



Harvard Business School Press  
POCKET MENTOR

# UNDERSTANDING FINANCE

Budgeting • Financial Statements • Accounting Methods • Cost/Benefit Analysis



Expert Solutions to Everyday Challenges

# Understanding Finance

*Expert Solutions to Everyday  
Challenges*

Harvard Business Review Press

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# Mentors' Message: Why Understand Finance?

No matter where you work in your organization, understanding basic financial concepts will help you do your job better and contribute to your company's efforts to stay in business and turn a profit.

*Understanding Finance* explains the basics of this important subject. It will not make you a finance expert, nor will it qualify you to become a financial analyst, controller, or chief financial officer (CFO). But it *will* explain what you need to know to be an intelligent consumer of financial information, to plan, and to use financial concepts in making business decisions.

Reduced to its essentials, business finance is about acquiring and allocating the resources a company needs to operate. Regarding resource *acquisition*, finance is concerned with questions such as:

- How will our company acquire and finance its inventory, equipment, and other physical assets?
- Should we use the owners' money, borrowed funds, or internally generated cash for resource acquisitions?
- How long does it take to collect money owed to us by customers?

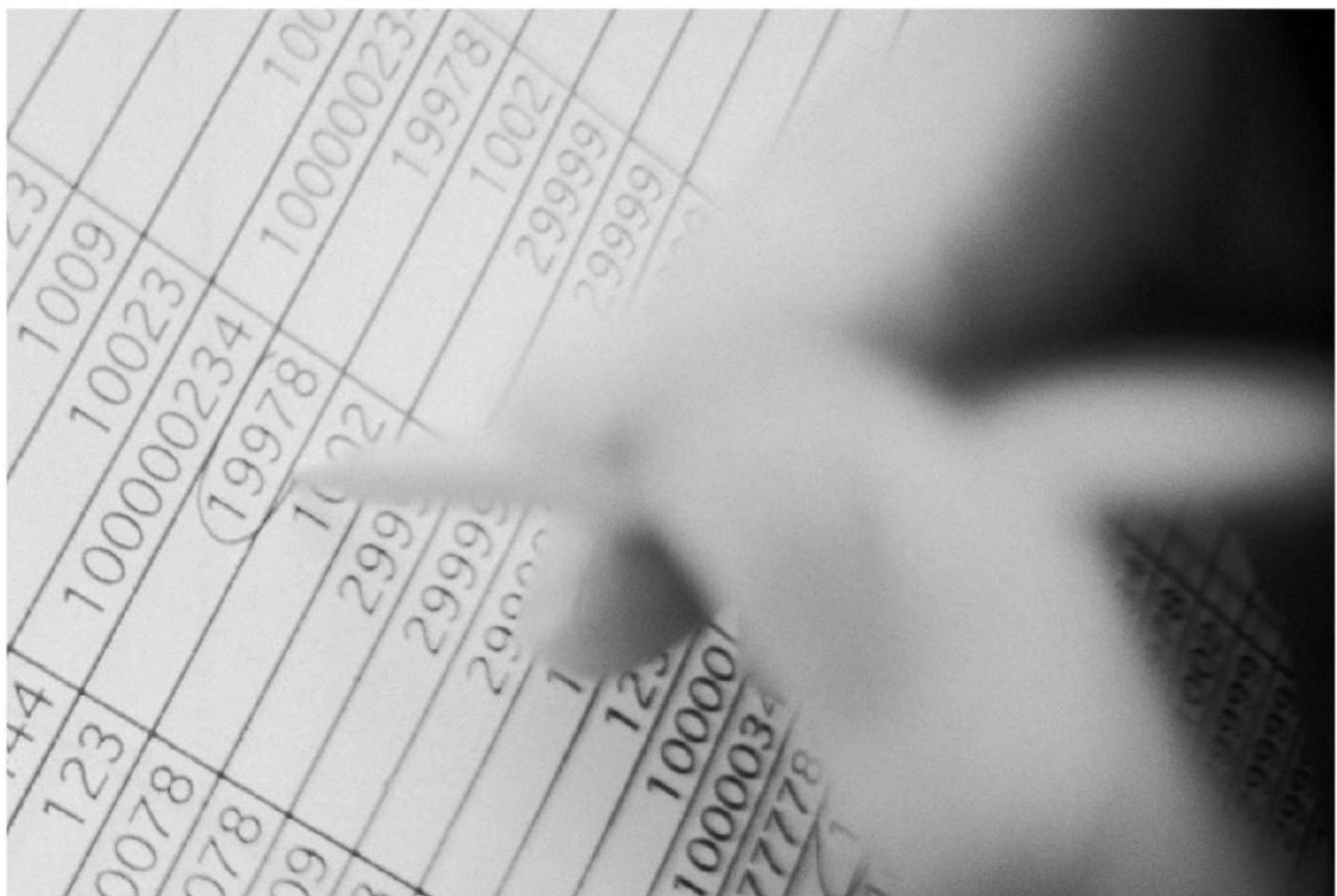
And regarding resource *allocation*, finance helps managers answer questions like:

- If we could invest in several ventures, how might we determine which would ultimately generate the greatest value?

dozens of companies, from entrepreneurial firms to *Fortune* 500 organizations, helping them create financial literacy programs that transform employees, managers, and leaders into *business partners*. She is also coauthor, along with Joe Knight, of *Financial Intelligence: A Manager's Guide to Knowing What the Numbers Really Mean* (Harvard Business School Press, 2006).

# Understanding Finance: The Basics

# Understanding Financial Statements



*But it is pretty to see what money can do.*

—Samuel Pepys

**COMPANIES DO** many things: build cars, process data, provide services, and even launch satellites. But the underlying purpose of all for-profit companies is to make money. As a for-profit manager,

your job is to help the company make money—preferably, more money each year. Even if you work in the nonprofit or government sectors, where net income is neither the only nor the most important bottom line, it is still vital that you carefully monitor how much money comes in and where it gets spent.

You can help your company make money by reducing costs, increasing revenues, or both. You can also help the organization be financially successful by making good investments and using its assets to their fullest extent. The best managers don't just mind the budget—they look for the right combination of controlling costs, improving sales, and utilizing assets.

How's your company's financial health? Where does its revenue come from, and where does it spend its money? How much profit is it making? Where is its cash coming from, and where is it going to? Companies provide answers to such questions in three documents, called *financial statements*: the income statement, the balance sheet, and the cash flow statement. Publicly traded companies make these statements available to everyone—shareholders, industry analysts, and competitors as well. As a result, they are not as detailed as the company's internal financial statements.

## **A c c o u n t i n g   m e t h o d s**

Financial statements follow the same general format from company to company. Depending on the nature of the company's business, however, specific line items may vary. Still, the statements are usually similar enough to allow you to compare one business's performance against another's. The reason for this similarity is that accountants abide by *generally accepted accounting principles*, or GAAP.

Most companies use *accrual accounting*: revenue and expenses are booked when they are incurred, regardless of when they are actually received or paid. This system relies on the matching principle, which helps companies understand the true causes and effects of business activities. Accordingly:

- Revenues are recognized during the period in which the sales activity occurred.
- Expenses are recognized in the same period as their associated revenues.

For example, at Amalgamated Hat Rack Company, which manufactures hat racks from imitation moose antlers, the revenue for a customer order is booked when each hat rack is sold—even if payment is made on account and the cash is not received immediately. Similarly, if Amalgamated receives two thousand brass hooks from a contracted supply company, those hooks are not all expensed at once. Rather, they are expensed on a per-unit basis: if it takes five brass hooks to make one hat rack, then the brass hooks are expensed five at a time as each hat rack is sold.

Occasionally, a very small company will begin its existence using *cash-basis accounting*, which counts transactions when cash actually changes hands. This practice is less conservative when it comes to expense recognition, but sometimes more conservative when it comes to revenue recognition. But as companies increase in size and complexity, it becomes more important to match revenues and expenses in the appropriate time periods, so they tend to switch over to accrual accounting.

## The income statement

You might want to invest in a company for many reasons. Perhaps it's a leader in the industry. Or its CEO has a great record of turning companies around. Or its products are on the cutting edge of technology. But if the company is not turning a profit (otherwise known as net income or earnings), or it doesn't show strong potential to become profitable over the medium term, you probably wouldn't want to invest in it.

The *income statement* tells you whether the company is making a profit—that is, whether it has positive net income. (This is why the income statement is also called a profit and loss statement.) It shows a company's profitability for a specific period of time—

typically, monthly, quarterly, and annually.

How does an income statement present this profitability picture? It starts with a company's revenue: how much money has come in the door from its operations. Various costs—from the costs of making and storing its goods, to depreciation of plant and equipment, to interest and taxes—are then subtracted from the revenue. The bottom line—what's left over—is the *net income* or profit.

Consider the example shown in the table “Income statement for Amalgamated Hat Rack.” (Explanations for key terms follow.)

### ***Income statement for Amalgamated Hat Rack***

Retail sales	\$2,200,000
Corporate sales	\$1,000,000
<b>Total revenue</b>	<b>\$3,200,000</b>
Cost of goods sold	\$(1,600,000)
<b>Gross profit</b>	<b>\$1,600,000</b>
Operating expenses	\$(800,000)
Depreciation expense	\$(42,500)
<b>Operating income</b>	
<b>(also called earnings before interest and taxes)</b>	<b>\$ 757,500</b>
Interest expense	\$(110,000)

<b>Earnings before income tax</b>	<b>\$647,500</b>
Income tax	\$(300,000)
<b>Net income</b>	<b>\$347,500</b>

Source: Harvard ManageMentor® on Finance Essentials, adapted with permission.

The *cost of goods sold* is what it cost Amalgamated to manufacture the hat racks. It includes raw materials, such as fiberglass, as well as direct labor costs.

By subtracting the cost of goods sold from revenue, you get a company's *gross profit*—the profitability of the company's products or services.

*Operating expenses* include administrative employee salaries, rents, sales and marketing costs, as well as other costs of business not directly attributed to manufacturing a product. The fiberglass for making hat racks would not be included here; the cost of the advertising would.

*Depreciation* is a way of estimating the “consumption” of an asset over time. A computer, for example, might have a useful life of three years. Thus, according to the matching principle, the company would not expense the full value of the computer all in the first year of its purchase, but as it is actually used over a span of three years.

By subtracting operating expenses and depreciation from gross profit, you get *operating income*—often called *earnings before interest and taxes*, or *EBIT*.

*Interest expense* refers to the interest charged on loans a company takes out.

*Income tax* is levied by the government on corporate income.

**BOTTOM LINE n 1:** net income (or profit), as shown on

a company's income statement

## The balance sheet

Most people go to a doctor once a year to get a checkup—a snapshot of their physical well-being at a particular time. Similarly, companies prepare *balance sheets* as a means of summarizing their financial positions at a given point in time.

$$\text{Assets} = \text{liabilities} + \text{owners' equity}$$

Assets are the things a company invests in so that it can conduct business—examples include financial instruments, land, buildings, and equipment. In order to acquire necessary assets, a company often borrows money from others or makes promises to pay others. That money, which is owed to creditors, is called *liabilities*. *Owners' equity*, also known as shareholders' equity, includes the capital that investors have provided and the profits retained by the company over time. If a company has \$3 million in assets and \$2 million in liabilities, it would have owners' equity of \$1 million.

$$\begin{array}{rcl} \text{Assets} & = & \text{Liabilities} + \text{Owners' equity} \\ \$3,000,000 & = & \$2,000,000 + \$1,000,000 \end{array}$$

By contrast, a company with \$3 million in assets and \$4 million in liabilities would have negative equity of \$1 million—and serious problems as well.

Thus, the balance sheet provides a description of how much, and where, the company has invested (its assets)—broken down into how much of this money comes from creditors (liabilities) and how much comes from stockholders (equity). Moreover, the

balance sheet gives you an idea of how efficiently your company is utilizing its assets and how well it is managing its liabilities.

Balance sheet data is most helpful when it's compared with information from a previous year. In the table "Amalgamated Hat Rack balance sheet as of December 31, 2004," a comparison of the figures for 2004 against those for 2003 shows that Amalgamated has increased its total liabilities by \$38,000 and increased its total assets by \$38,000, thus resulting in no change in owners' equity. (Explanations for key terms follow.)

The balance sheet begins by listing the assets that are most easily converted to cash: cash on hand, receivables, and inventory. These are called *current assets*.

Next, the balance sheet tallies other assets that have value but are tougher to convert to cash—for example, buildings and equipment. These are called *fixed or long-term assets*.

Since most long-term assets, except land, depreciate over time, the company must also include accumulated depreciation in this part of the calculation. Gross property, plant, and equipment minus accumulated depreciation equals the current *book value* of property, plant, and equipment.

**Tip :** The balance sheet distinguishes between short-term liabilities, also known as current liabilities, and long-term liabilities. Short-term liabilities typically have to be paid in a year or less; they include short-term notes, salaries, income taxes, and accounts payable.

### ***Amalgamated Hat Rack balance sheet as of December 31, 2004***

	2004	2003	Increase/ (decrease)
<b>Assets</b>			
Cash and marketable securities	\$355,000	\$430,000	\$(75,000)
Accounts receivable	\$555,000	\$512,000	\$43,000
Inventory	\$835,000	\$755,000	\$80,000
Prepaid expenses	\$123,000	\$98,000	\$25,000
<b>Total current assets</b>	<b>\$1,868,000</b>	<b>\$1,795,000</b>	<b>\$73,000</b>
Net property, plant, and equipment	\$1,631,000	\$1,666,000	\$(35,000)
<b>Total assets</b>	<b>\$3,499,000</b>	<b>\$3,461,000</b>	<b>\$38,000</b>
<b>Liabilities and owners' equity</b>			
Accounts payable	\$440,000	\$430,000	\$10,000
Accrued expenses	\$98,000	\$77,000	\$21,000
Income tax payable	\$17,000	\$9,000	\$8,000
Short-term debt	\$409,000	\$500,000	\$(91,000)
<b>Total current liabilities</b>	<b>\$964,000</b>	<b>\$1,016,000</b>	<b>\$(52,000)</b>
Long-term debt	\$750,000	\$660,000	\$90,000
Total liabilities	\$1,714,000	\$1,676,000	\$38,000
Contributed capital	\$850,000	\$850,000	\$0
Retained earnings	\$935,000	\$935,000	\$0
<b>Total owners' equity</b>	<b>\$1,785,000</b>	<b>\$1,785,000</b>	<b>\$0</b>
<b>Total liabilities and owners' equity</b>	<b>\$3,499,000</b>	<b>\$3,461,000</b>	<b>\$38,000</b>

Source: Harvard ManageMentor® on Finance Essentials, adapted with permission.

Subtracting current liabilities from current assets gives you the company's *working capital*. Working capital gives you an idea of how much money the company has tied up in operating activities. Just how much is adequate for the company depends on the industry and the company's plans. For 2004, Amalgamated had \$904,000 in working capital.

Most *long-term liabilities* are loans.

Owners' equity comprises *retained earnings* (net profits that accumulate in a company after any dividends are paid) and *contributed capital* (capital received in exchange for stock).

## The cash flow statement

A *cash flow statement* gives you a peek into a company's

checking account. Like a bank statement, it tells how much cash was on hand at the beginning of the period, and how much was on hand at the end of the period. It then describes how the company spent its cash.

If you're a manager in a large corporation, changes in the company's cash flow won't typically have an impact on your day-to-day functioning. But you can affect cash flow in your company. And it's a good idea to stay up to date with your company's cash flow projections, because they may come into play when you prepare your budget for the upcoming year. For example, if cash is tight, you will probably be asked to be conservative in your spending. Alternatively, if the company is flush with cash, you may have opportunities to make new investments.

If you're a manager in a small company, you're probably keenly aware of the firm's cash flow situation and feel its impact almost every day. The cash flow statement is useful because it shows whether your company is turning profits into cash—and that ability is ultimately what will keep your company solvent. As the example of Amalgamated Hat Rack continues, we see in the table "Amalgamated Hat Rack statement of cash flows, 2004" that the hat rack company generated cash flow of \$95,500 in 2004. (Explanations for key terms follow.)

### ***Amalgamated Hat Rack statement of cash flows, 2004***

<b>Net income</b>	<b>\$347,500</b>
Depreciation	\$42,500
Accounts receivable	\$(43,000)
Inventory	\$(80,000)

Prepaid expenses	<b>\$</b> (25,000)
Accounts payable	<b>\$</b> 20,000
Accrued expenses	<b>\$</b> 21,000
Income tax payable	<b>\$</b> 8,000
<b>Cash flow from operations</b>	<b>\$</b> 291,000
Property, plant, and equipment (PP&E)	<b>\$</b> (7,500)
<b>Cash flow from investing activities</b>	<b>\$</b> (7,500)
Short-term debt	<b>\$</b> (91,000)
Long-term borrowings	<b>\$</b> 90,000
Contributed capital	<b>\$</b> 0
Cash dividends to stockholders	<b>\$</b> 187,000)
<b>Cash flow from financing activities</b>	<b>\$</b> (188,000)
<b>Increase in cash during year</b>	<b>\$</b> 95,500

Source: Harvard ManageMentor® on Finance Essentials, adapted with permission.

The cash flow statement doesn't measure the same thing as the income statement. If there is no cash transaction, it cannot be reflected on a cash flow statement. Notice, however, that the cash flow statement starts with net income. Then, through a series of adjustments based on the increases and decreases in asset and liability accounts from the balance sheet, the cash flow statement translates this net income to cash.

In general, a company looks to three sources of cash: ongoing operations, investment activities, and financing activities. It's traditional to start with ongoing operations.

**ACCOUNTS RECEIVABLE** *n* 1. The amount that customers owe the company for products and services sold but not yet paid for

**ACCOUNTS PAYABLE** *n* 1. The amount the company owes its vendors for supplies and other items it has received but not yet paid for

Investment activities can be:

- Cash the company uses to invest in financial instruments or *property, plant, and equipment* (such investments in PP&E are often shown as *capital expenditures*)
- Proceeds from the sale of plant, property, or equipment
- Proceeds from converting its investments into cash

Financing activities include raising money by borrowing in the capital markets and issuing stock. *Dividends* must be paid out of cash flow; they represent a decrease in cash flow.

# Using Financial Statements to Measure Financial Health



THE THREE FINANCIAL statements offer three different perspectives on your company's financial performance. That is, they tell three different but related stories about how well your company is doing financially.

- **The *income statement*** shows the bottom line: it indicates how much profit or loss a company generates over a period of time—a month, a quarter, or a year.
- **The *balance sheet*** shows a company's financial position at a specific point in time. That is, it gives a snapshot of the

company's financial situation—its assets, liabilities, and equity—on a given day.

- **The cash flow statement** tells where the company's cash comes from and where it goes—in other words, the flow of cash in, through, and out of the company.

Another way to understand the interrelationships is as follows:

- The income statement tells you whether your company is making a profit.
- The balance sheet tells you how efficiently the company is utilizing its assets and how well it is managing its liabilities in pursuit of profits.
- The cash flow statement tells you whether the company is turning profits into cash.

By themselves, financial statements tell you quite a bit: how much profit the company made, where it spent its money, how large its debts are. But how do you *interpret* all the numbers these statements provide? For example, is the company's profit large or small? Is the level of debt healthy or not?

*Ratio analysis* provides a means of digging deeper into the information contained in the three financial statements. A financial ratio is two key numbers from a company's financial statements expressed in relation to each other. The ratios that follow are relevant across a wide spectrum of industries but are most meaningful when compared against the same measures for other companies in the same industry.

## Profitability ratios

These measures evaluate a company's level of profitability by expressing sales and profits as a percentage of various other items.

- **Return on assets (ROA).** ROA provides a quantitative description of how well a company has invested in its assets. To calculate ROA, divide net income by total assets.

- **Return on equity (ROE).** ROE shows the return on the portion of the company's financing that is provided by owners.  
To calculate ROE, divide net income by owners' equity.
- **Return on sales (ROS).** Also known as net profit margin, ROS is a way to measure how sales translate into bottom-line profit. For example, if a company makes a profit of \$10 for every \$100 in sales, the ROS is 10/100, or 10 percent.  
To calculate ROS, divide net income by the revenue.
- **Gross profit margin.** A ratio that measures the percentage of gross profit relative to revenue, gross margin reflects the profitability of the company's products or services.  
To calculate gross margin, divide gross profit by revenue.
- **Earnings before interest and taxes (EBIT) margin.** Many analysts use this indicator, also known as *operating margin*, to see how profitable a company's operating activities are.  
To calculate EBIT margin, divide operating profit by revenue.

## Operating ratios

By linking various income statement and balance sheet figures, these measures provide an assessment of a company's operating efficiency.

- **Asset turnover.** This shows how efficiently a company uses its assets.

**Tip:** To calculate asset turnover, divide revenue by total assets. The higher the number, the better.

- **Days receivables.** It's best to collect on receivables promptly. This measure tells you in concrete terms how long it actually takes a company to collect what it's owed. A company that takes forty-five days to collect its receivables

will need significantly more working capital than one that takes four days to collect.

There are different methods to calculate days receivables. One way is to divide ending accounts receivable by revenue per day.

- **Days payables.** This measure tells you how many days it takes a company to pay its suppliers. The more days it takes, the longer a company has the cash to work with.

There are different methods to calculate days payables. One way is to divide ending accounts payable by cost of goods sold per day.

- **Days inventory.** This is a measure of how long it takes a company to sell the average amount of inventory on hand during a given period of time. The longer it takes to sell the inventory, the more the company's cash gets tied up and the greater the likelihood that the inventory will not be sold at full value.

To calculate days inventory, divide average inventory by cost of goods sold per day.

## Liquidity ratios

Liquidity ratios tell you about a company's ability to meet its financial obligations, including debt, payroll, vendor payments, and so on.

- **Current ratio.** This is a prime measure of how solvent a company is. It's so popular with lenders that it's sometimes called the *banker's ratio*. Generally speaking, the higher the ratio, the better financial condition a company is in. A company that has \$3.2 million in current assets and \$1.2 million in current liabilities would have a current ratio of 2.7 to 1. That company would be generally healthier than one with a current ratio of 2.2 to 1.

To calculate the current ratio, divide total current assets by total current liabilities.

- **Quick ratio.** This ratio isn't faster to compute than any other

—it simply measures the ratio of a company's assets that can be quickly liquidated and used to pay debts. Thus, it ignores inventory, which can be hard to liquidate (and if you do have to liquidate inventory quickly, you typically get less for it than you would otherwise). This ratio is sometimes called the *acid-test ratio* because it measures a company's ability to deal instantly with its liabilities.

To calculate the quick ratio, divide current assets minus inventory by current liabilities.

## Leverage ratios

Leverage ratios tell you how, and how extensively, a company uses debt. In the world of finance, the word *leverage* is used for debt.

- **Interest coverage.** This measures a company's margin of safety: how many times over the company can make its interest payments.

To calculate interest coverage, divide income before interest and taxes by interest expense.

- **Debt to equity.** This measure provides a description of how well the company is making use of borrowed money to enhance the return on owners' equity.

To calculate the debt-to-equity ratio, divide total liabilities by owners' equity.

## Other ways to measure financial health

Beyond profitability, operating, and leverage ratios, other ways of evaluating the financial health of a company include valuation, Economic Value Added (EVA), and assessing growth and productivity. Like the ratios described above, all these measures are most meaningful when compared against the same measures for other companies in that particular industry.

**Valuation.** Valuation often refers to the process by which people determine the total value of a company for the purpose of selling it. This type of valuation is an uncertain science. For example, a firm that is considering acquiring another firm might rely heavily on estimates of future cash flows to come up with a value for the potential acquisition. Another firm might rely on different data. Also, a company is worth different amounts to different parties. For instance, a small, high-tech company may be valued more by a potential acquirer that wants the acquired firm's unique technology to leverage its other operations.

Valuation also refers to the process that Wall Street investors and stock analysts use to scrutinize a company's financial statements and stock performance carefully in order to arrive at what they believe to be a realistic estimate of that company's value. Since a share of stock denotes ownership of a part of the company, analysts are interested in knowing whether the market price of that share is a good deal, relative to the underlying value of the piece of the company the share represents.

Wall Street uses various means of valuation—that is, of assessing a company's financial performance in relation to its stock price.

- The *earnings per share (EPS)* equals net income divided by the number of shares outstanding. This is one of the most commonly watched indicators of a company's financial performance. If it falls, it will likely take the stock's price down with it.
- The *price-to-earnings ratio (P/E)* is the current price of a share of stock divided by the previous twelve months' earnings per share. It is a common measure of how cheap or expensive a stock is, relative to earnings.
- *Growth indicators.* Growth measures can tell a great deal about financial health. A company's *growth* allows it to provide increasing returns to its shareholders and to provide opportunities for new and existing employees. The number of years over which you should measure growth will depend

on the business cycle of the industry the company is in. A one-year growth figure for an oil company—an industry that typically has long business cycles—probably doesn't tell you very much. But a strong one-year growth figure for an Internet company would be significant. Common measures of growth include sales growth, profitability growth, and growth in earnings per share.

**Economic Value Added.** This concept was introduced as a way to induce employees to think like shareholders and owners. It is the profit left over after the company has met the expectations of those who provided the capital.

**Productivity measures.** Sales-per-employee and net-income-per-employee measures link revenue and profit generation information to workforce data. Watching the trends of these numbers adds to your understanding of what is occurring in the company.

### Tips: Analyzing Financial Statements

- Consider the context—what looks like a big (or small) number may not be once you understand what's typical for a business in that particular industry.
- Compare one company's statements with those of a similar-sized company within the same industry.
- Watch for trends. How have the statements changed since last year? From three years ago?
- Use your company's statements to write a paragraph that describes how much profit it is making, how well it is managing its assets, where

the money comes from, and where it goes.