financial statement. It is described by the basic accounting equation:  $A = L + OE$ , ('A' means assets, 'L' means liabilities, and 'OE' means owner's equity.) The purpose of the balance sheet is to show the wealth of a business (assets) and the two possible claims on that wealth, which are the creditors' claims (liabilities) and the owner's claim (called owner's equity, partners' equity, or stockholders' equity.) at a given point in time. There are two main sources of owner's equity: investments by the owner(s) and the business operations.

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#### **Key Issues**

Two key issues concerning a balance sheet are:

1. How items are classified on the balance sheet.
  2. How the assets and liabilities are valued, which is to say, how the dollar value is calculated. The dollar value is recorded initially at its original transaction value, which is usually called "historical cost." As time passes, generally accepted accounting principles (GAAP) may require valuation adjustments to the original value of some assets.
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#### **Example**

The example below shows a balance sheet after the close of business on June 30, 2008. The assets and liabilities are classified by type and by current compared to long-term (longer than a year). This example shows total business assets with a value of \$410,120. Of that amount, creditors have a claim of \$173,850 and the residual amount of \$236,270 is claimed by the owner. If this were a partnership, owner's equity would be called partners' equity and two or more owner's names would be shown. If this were a corporation, the equity would be called stockholders' or shareholders' equity. The equity would then be subdivided into sections showing the sources, such as paid-in capital from stock sold, and retained earnings from operations.

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**Balance Sheet**, *continued*

<b>Sioux City Enterprises</b>		
<b>Balance Sheet</b>		
<b>June 30, 2008</b>		
<b>Assets</b>		
Current Assets		
Cash	\$ 41,300	
Short-term investments	28,250	
Accounts receivable	29,450	
Merchandise inventory	69,650	
Office supplies	<u>920</u>	
Total current assets		\$169,570
Property, Plant, and Equipment		
Office equipment	25,800	
Less: Accumulated depreciation	<u>6,850</u>	18,950
Store equipment	314,500	
Less: Accumulated depreciation	<u>92,900</u>	<u>221,600</u>
Total assets		<u><u>\$410,120</u></u>
<b>Liabilities and Owner's Equity</b>		
Current liabilities:		
Wages payable	\$ 3,200	
Accounts payable	34,200	
Interest payable	1,450	
Current portion of long-term debt	<u>3,200</u>	
Total current liabilities		\$ 42,050
Long-term liabilities		
Notes payable	135,000	
Less: current portion (above)	<u>3,200</u>	
Total long-term liabilities		<u>131,800</u>
Total liabilities		173,850
Owner's equity:		
R. Chandra, capital		<u>236,270</u>
Total liabilities and Owner's Equity		<u><u>\$410,120</u></u>

## Income Statement

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### **Purpose**

The income statement is a “change statement” that shows the change in equity as a result of operating a business during a specific period of time.

The income statement shows the change in owner’s equity (or partners’ or stockholders’ equity) that results from the sales made to customers (revenues) minus the resources consumed to operate the business (expenses). When revenues exceed expenses (net income) assets increase and/or debt decreases. When expenses exceed revenues (net loss) assets decrease and/or debt increases.

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### **Key Issues**

The key issues concerning the income statement are the proper classification, correct amounts, and timing of revenues and expenses into the correct accounting periods.

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### **Example**

The example below shows an income statement. The income statement shows the revenues and expenses for the six months ended June 30, 2008. This business has a net income of \$40,150 for the period, which means that the owner’s equity increased by that amount as a result of operating the business. Notice the importance of recording in the correct period. If some revenue or expense on this income statement were recorded in the prior or the next period, this would change the results on income statements for two periods and change the trend in the revenue or expense, and net income.

This example contains a detailed listing of expenses. These are sometimes condensed into categories called “operating expenses” and “other expenses”.

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**Income Statement, continued**

<b>Sioux City Enterprises</b>		
<b>Income Statement</b>		
<b>For the Six Months Ended June 30, 2008</b>		
Revenues		
Net sales		\$368,900
Rental Income		<u>2,000</u>
Total Revenue		370,900
Expenses		
Cost of goods sold	\$266,000	
Salaries and wages expense	45,200	
Rent expense	4,000	
Advertising expense	3,880	
Utilities expense	3,200	
Freight-out expense	2,960	
Insurance expense	2,150	
Depreciation expense	1,550	
Interest expense	<u>1,450</u>	
Total expenses		<u>330,390</u>
Net income		<u><u>\$ 40,510</u></u>

**Articulation**

The income statement and balance sheet are closely connected to each other. Revenues, expenses, and net income or loss on the income statement affect what is reported on the balance sheet. This is called “articulation”. Volume 1 of Basic Accounting Concepts, Principles, and Procedures provides detailed examples of articulation.

**Statement of Owner’s Equity****Purpose**

The statement of owner’s equity (or partners’ equity, or stockholders’ equity) summarizes the changes to owner’s equity for a specific period of time. This generally consists of: (1) the net income or net loss from the income statement, (2) the total of the owner(s) investments in the business, and (3) the total of the owner’(s) withdrawal of assets from the business. In a proprietorship or partnership, these items are usually limited and relatively easy to follow. In a large corporation, they can become more involved and complex, and are reported in a statement of stockholders’ equity.

## Statement of Cash Flows

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<b>Purpose</b>	The statement of cash flows explains the change in cash for a specific period of time. This usually corresponds to the same period of time used for the income statement and statement of owner's equity. The change in cash is explained by three types of business activities: operating, investing, and financing.
<b>Key Issue</b>	The key issue concerning the statement of cash flows is whether a transaction has been properly classified as an operating, investing, or financing activity.
<b>Operating Activities</b>	Operating activities relate to the cash effects of the transactions that make up net income. In effect, the cash flow from operating activities shows the income statement on a cash basis instead of an accrual basis. Cash flow from operating activities shows the cash results from the essential recurring operations of a business, and it is the most important part of the statement of cash flows.
<b>Investing Activities</b>	Investing activities relate to the increases and decreases in cash from transactions that involve buying and selling long-term assets and activities that involve buying and selling investments, including making and collecting loans.
<b>Financing Activities</b>	Financing activities relate to the cash effects of the transactions that involve obtaining and paying back sources of business capital, such as loans and investments in the business. (This does not include short-term debt related to operating activities.)
<b>Format</b>	<p>The statement of cash flows presented below is shown in the most popular format. The operating activities section begins with net income and makes two types of adjustments to net income to convert it to a cash basis:</p> <ul style="list-style-type: none"> <li>■ <b>Add</b> operating items that increase cash and are not part of the net income calculation or items that reduced net income but did not use cash.</li> <li>■ <b>Deduct</b> operating items that use cash and are not part of the net income calculation or items that increased net income but did not increase cash.</li> </ul> <p><i>Note:</i> An alternative format is sometimes used. The point here is to understand the essential components of the statement. The details of formats and adjustments is a more advanced topic.</p>

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Statement of Cash Flows, *continued*

<b>Superior Office Supply Company</b>		
<b>Statement of Cash Flows</b>		
<b>Years Ended December 31</b>		
	<b>2008</b>	<b>2007</b>
<b>Cash flows from operating activities</b>		
Net income	\$ 167,500	\$ 174,600
Add: Items increasing cash or not reducing cash		
Depreciation expense	58,200	35,100
Decreases in current operating assets	1,400	17,800
Increases in current operating liabilities	25,800	12,900
Less: Items reducing cash or not increasing cash		
Increases in current operating assets	(67,400)	(165,900)
Decreases in current operating liabilities	(29,800)	(4,800)
Increase in cash from operating activities	<u>\$ 155,700</u>	<u>\$ 69,700</u>
<b>Cash flows from investing activities</b>		
Expenditures on plant and equipment	(45,000)	(5,000)
Expenditures on intangible assets	(10,000)	
Decrease in cash from investing activities	<u>\$ (55,000)</u>	<u>\$ (5,000)</u>
<b>Cash flows from financing activities</b>		
Increase in non-trade short-term note payable	25,500	
(Decrease) increase in long-term debt	(30,200)	10,500
Owner cash withdrawals	(55,000)	(40,000)
Decrease in cash from financing activities	<u>\$ (59,700)</u>	<u>\$ (29,500)</u>
Net increase in cash	\$ 41,000	\$ 35,200
Beginning cash balance	414,200	379,000
Ending cash balance	<u>\$455,200</u>	<u>\$ 414,200</u>



**Don't be fooled.** Depreciation is often incorrectly referred to as a “source of cash” because it is a well-known adjustment that is added back to net income as you see above. *Depreciation is not literally a source of cash.* It is simply a non-cash expense deduction that reduces net income but does not require the use of any cash. So, depreciation is added back to net income to cancel out the deduction for the purpose of calculating the cash flow. In fact, the same add-back adjustment is made for amortization and for every other non-cash expense (like using up supplies).

## GAAP Review

### GAAP (Generally Accepted Accounting Principles)

#### **What Is GAAP?**

In the United States, GAAP is a set of rules and standards that guide accountants as to when and how to properly record transactions and how to prepare proper financial statements. GAAP is not like unchanging laws of physics. GAAP is designed to meet the needs of society. GAAP is always evolving as the economic environment changes. Also, GAAP only refers to rules of accounting in the United States. Different countries have different rules for different purposes.

#### **Broad GAAP**

There are a few broad GAAP principles that provide general guidance and that apply to all types of transactions. These are fundamental accounting rules. These are like general traffic laws. Example: The historical cost principle requires that all transactions be recorded at original transaction value unless a specific GAAP rule creates an exception.

#### **Specific GAAP**

Specific GAAP rules offer specific direction for important kinds of specific situations. As you continue your study of accounting and learn how to record specific types of transactions, you will learn specific GAAP rules.

Examples of some specific GAAP rules are:

- How uncollectible accounts receivable should be recorded
- Acceptable methods for calculating inventory cost
- Requirements for changing inventory values
- How interest should be calculated on certain kinds of debt

#### **GAAP Is Not Perfect**

Just as with other kinds of rules, GAAP is not perfect. GAAP is often subject to interpretation. Estimates are frequently required. The application of different methods is allowed, which can make comparability difficult to achieve. However, despite shortcomings, GAAP is essential to financial reporting.

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## GAAP (Generally Accepted Accounting Principles), *continued*

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### Where Does GAAP Come From?

There is no single source or listing of GAAP! There are a number of different sources, some more important than others.

- *Official Pronouncements:* An official pronouncement is a formal and authoritative document issued by the **Financial Accounting Standards Board (FASB)**, which is the standard-setting authority in the accounting profession. The FASB is an independent organization that derives its authority from the Federal Securities and Exchange Commission and the fact that state licensing boards for accountants accept the FASB pronouncements as highest authority.

The pronouncements of the FASB are called **Statements of Financial Accounting Standards (SFAS)**. An SFAS prescribes how certain kinds of transactions must be recorded, and presented and explained on financial statements.

- *FASB Technical Guides:* The next authoritative level below an SFAS is a technical guide, usually dealing with narrow or very specific subject matter.

*Examples:*

- FASB Technical Bulletins
  - AICPA (American Institute of CPAs) Statements of Position and Practice Bulletins
  - EITF (Emerging Issues Task Force) Positions and Recommendations
- *Industry Practice:* Industry practice is a source of GAAP. Historically, some industry practices have achieved wide acceptance over many years. Sometimes this has created conflict and a lack of consistency within GAAP because the practices serve the purposes of different groups. To a diminished degree, this process continues today.
  - *Other Accounting Literature:* Research publications by educators, journal articles, textbooks, professional association publications, and AICPA technical practice aids are examples of this source of GAAP. These are the least authoritative GAAP sources.

### International Standards

The International Accounting Standards Board (IASB) is an independent organization with the goal of developing a single set of comprehensive global accounting standards. The FASB currently has several major projects underway with the IASB working towards uniform standards.

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## Trend Analysis Using a Reference Base

### Overview

#### Introduction: Your New Business

We begin our discussion by assuming that you have just recently taken over the management of your (imaginary) family business. The business is a wholesale office supply store that primarily sells office supplies and office equipment on account to retail merchants. One of the first things that you need to do is to analyze the financial statements of the business to judge its condition and to decide if you need to make any changes in the operations and management.

#### A Reference Base

A reference base is simply a selected amount that is used to compare to other numbers. The comparison is usually done by calculating the other numbers as a percentage of the reference base amount.

#### Example

Suppose that you are given the following sales amounts:

	2008	2007	2006	2005
Sales	\$75,000	\$48,000	\$55,000	\$50,000

**Comparing totals:** If you want to compare the total sales for each year to the year 2005, then the 2005 sales of \$50,000 is your reference base amount. Divide each year's sales by the base amount.

	2008	2007	2006	2005
Sales	150%	96%	110%	100%

*Example:* The 2006 sales compared to 2005 is:  $\$55,000/\$50,000 = 110\%$ .

**Comparing changes:** If you want to compare the change for each year to the base amount, calculate the difference and divide by the base amount.

	2008	2007	2006	2005
Sales	50%	(4%)	10%	—

*Example:* The 2006 percent change is:  $(\$55,000 - \$50,000)/\$50,000 = 10\%$ .

## Horizontal Analysis

### Overview

**Horizontal analysis** is a comparison of financial statement information over a period of time. Both dollar amounts and percentage amounts are evaluated to identify changes and trends from the base year. Watching trends over an extended time period is an extremely valuable analytical procedure.

### Balance Sheet Example

The example below shows a two-year horizontal analysis of comparative balance sheets for your business, with 2007 as the base year.

<b>Superior Office Supply Company</b>				
<b>Condensed Balance Sheet</b>				
<b>December 31</b>				
	2008	2007	Increase or (decrease)	
			Amount	Percent
<b>Assets</b>				
Current assets				
Cash and cash equivalents	\$ 455,200	\$ 414,200	\$ 41,000	9.9%
Short-term investments	35,500	36,900	(1,400)	(3.8%)
Accounts receivable, net	286,200	255,800	30,400	11.9%
Inventory	492,100	456,900	35,200	7.7%
Prepaid expenses	52,300	50,500	1,800	3.6%
Total current assets	<u>\$1,321,300</u>	<u>\$1,214,300</u>	<u>\$107,000</u>	<u>8.8%</u>
Property, plant, and equipment	\$ 990,500	\$ 945,500	\$ 45,000	4.8%
Less: Accumulated depreciation	365,000	306,800	58,200	19.0%
Net property, plant, and equip.	<u>\$ 625,500</u>	<u>\$ 638,700</u>	<u>\$ (13,200)</u>	<u>(2.1%)</u>
Intangible assets	110,000	100,000	10,000	10.0%
Total assets	<u>\$2,056,800</u>	<u>\$1,953,000</u>	<u>\$103,800</u>	<u>5.3%</u>
<b>Liabilities and Owner's Equity</b>				
Current liabilities				
Accounts payable	\$ 414,700	\$ 388,900	\$ 25,800	6.6%
Short-term notes payable	50,000	24,500	25,500	104.1%
Other current liabilities	185,600	215,400	(29,800)	(13.8%)
Total current liabilities	<u>\$ 650,300</u>	<u>\$ 628,800</u>	<u>\$ 21,500</u>	<u>3.4%</u>
Long-term debt	551,400	581,600	(30,200)	(5.2%)
Total liabilities	<u>\$1,201,700</u>	<u>\$1,210,400</u>	<u>\$ (8,700)</u>	<u>(0.7%)</u>
Your Name, capital	\$ 855,100	\$ 742,600	\$112,500	15.1%
Total liabilities and owner's equity	<u>\$2,056,800</u>	<u>\$1,953,000</u>	<u>\$103,800</u>	<u>5.3%</u>

## Measures of Liquidity

### Overview

**Liquidity** means the ability to obtain cash needed to pay current liabilities as they come due and to pay unexpected short-term obligations. If a business cannot pay these immediate obligations, it will cease to operate. Owners, managers, suppliers, and lenders are very concerned with liquidity. We will examine the following ratios to evaluate liquidity condition: (1) current ratio, (2) quick ratio, (3) receivables turnover ratio, and (4) inventory turnover ratio.

### Current Ratio

The current ratio is a comparison of the amount of current assets to the amount of current liabilities. Current assets are called **liquid assets** because they provide cash to pay current liabilities or represent prepayments.

The current ratio is:  $\frac{\text{total current assets}}{\text{total current liabilities}}$

#### Example for Superior Office Supply Company

2008	2007	Industry Average
$\frac{\$1,321,300}{\$650,300} = 2.03$	$\frac{\$1,214,300}{\$628,800} = 1.93$	1.4

#### Interpretation

The current ratio has improved somewhat. At the end of 2008, about \$2.03 of current assets were available for every dollar of current liabilities. The ratio exceeds the industry average benchmark.

### Quick Ratio (Acid-Test Ratio)

The quick ratio is a measure of how well a business could pay current liabilities if they all came due quickly. This ratio uses only highly liquid assets (called **quick assets**) compared to current liabilities. The assets used are cash, short-term investments, and all current receivables net of allowances.

The quick ratio is:  $\frac{\text{cash} + \text{short term investments} + \text{current receivables (net)}}{\text{total current liabilities}}$

#### Example for Superior Office Supply Company

2008	2007	Industry Average
$\frac{\$455,200 + \$35,500 + \$286,200}{\$650,300} = 1.19$	$\frac{\$414,200 + \$36,900 + \$255,800}{\$628,800} = 1.12$	.5