



جمعية المحللين الماليين - سورية
Syrian Financial Analysts Society

CHAPTER 7

FINANCIAL STATEMENTS

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LEARNING OUTCOMES

After completing this chapter, you should be able to do the following:

- a** Describe the roles of standard setters, regulators, and auditors in financial reporting;
 - b** Describe information provided by the balance sheet;
 - c** Compare types of assets, liabilities, and equity;
 - d** Describe information provided by the income statement;
 - e** Distinguish between profit and net cash flow;
 - f** Describe information provided by the cash flow statement;
 - g** Identify and compare cash flow classifications of operating, investing, and financing activities;
 - h** Explain links between the income statement, balance sheet, and cash flow statement;
 - i** Explain the usefulness of ratio analysis for financial statements;
 - j** Identify and interpret ratios used to analyse a company's liquidity, profitability, financing, shareholder return, and shareholder value.
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INTRODUCTION

1

The financial performance of a company matters to many different people. Management is interested in assessing the success of its plans relative to its past and forecasted performance and relative to its competitors' performance. Employees care because the company's financial success affects their job security and compensation. The company's financial performance matters to investors because it affects the returns on their investments. Tax authorities are interested as well because they may tax the company's profits. An investment analyst will scrutinise a company's performance and then make recommendations to clients about whether to buy or sell the securities, such as shares of stocks and bonds, issued by that company.

One way to begin to evaluate a company is to look at its past performance. The primary summary of past performance is a company's financial statements, which indicate, among other things, how successful a company has been at generating a profit to repay or reward investors. Companies obtain funds from investors from either the sale of debt securities (bonds) or the sale of equity securities (shares of stock, sometimes referred to as stocks or shares). The value of the debt and equity securities to investors depends on a company's future success along with its ability to repay its debt and to create returns for shareholders to compensate for the risks they assume.

Financial statements are historical and forward-looking at the same time; they focus on past performance but also provide clues about a company's future performance. Accountants collect relevant financial information and then communicate that information to various stakeholders, such as investors, management, employees, and competitors. This information is communicated through financial statements, including the balance sheet, the income statement, and the cash flow statement. These financial statements show the monetary value of the economic resources under the company's control and how those resources have been used to create value. Financial statements also include notes that describe the accounting methods selected, significant accounting policies, and other information critical to interpreting a company's results. These notes are an important component of a shareholder's evaluation.

Reading a company's financial statements can provide information on important matters such as how profitable the company is and how efficiently it manages its resources and obligations. Financial statements provide clues to the company's future success by telling the story about its past performance. They are read and used by a wide variety of people for a wide variety of purposes; sooner or later, it will help you and your career to know how to make sense of them.

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ROLES OF STANDARD SETTERS, AUDITORS, AND REGULATORS IN FINANCIAL REPORTING

The existence of standard setters, regulators, and auditors help ensure the consistency of financial information reported by companies.

Standards for financial reporting are typically set at the national or international level by private sector accounting standard-setting bodies. One set of standards that details the “rules” of financial reporting is the International Financial Reporting Standards (IFRS), published by the International Accounting Standards Board (IASB). As of 2013, most countries require or allow companies to produce financial reports using IFRS. In the United States, US-based publicly traded companies must report using US generally accepted accounting principles (US GAAP), but non-US-based companies may report using IFRS. There is a movement to have accounting standards converge and to create a single set, or at least a compatible set, of high-quality financial reporting standards worldwide. In countries that have not adopted IFRS, efforts to converge with or transition to IFRS are taking place.

When standards allow some choice, the accounting method that a company chooses affects the earnings reported in the company’s financial statements. A company may use aggressive accounting methods that boost reported earnings in the current period or it may use conservative accounting methods that dampen reported earnings in the current period. For example, a company may recognise more or less revenue—and thus show more or less profit—depending on the methods allowed by accounting standards and the company’s interpretation of these standards. In other words, despite the use of standards to guide companies in how to prepare financial statements, there is still scope for flexibility in choosing and interpreting the standards.

Where there are alternative acceptable accounting methods, the choices of methods are reported in the notes to the financial statements. The notes accompany the statements and explain much of the information presented in the statements, as well as the accounting decisions behind the presentation. The notes are an aid to understanding the financial statements.

Regulators support financial reporting standards by recognizing, adopting, and enforcing them and by implementing and enforcing rules that complement them. Companies that issue securities traded in public markets are typically required to file reports that comply with specified financial reporting standards with their country’s regulatory bodies, such as the Securities and Exchange Commission (SEC) in the United States, the Prudential Regulation Authority (PRA) in the United Kingdom, and the Financial Services Commission in South Korea. Such reports include the financial statements as well as explanatory notes and additional reports documenting company activities.

Before they can be published, the financial statements must first be reviewed by independent accountants called auditors. The auditor issues an opinion on their correctness and presentation, which indicates to the reader how trustworthy the statements are in reflecting the financial performance of the company. Opinions can range from an unqualified or clean opinion, meaning that the financial statements are prepared in

accordance with the applicable accounting standards, to an adverse opinion, which indicates that the financial statements do not comply with the accounting standards and, therefore, do not provide a fair representation of the company's performance.

Note that a clean audit report does not always imply a financially-sound company, but only verifies that the financial statements were created and presented correctly. In other words, an audit opinion is not a judgement on the company's performance but on how well it accounted for its performance.

FINANCIAL STATEMENTS

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A company is required to keep accounting records and to produce a number of financial reports, which include the following:

- The balance sheet (also called statement of financial position or statement of financial condition) shows what the company owns (assets) and how it is financed. The financing includes what it owes others (liabilities) and shareholders' investment (equity).
- The income statement (also called statement of profit or loss, profit and loss statement, or statement of operations) identifies the profit or loss generated by the company during the period covered by the financial statements.
- The cash flow statement shows the cash received and spent during the period.
- Notes to the financial statements provide information relevant to understanding and assessing the financial statements.

Other reports may be required. For example, in the United Kingdom, companies are required to file a report from the directors as well as a report from the auditors. The directors' report contains information about the directors of the company, their remuneration and a review of the performance of the business during the reporting year. It also provides a statement of whether the company complies with corporate governance codes of conduct. In the United States, a 10-K report must be filed annually with the Securities and Exchange Commission. The 10-K report includes not only the financial statements, but also such other information as the management's discussion and analysis of financial conditions and results of operations as well as quantitative and qualitative disclosures about the risks the company faces.

3.1 The Balance Sheet

The **balance sheet** (also called statement of financial position or statement of financial condition) provides information about the company's financial position at a specific point in time, such as the end of the fiscal year or the end of the quarter. Essentially, it shows

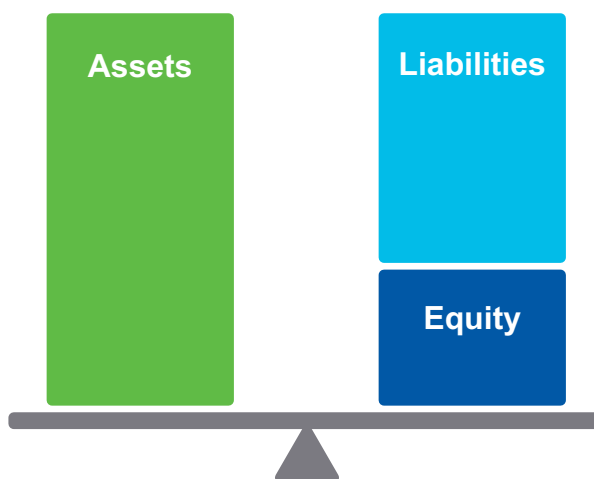
- the resources the company controls (assets),

- its obligations to lenders and other creditors (liabilities or debt), and
- owner-supplied capital (shareholders' equity, stockholders' equity, or owners' equity).

The fundamental relationship underlying the balance sheet, known as the accounting equation, is

$$\text{Total assets} = \text{Total liabilities} + \text{Total shareholders' equity}$$

Another way of looking at the balance sheet is that total assets represent the resources available to the company for generating profit. Total liabilities plus shareholders' equity indicate how those resources are financed—by creditors (liabilities) or by shareholders (equity). The value of the assets must be equal to the value of the financing provided to acquire them. In other words, the balance sheet must balance!



The values of many of a company's assets are reported at **historical cost**, which is the actual cost of acquiring the asset minus any cost expensed to date. An alternative is to report the value of an asset at its **fair value**, which reflects the amount the asset could be sold for in a transaction between willing and unrelated parties, called an "arm's length transaction". Fair value accounting is applied only to a few assets, such as some financial instruments. Most companies choose to report assets, where allowed, at historical cost.

Let's rearrange the accounting equation to calculate shareholders' equity:

$$\text{Total shareholders' equity} = \text{Total assets} - \text{Total liabilities}$$

Equity reflects the residual value of the company's shares. Note that this is not the same as the company's current market value—that is, the value that the market believes the company is currently worth or how much investors are willing to pay to own the shares of the company. The balance sheet rarely shows the current market value of the assets or the company itself because, as mentioned earlier, most of the assets are reported at their historical cost rather than fair market value. The balance sheet values are commonly known as the **book values** of the company's assets, liabilities, and equity.

To illustrate the basic structure of a balance sheet, Exhibit 1 shows the balance sheet for hypothetical company ABC. Two years of information are displayed to reflect the values of the company's assets, liabilities, and equity on 31 December 20X1 and 20X2. Most companies will report the most recent period's information in the first

column of numbers, but occasionally companies will report the most recent period's information in the far-right column. Although it is common practice to use parentheses or minus signs to indicate subtraction, some companies will assume that the reader knows which numbers are generally subtracted from others and will not use minus signs or parentheses.

Exhibit 1 ABC Company Statement of Financial Position

As of 31 December	20X2	20X1
(\$ millions)		
Assets		
Cash	25	16
Accounts receivable	40	35
Inventories	95	90
Other current assets	5	5
Total current assets	\$165	\$146
Gross property, plant, and equipment	460	370
Accumulated depreciation	(160)	(120)
Net property, plant, and equipment	\$300	\$250
Intangible assets	100	100
Total non-current assets	\$400	\$350
Total assets	\$565	\$496
Liabilities and Equity		
Accounts payable	54	50
Accrued liabilities	36	36
Current portion of long-term debt	10	10
Total current liabilities	\$100	\$96
Long-term debt	232	200
Total non-current liabilities	\$232	\$200
Total liabilities	\$332	\$296
Common stock	85	85
Retained earnings	148	115
Total owners' equity	\$233	\$200
Total liabilities and equity	\$565	\$496

Balance sheets typically classify assets as current and non-current. The difference between them is the length of time over which they are expected to be converted into cash, used up, or sold. **Current assets**, which include cash; **inventories** (unsold units of production on hand called stocks in some parts of the world); and **accounts receivable** (money owed to the company by customers who purchase on credit, sometimes called debtors), are assets that are expected to be converted into cash, used up, or sold within the current operating period (usually one year). A company's operating period is the

average amount of time elapsed between acquiring inventory and collecting the cash from sales to customers. **Non-current assets** (sometimes called fixed or long-term assets) are longer term in nature. Non-current assets include tangible assets, such as land, buildings, machinery, and equipment, and intangible assets, such as patents. These assets are used over a number of years to generate income for the company. The tangible assets are often grouped together on the balance sheet as property, plant, and equipment (PP&E). Non-current assets may also include financial assets, such as shares or bonds issued by another company.

When a company purchases a long-term (non-current) asset, it does not immediately report that purchase as an expense on the income statement. Instead, the purchase amount is **capitalised** and reported as an asset on the balance sheet. For a capitalised, long-term asset, the company allocates the cost of that asset over the asset's estimated useful life. This process is called **depreciation**. The amount allocated each year is called the **depreciation expense** and is reported on the income statement as an expense. The purchase amount represents the gross value of the asset and remains the same throughout the asset's life. The net book value of the long-term asset, however, decreases each year by the amount of the depreciation expense. **Net book value** is calculated as the gross value of the asset minus accumulated depreciation, where accumulated depreciation is the sum of the reported depreciation expenses for the particular asset. Details about the original costs, depreciation expenses, and accumulated depreciation of property, plant, and equipment can be found in the notes to the financial statements.

Other assets that might be included on a company's balance sheet are long-term financial investments, **intangible assets** (such as patents), and **goodwill**. Goodwill is recognised and reported if a company purchased another company, but paid more than the fair value of the net assets (assets minus liabilities) of the company it purchased. The additional value reflected in goodwill is created by other items not listed on the balance sheet, such as a loyal customer base or skilled employees. The process of expensing the costs of intangible assets over their useful lives is called **amortisation**; this process is similar to depreciation.

The other balance sheet items—liabilities and equity—represent how the company's assets are financed. There are two fundamental types of financing: debt and equity. Debt is money that has been borrowed and must be repaid at some future date; therefore, debt is a **liability**—an obligation for which the company is liable. **Equity** represents the shareholders' (owners') investment in the company.

Debt can be split into current (short-term) liabilities and long-term debt. **Current liabilities** must be repaid in the next year and include operating debt, such as **accounts payable** (credit extended by suppliers, sometimes called creditors), short-term borrowing (for example, loans from banks), and the portion of long-term debt that is due within the reporting period. Unpaid operating expenses, such as money due to workers but not yet paid, are often shown together as **accrued liabilities**. **Long-term debt** is money borrowed from banks or other lenders that is to be repaid over periods greater than one year.

Shareholders are the residual owners of the company; that is, they own the residual value of the company after its liabilities are paid. The amount of the company's equity is shown on the balance sheet in two parts: (1) the amount received from selling stock to common shareholders, which are direct contributions by owners when they purchase shares of stock; and (2) **retained earnings** (retained income), which represents

the company's undistributed income (as opposed to the dividends that represent distributed income). Retained earnings are an indirect contribution by owners who allow the company to retain profits.

Retained earnings represent a link between the company's income statement and the balance sheet. When a company earns profit and does not distribute it to shareholders as a dividend, the remaining profit adds value to the company's equity. After all, the company exists to make a profit; when it does, that makes the company more valuable. Likewise, if the company experiences a net loss, that decreases the value of its retained earnings and thus its equity; the company becomes less valuable because it has lost, rather than earned, value.

3.2 The Income Statement

The **income statement** (sometimes called statement of profit or loss, profit and loss statement, or statement of operations) identifies the profit or loss generated by a company during a given time period, such as a year. Generating profit over time is essential for a company to continue in business. In practice, the income statement may be referred to as the "P&L".

To illustrate the basic structure of an income statement, Exhibit 2 shows the income statement for the hypothetical company ABC for the year ending 31 December 20X2. Note that the net income of \$76 million minus the dividend paid of \$43 million equals \$33 million, the same amount as the change in retained earnings from 20X1 to 20X2 as shown on the balance sheet in Exhibit 1 (\$148 million – \$115 million = \$33 million).

Exhibit 2 ABC Company Income Statement for Year Ending 31 December 20X2

(\$ millions)	
Revenues	\$650
Cost of sales	(450)
Gross profit	\$200
Other operating expenses	
Selling expenses	\$(30)
General and administrative expenses	(20)
Depreciation expense	(40)
Total other operating expenses	(90)
Operating income	\$110
Interest expense	(15)
Earnings before taxes	\$95
Income taxes	(19)
Net income	\$76
Additional information:	
Dividends paid to shareholders	\$43

(continued)

Exhibit 2 (Continued)

Number of shares outstanding	50 million
Earnings per share	\$1.52
Dividend per share	\$0.86

The income statement shows the company's financial performance during a given time period, which is one year in Exhibit 2. It includes the **revenues** earned from the company's operation and the expenses of earning those revenues. The difference between the revenues and the expenses is the company's profit. In its most basic form, the income statement can be represented by the following equation:

$$\text{Profit (loss)} = \text{Revenues} - \text{Expenses}$$

Expenses are the cost of company resources—cash, inventories, equipment, and so on—that are used to earn revenues. Expenses can be divided into different categories that reflect the role they play in earning revenues. Typical categories include

- Operating expenses, which include the cost of sales (or cost of goods sold); selling, general, and administrative expenses; and depreciation expenses
- Financing costs, such as interest expenses
- Income taxes

Different measures of profit can be calculated by subtracting different categories of expenses from revenues. These measures are sometimes reported on the income statement. For example, subtracting the cost of sales, which represents the cost of producing or acquiring the products or services that are sold by a company, from revenues gives **gross profit**.

$$\text{Gross profit} = \text{Revenues} - \text{Cost of sales}$$

Cost of sales is not the only cost incurred by the company in its effort to sell products or services. There are other operating expenses, such as marketing expenses (costs of promoting the products or services to customers), administrative expenses (costs of running the company that are not directly related to production or sales, such as salary of executives, office stationery, and lighting), and depreciation expenses (non-cash expenses that represent annual allocated costs of long-term assets, such as equipment). Subtracting these additional costs from gross profit gives **operating income**, or operating profit.

$$\text{Operating income} = \text{Gross profit} - \text{Other operating expenses}$$

Operating income is often referred to as earnings before interest and taxes (EBIT).¹ Operating income is the income (earnings) generated by the company before taking into account financing costs (interest) and taxes.

¹ Note that operating income and EBIT may be different. For example, profit (or losses) that are not related to the company's operations are excluded from operating income but included in EBIT. The difference is usually small, so these two terms are often used interchangeably.

Another important measure of income is earnings before interest, taxes, depreciation, and amortisation (EBITDA). EBITDA is operating income before depreciation and amortisation expenses are deducted. The amounts of depreciation and amortisation are not cash flows, and they are determined by the choice of accounting method rather than by operating decisions. EBITDA is useful because it offers a closer approximation of operating cash flow than EBIT. It is an indicator of the company's operating performance and its management's ability to generate revenues and control expenses that are related to its operations. EBITDA may be a better measure than EBIT of management's ability to manage the revenues and expenses within its control. This measure does not appear, as such, on a company's income statement.

$$\text{EBITDA} = \text{EBIT (or operating income)} + \text{Depreciation and Amortisation}$$

If the company has borrowed money to help finance its activities, it will have to pay interest. Deducting interest expense from operating income determines the earnings before taxes (or profit before tax).

$$\text{Earnings before taxes} = \text{EBIT (or operating income)} - \text{Interest expense}$$

The income taxes owed by the company on its earnings are then deducted to arrive at **net income** (or net profit or profit after tax).

$$\begin{aligned} \text{Net income} &= \text{EBIT (or operating income)} - \text{Interest expense} - \text{Tax expense} \\ &= \text{Earnings before taxes} - \text{Tax expense} \end{aligned}$$

Net income represents the income that the company has available to retain and reinvest in the company (retained earnings) or to distribute to owners in the form of dividends (disbursements of profit).

The company's owners (shareholders) are interested in knowing how much income the company has created per share, which is called **earnings per share** (EPS). It is approximated as net income divided by the number of shares outstanding. Existing and potential investors are also interested in the amount of dividends the company pays for each share outstanding, or **dividend per share**. The importance of earnings per share and dividend per share in valuing a company is discussed in the Equity Securities chapter.

3.3 Profit and Net Cash Flow

The income statement shows a company's profit, but profit is not the same as net cash flow—that is, how much cash the company generated during the period. Revenue is considered earned when a sales transaction is identified by certain conditions—for example, whether the products have been shipped to the customer. But the cash flow from the transaction—the cash received when the customer pays its bill—usually occurs later, a common situation when the customer buys on credit. In this case, there is initially revenue without cash. A company acquiring or producing a unique item for a customer may require payment before the sales transaction is completed and the revenue earned. In this case, there is cash without revenue. Likewise, an expense can be incurred and accounted for without being paid if a supplier extends credit, or an expense can be paid for before it is actually incurred (prepaid).

On the income statement, profits are measured on an **accrual basis**, which means that revenues are recorded when the revenues are earned rather than when they are received in cash and that related expenses may be recognised before or after they are paid out in cash. Because of the timing difference between when revenues are earned and when customers pay their bills, the cash received during a particular period is not likely to be the same amount as the revenues earned during that period, unless all sales are for cash. Equally, the cash paid for expenses during the period is not likely to be the same amount as the expenses recognised on the income statement. Thus, profits and net cash flow are typically not the same amount.

There are other reasons why the profits measured on the income statement are not the same as cash flows. For example, the balance sheet reports long-term assets when they are acquired, but there is no “long-term asset” expense shown immediately on the income statement. Instead, the use of the long-term asset is expensed on the income statement over its useful life by using depreciation expense. This depreciation expense does not correspond to a cash flow; the cash flow for the asset acquisition happens up front, when the asset is acquired.

A company must eventually generate profits to provide returns to shareholders, but it must generate cash to keep itself going. Suppliers, employees, expenses, and debts must be paid for the company to keep operating. The income statement indicates how good a company is at creating profit, but it is also critical to see how good the company is at generating cash. A company can be profitable but have negative cash flows—for example, if it is slow at collecting cash from its customers. Or a company may operate at a loss but have positive cash flows—for example, if the company has high depreciation and amortisation expenses. A company can operate at a loss as long as the owners allow it, provided the company can generate cash flows to support its survival. But a company cannot survive long with negative cash flows, no matter how profitable it seems to be. Negative cash flows may cut off access to resources, such as material and labour, and can cause a company to become bankrupt.

The use of accrual accounting on the income statement creates a need for a separate statement to track the company’s cash. This separate statement is the cash flow statement to which we now turn.

3.4 The Cash Flow Statement

The **statement of cash flows** (or cash flow statement) identifies the sources and uses of cash during a period and explains the change in the company’s cash balance reported on the balance sheet. To illustrate the basic structure of a cash flow statement, Exhibit 3 shows the statement of cash flows for hypothetical company ABC for the year ending 31 December 20X2.

Exhibit 3 ABC Company Statement of Cash Flows for Year Ending 31 December 20X2

(\$ millions)

Operating activities

Net Income	\$76
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Exhibit 3 (Continued)

Plus depreciation expense	40	
Minus increase in accounts receivable	(5)	
Minus increase in inventories	(5)	
Plus increase in accounts payable	4	
Net cash flow from operating activities		\$110
Investment activities		
Minus investment in property, plant, and equipment	\$(90)	
Net cash flow used in investing activities		\$(90)
Financing activities		
Cash inflows from borrowing (long-term debt)	\$32	
Cash inflows from new share issues	0	
Minus dividends paid to shareholders	(43)	
Net cash flow used in financing activities		\$(11)
Net increase (decrease) in cash		\$9
Beginning cash		16
Ending cash		\$25

The classification of cash flows as operating, investing, or financing is critical to show investors and others not only how much cash was generated, but also how cash was generated. Operating activities are usually recurring activities: they relate to the company's profit-making activities and occur on an on-going basis. In contrast, investing and financing activities may not recur; the purchase of equipment or issuance of debt, for example, does not occur every year. So, knowing how the company generates cash—by recurring or non-recurring events—is important for estimating a company's future cash flows.

The cash inflows and outflows of a company are classified and reported as one of three kinds of activities.

1 Cash flows from operating activities reflect the cash generated from a company's operations, its main profit-creating activity. Cash flows from operating activities typically include cash inflows received for sales and cash outflows paid for operating expenses, such as cost of sales, wages, operating overheads, and so on. When the specific cash inflows and outflows listed in the previous sentence are reported in cash flows from operating activities, the company is reporting using the direct method.

When the company reports net income and then makes adjustments to arrive at the cash flow from operating activities, it is using the indirect method. The indirect method shows the relationship between income statement and balance sheet changes and cash flow from operating activities.

In Exhibit 3, ABC uses the indirect method. Depreciation expense, which is a non-cash item, is added to net income. The depreciation expense of \$40 million is found on the income statement in Exhibit 2. The increase of \$5 million in accounts receivable in Exhibit 1 is subtracted from net income because that

cash is not available to ABC. It can be viewed as a use of cash (negative cash flow)—that is, increasing inventories by \$5 million used cash. The increase in accounts payable of \$4 million is a source (positive cash flow) of cash for ABC because it has not yet paid its suppliers (used cash) for a service or product.

- 2 Cash flows from investing activities** are typically cash outflows related to purchases of long-term assets, such as equipment or buildings, as the company invests in its long-term resources. Sales of long-term assets are reported as cash inflows from investing activities. Exhibit 1 shows an increase in ABC's gross property, plant, and equipment of \$90 million. This amount matches the cash used in (outflow for) investing activities.
- 3 Cash flows from financing activities** are cash inflows resulting from raising new capital (an increase in borrowing and/or issuance of shares) and cash outflows for payment of dividends, repayment of debt, or repurchase of shares (also known as share buybacks, which are discussed in the Equity Securities chapter). ABC shows an inflow from borrowing of \$32 million, which matches the increase in long-term debt from 20X1 to 20X2. The dividend payment of \$43 million is shown at the bottom of the income statement and is included in the change in retained earnings from 20X1 to 20X2 on the balance sheet.

Each net cash flow from operating, investing, and financing activities will be positive or negative depending on whether more cash came in (positive) or went out (negative). The net cash flows from operating activities, investing activities, and financing activities are added together to arrive at the net cash flow during the accounting period. The net cash flow corresponds to the change in the amount of cash reported on the balance sheet. For ABC, net cash flow of \$9 million corresponds to the increase in cash from year-end 20X1 to year-end 20X2 as reported on the balance sheet in Exhibit 1 (\$25 million – \$16 million = \$9 million).

3.5 Links between Financial Statements

Although each major financial statement—balance sheet, income statement, and cash flow statement—offers different types of financial information, they are not entirely separate. For example, the income statement is linked to the balance sheet through net income and retained earnings. In the case of ABC, the net income of \$76 million (shown on the income statement and the starting point of the cash flow statement) is separated into dividends paid to shareholders of \$43 million (an outflow of cash on the cash flow statement) and an increase in retained earnings of \$33 million (shown as an increase in retained earnings on the balance sheet between the end of 20X1 and the end of 20X2).

The income statement is linked to the balance sheet in many ways. The revenues and expenses reported on the income statement that have not been settled in cash are reflected on the balance sheet as current assets or current liabilities. In other words, the revenues not yet collected are reflected in accounts receivable, and the expenses not yet paid are reflected in accounts payable and accrued liabilities. Another example of linkages is when a company purchases fixed assets, such as equipment or buildings. These cash expenditures are shown as an increase in the gross fixed assets on the balance sheet (\$90 million) and a cash outflow on the cash flow statement, but they

only show up on the income statement when the cost of the fixed asset is expensed or depreciated over time. As noted earlier, depreciation is a non-cash expense representing the annual expense for the fixed assets.

The balance sheet reflects financial conditions at a certain point in time, whereas the income and cash flow statements explain what happened between two points in time. So, although the three financial statements show different kinds of information and have different purposes, they are all related to each other and should not be read in isolation.

Some links between ABC's financial statements are described in Exhibit 4 and in the table below.

Exhibit 4 Links between Financial Statements

Balance Sheet		
As of 31 December	20X2	20X1
(\$ millions)		
Assets		
Cash	25	16
Accounts receivable	40	35
Inventories	95	90
Other current assets	5	5
Total current assets	\$165	\$146
Gross property, plant, and equipment	460	370
Accumulated depreciation	(160)	(120)
Net property, plant, and equipment	\$300	\$250
Intangible assets	100	100
Total non-current assets	\$400	\$350
Total assets	\$565	\$496
Liabilities and Equity		
Accounts payable	54	50
Accrued liabilities	36	36
Current portion of long-term debt	10	10
Total current liabilities	\$100	\$96
Long-term debt	232	200
Total non-current liabilities	\$232	\$200
Total liabilities	\$332	\$296
Common stock	85	85
Retained earnings	148	115
Total owners' equity	\$233	\$200
Total liabilities and equity	\$565	\$496

Income Statement		
(\$ millions)		
Revenues		\$650
Cost of sales		(450)
Gross profit		\$200
Other operating expenses		
Selling expenses	\$(30)	
General and administrative expenses	(20)	
Depreciation expense	(40)	
Total other operating expenses	(90)	
Operating income		\$110
Interest expense		(15)
Earnings before taxes		\$95
Income taxes	(19)	
Net income		\$76
Additional information:		
Dividends paid to shareholders		\$43
Additions to retained earnings		\$33

Cash Flow Statement		
(\$ millions)		
Operating activities		
Net Income		\$76
Plus depreciation expense	40	
Minus increase in accounts receivable	(5)	
Minus increase in inventories	(5)	
Plus increase in accounts payable	4	
Net cash flow from operating activities		\$110
Investment activities		
Minus investment in property, plant, and equipment	\$(90)	
Net cash flow used in investing activities		\$(90)
Financing activities		
Cash inflows from borrowing (long-term debt)	\$12	
Cash inflows from new share issues	0	
Minus dividends paid to shareholders	(43)	
Net cash flow used in financing activities		\$(11)
Net increase (decrease) in cash		\$9
Beginning cash		16
Ending cash		\$25

$\$148 = \$115 + \$33$

1

2

3

+

Exhibit 4 (Continued)

1

On the balance sheet, the increase in cash from 20X1 to 20X2 is \$9 million.

$$\begin{aligned} 20X2 \text{ cash} - 20X1 \text{ cash} &= \text{Net increase in cash} \\ \$25 \text{ million} - \$16 \text{ million} &= \mathbf{\$9 \text{ million}} \end{aligned}$$

The cash flow statement explains this change in cash. The \$9 million is shown as an increase in cash for the year.

2

On the balance sheet, the company has invested \$90 million in gross plant, property, and equipment (PP&E) from 20X1 to 20X2.

$$\begin{aligned} 20X2 \text{ PP\&E} - 20X1 \text{ PP\&E} &= \text{Investment in PP\&E} \\ \$460 \text{ million} - \$370 \text{ million} &= \mathbf{\$90 \text{ million}} \end{aligned}$$

On the cash flow statement, the \$90 million is shown as an investment in PP&E.

3

The net income of **\$76 million** (shown on the income statement and the starting point of the cash flow statement) is separated into dividends paid to shareholders of \$43 million (an outflow of cash on the cash flow statement) and additions to retained earnings of \$33 million.

$$\begin{aligned} \text{Net income} - \text{Dividends paid} &= \text{Additions to retained earnings} \\ \$76 \text{ million} - \$43 \text{ million} &= \mathbf{\$33 \text{ million}} \end{aligned}$$

On the balance sheet, the additions to retained earnings (when a company earns a profit and does not distribute it to shareholders as a dividend) from 20X1 to 20X2 is **\$33 million**.

$$\begin{aligned} 20X1 \text{ retained earnings} + \text{Additions to retained earnings} &= 20X2 \text{ retained earnings} \\ \$115 \text{ million} + \$33 \text{ million} &= \mathbf{\$148 \text{ million}} \end{aligned}$$

In additional information on the income statement, the amount of dividends paid to shareholders is **\$43 million**.

FINANCIAL STATEMENT ANALYSIS

4

Financial statement analysis involves the use of information provided by financial statements and also by other sources to identify critical relationships. These relationships may not be observable by reading the financial statements alone. The use of ratios allows analysts to standardise financial information and provides a context for making meaningful comparisons. In particular, investors can compare companies of different sizes as well as the performance of the same company at different points in time.

Ratios help managers of the company or outside creditors and investors answer the following questions that are important to help determine a company's potential future performance:

- How liquid is the company?
- Is the company generating enough profit from its assets?

- How is the company financing its assets?
- Is the company providing sufficient return for its shareholders?

4.1 How Liquid Is the Company?

In accounting, liquidity refers to a company's ability to pay its outstanding obligations in the short term. Two ratios commonly used in assessing a company's liquidity are

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

and

$$\text{Quick ratio} = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$$

Liquidity ratios measure a company's ability to meet its short-term obligations. The **current ratio** measures the current assets available to cover one unit of current liabilities. A higher ratio indicates a higher level of liquidity; there is a greater availability of short-term resources to cover short-term obligations. If the current ratio is greater than 1, current assets are greater than current liabilities and the company appears to be able to cover its debts in the short term. But not every current asset is easily or quickly convertible into cash, so a current ratio of 2 is frequently used as a minimum desirable standard. Another liquidity ratio, the **quick ratio**, excludes inventories, which are the least liquid current asset. This ratio is a better indicator than the current ratio of what would happen if the company had to settle with all its creditors at short notice. A quick ratio of 1 or higher is often viewed as desirable. However, a high current or quick ratio is not necessarily indicative of a problem-free company. It may also indicate that the company is holding too much cash and not investing in other resources necessary to create more profit.

How would you characterise the liquidity of ABC based on the information below?

$$\text{ABC's current ratio} = \frac{165}{100} = 1.65$$

$$\text{ABC's quick ratio} = \frac{165 - 95}{100} = \frac{70}{100} = 0.70$$

ABC's current ratio of less than 2 and its quick ratio of less than 1 indicate that the company may have difficulties meeting its obligations in the short term. But it is not necessarily a source of concern because ABC may have access to resources, such as a line of credit from its bank, that do not appear on the balance sheet and these resources may be used to meet ABC's obligations.

As is the case for most ratios, comparison with industry norms (average ratios for the industry), ratios for comparable companies, or past ratios gives a deeper context for interpreting the ratio.

4.2 Is the Company Generating Enough Profit from Its Assets?

A widely used ratio for measuring a company's profitability is the **net profit margin**.

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Revenues}}$$

This ratio measures the percentage of revenues that is profit—that is, the percentage of revenues left for the shareholders after all expenses have been accounted for. Generally, the higher the net profit margin, the better.

How would you interpret ABC's net profit margin based on the information below?

$$\text{ABC's net profit margin} = \frac{76}{650} = 0.1169 = 11.69\%$$

ABC's net profit margin of 11.69% means that for every dollar of revenue, ABC earns \$0.1169 of profit.

Another ratio used to assess profitability is **return on assets (ROA)**.

$$\text{Return on assets} = \text{ROA} = \frac{\text{Net income}}{\text{Total assets}}$$

Return on assets indicates how much return, as measured by net income, is generated per monetary unit invested in total assets. Generally, the higher the return on assets, the better.

Some analysts may choose to use operating income rather than net income when calculating return on assets. Recall from an earlier discussion that operating income is the income generated from a company's assets excluding how those assets are financed. When calculated using operating income, a better name for the ratio is operating return on assets or **basic earning power**. The basic earning power ratio compares the profit generated from operations with the assets used to generate that income.

$$\text{Basic earning power} = \frac{\text{Operating income}}{\text{Total assets}}$$

Whatever ratio is chosen to measure profitability per unit of assets, it should be used consistently when making comparisons.

How would you assess the profitability of ABC, knowing that the average return on assets and basic earnings power of companies that are similar to ABC and operate in the same industry are 10% and 15%, respectively?

$$\text{ABC's return on assets} = \frac{76}{565} = 0.1345 = 13.45\%$$

$$\text{ABC's basic earning power} = \frac{110}{565} = 0.1947 = 19.47\%$$

ABC's ratios are higher than the industry averages so it appears to be generating more income from its assets than comparable companies. This result reflects well on the company's management because the company is using its assets more efficiently to generate income; it is able to earn more income for each dollar's worth of assets.

To investigate how the company generates more income from its assets than comparable companies, return on assets can be separated into two components:

$$\text{Return on assets} = \text{ROA} = \frac{\text{Net income}}{\text{Total assets}} = \frac{\text{Net income}}{\text{Revenues}} \times \frac{\text{Revenues}}{\text{Total assets}}$$

Similarly, the basic earning power ratio can be separated into two components:

$$\text{Basic earning power} = \frac{\text{Operating income}}{\text{Total assets}} = \frac{\text{Operating income}}{\text{Revenues}} \times \frac{\text{Revenues}}{\text{Total assets}}$$

The first component is a measure of profitability: net profit margin in the return on assets and a ratio called **operating profit margin** in the basic earning power ratio. Net profit margin and operating profit margin show how good the company is at turning revenues into net income or operating income; in other words, how good the company is at controlling its expenses or the costs of generating its revenues.

The second component of return on assets and the basic earning power ratio is a measure of asset utilisation and is known as **asset turnover**. This ratio is expressed as a multiple and indicates the volume of revenues being generated by the assets used in the business, or how effectively the company uses its assets to generate revenues. An increasing ratio may indicate improving performance, but care should be taken in interpreting this figure. An increasing ratio may also indicate static revenues and decreasing assets attributable to depreciation; in other words, sales are not growing and the company is not reinvesting to keep its plant and machinery up to date. It is important to assess the cause of changes in a ratio.

Take a look at the three ratios for ABC shown below. What might these ratios tell you about how ABC generates its profits?

$$\text{ABC's net profit margin} = \frac{76}{650} = 0.1169 = 11.69\%$$

$$\text{ABC's operating profit margin} = \frac{110}{650} = 0.1692 = 16.92\%$$

$$\text{ABC's asset turnover} = \frac{650}{565} = 1.15$$

The first two ratios indicate that for each dollar of revenue, the company generates \$0.1169 of net profit (net income) and \$0.1692 of operating profit (operating income). The net and operating profit margins should be compared with previous years' profit margins or with the profit margins of similar companies to evaluate how well the company is doing. For example, if the net and operating profit margins for ABC the previous year were 10.20% and 15.10%, respectively, it suggests that the company has become more profitable because it has better control of its expenses.

ABC's asset turnover is 1.15 times in the year; in other words, for every \$1 of assets, \$1.15 of revenues is generated. If the asset turnover ratio for similar companies in the same industry averages 1.80, then ABC does not appear to be using its assets as effectively as those companies to generate revenues.

4.3 How Is the Company Financing Its Assets?

A common accounting ratio used for assessing financial leverage, which is the extent to which debt is used in the financing of the business, is the **debt-to-equity ratio**:

$$\text{Debt-to-equity ratio} = \frac{\text{Debt}}{\text{Equity}}$$

This ratio measures how much debt the company has relative to equity. Typically, the debt considered is only interest-bearing debt, including short-term borrowing, the portion of long-term debt due within the reporting period, and long-term debt. It does not include accounts payable and accrued expenses that do not require an interest payment.

Another common ratio is the financial leverage or **equity multiplier ratio**.

$$\text{Financial leverage} = \text{Equity multiplier} = \frac{\text{Total assets}}{\text{Equity}}$$

This equity multiplier measures the amount of total assets supported by one monetary unit of equity. The greater the value of the assets relative to equity, the more debt is being used as financing. A company with a low financial leverage or equity multiplier is one predominantly financed by equity.

Try to assess from the ratios below whether ABC has a high level of debt. What does this level tell you about the riskiness of ABC?

$$\text{ABC's debt-to-equity ratio} = \frac{10 + 232}{233} = \frac{242}{233} = 1.04$$

$$\text{ABC's equity multiplier} = \frac{565}{233} = 2.42$$

A debt-to-equity ratio close to 1 indicates that debt and equity provide approximately equal amounts of financing to ABC. An equity multiplier close to 2 shows that ABC's asset value is more than twice the amount of equity. To interpret these leverage ratios, a comparison should be made with other companies in the same industry. If ABC is found to have a higher proportion of debt than the industry average, then it may indicate a greater financial risk for ABC.

Having a higher proportion of debt is riskier because a company is obligated to service its debt (pay interest) but does not have a similar obligation to service its equity (pay dividends). If a company faced more obligations due to relatively more debt, there is a risk that it will not be in a position to meet those obligations or respond as quickly as its competitors to new opportunities.

In some countries, the use of debt financing is referred to as gearing rather than leverage. Highly leveraged or geared companies are often referred to as being less solvent. Thus, leverage and solvency are concepts that are inversely related. A company that uses little debt financing is generally considered to be more solvent than a company that uses a large amount of debt financing—that is, a company that is highly leveraged.

4.4 Is the Company Providing Sufficient Return for Its Shareholders?

It is important to determine whether the return made by the company is sufficient from the perspective of the shareholders. That is, is the return high enough for investors to still want to own the share? One ratio commonly used to answer this question is **return on equity (ROE)**.

$$\text{Return on equity} = \text{ROE} = \frac{\text{Net income}}{\text{Equity}}$$

This ratio indicates how much return, as measured by net income, is available to a monetary unit of equity. This measure can be compared with the return on equity over time, with the return on equity for other companies, and with the relevant industry average return on equity.

Return on equity can be decomposed in three components: net profit margin, asset turnover, and financial leverage. You can see this algebraically as

$$\text{Return on equity} = \text{ROE} = \frac{\text{Net income}}{\text{Equity}} = \frac{\text{Net income}}{\text{Revenues}} \times \frac{\text{Revenues}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Equity}}$$

or

$$\begin{aligned} \text{Return on equity} &= \text{ROE} \\ &= \text{Net profit margin} \times \text{Asset turnover} \times \text{Financial leverage} \end{aligned}$$

You could simply calculate the return on equity by dividing net income by equity, but the point here is not the algebra itself but the meaning it reveals. The first two components give the return on assets. The other component that potentially affects the return on equity is the amount of leverage or debt used. The assets of the company are financed by debt and equity. A company that has a higher level of debt in its total capital will have a higher return on equity as long as the debt returns more than it costs—that is, as long as its return on assets is greater than its after-tax cost of debt (the cost of its debt net of tax). This is why the financial leverage ratio is also known as the equity multiplier ratio.

In summary, a company's ability to create return for its shareholders (as measured by the return on equity) depends on three factors—its ability to efficiently

- generate profits from revenues, expressed as net profit margin = $\frac{\text{Net income}}{\text{Revenues}}$;
- generate revenues from assets, expressed as asset turnover = $\frac{\text{Revenues}}{\text{Total assets}}$; and
- use borrowing to finance its assets, expressed as financial leverage = $\frac{\text{Total assets}}{\text{Equity}}$.

When any of these ratios increase, all else being equal, the return on equity increases. Although it makes intuitive sense that a company's performance improves when generating more profit from revenues and more revenues from its assets, a company also increases its return on equity by supplementing its equity with borrowing (using leverage). But borrowing may not always be a sound strategy depending on the company's ability to afford its debt. In other words, an increase in return on equity due to borrowing comes with increased risk. This scenario is why ratio analysis (breaking the ratio into components) is useful because it allows analysts to better understand why the company's return on equity is changing and to interpret the sources of that change.

Although each ratio measures an aspect of performance, gaining insight into a company's performance depends on the ability to view the ratios in the larger context of overall competitive and historical performance.

What does the decomposition of ABC's return on equity into its three key components tell you about the company's overall performance?²

$$\text{ABC's return on equity (ROE)} = \frac{76}{233} = 0.3262 = 32.62\%$$

Broken into its components

$$\text{ABC's return on equity} = \text{Net profit margin} \times \text{Asset turnover} \times \text{Financial leverage}$$

² The differences between 32.62%, 32.53%, and 32.55% are due to rounding.

$$= \frac{76}{650} \times \frac{650}{565} \times \frac{565}{233}$$

$$= 11.69\% \times 1.15 \times 2.42 = 32.53\%$$

Or

ABC's return on equity = Return on assets × Financial leverage

$$= \frac{76}{565} \times \frac{565}{233} = 13.45\% \times 2.42 = 32.55\%$$

ABC's return on assets, as discussed in Section 4.2, is approximately 13.45%. ABC's return on assets of 13.45% is probably greater than its after-tax cost of debt. So increasing the leverage of the company, or borrowing to finance assets, has generated a larger return on equity for shareholders. But as noted earlier, the high level of leverage brings greater risks.

4.5 Summary of Ratios

Exhibit 5 shows most of the ratios discussed in Sections 4.1 to 4.4, the formula for each ratio, ABC's value for each ratio for the year ending 31 December 20X2, and the average value for the relevant industry for 20X2.

Exhibit 5 Ratios, Formulas, ABC's Value, and Industry Value

Ratio	Formula	ABC's 20X2 Value	20X2 Industry Value
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	1.65	1.92
Quick ratio	$\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$	0.70	0.75
Return on assets	$\frac{\text{Net income}}{\text{Total assets}}$	13.45%	10.00%
Basic earning power	$\frac{\text{Operating income}}{\text{Total assets}}$	19.47%	15.00%
Return on equity	$\frac{\text{Net income}}{\text{Equity}}$	32.62%	27.30%
Net profit margin	$\frac{\text{Net income}}{\text{Revenues}}$	11.69%	5.56%
Operating profit margin	$\frac{\text{Operating income}}{\text{Revenues}}$	16.92%	8.33%

Exhibit 5 (Continued)

Ratio	Formula	ABC's 20X2 Value	20X2 Industry Value
Asset turnover	$\frac{\text{Revenues}}{\text{Total assets}}$	1.15	1.80
Financial leverage	$\frac{\text{Total assets}}{\text{Equity}}$	2.42	2.73

Ratios are used to standardise financial data for comparisons and create a context for comparing the numbers. By themselves, the ratios for ABC in Exhibit 4 reveal some information about the company's performance. But when compared with industry averages, specific competitors, or previous years' performances, they become a powerful tool for assessing a company's relative performance.

These ratios allow us to see that ABC is less liquid than the industry average. We can also see that ABC's return on assets, basic earning power, and return on equity are higher than the industry average, which is desirable. Looking into what causes these ratios to be higher, we find that it is attributable to higher net and operating profit margins. ABC does not turn over its assets as frequently as the industry average, but it compensates with higher profit margins. ABC uses less debt than the industry average, as reflected in the lower financial leverage ratio, which means it is taking on less financial risk. In spite of the lower financial risk, ABC has a higher return on equity as a result of its higher return on assets. Overall, our ratio analysis suggests that ABC appears to be performing better than the industry average.

4.6 Market Valuations

So far, we have talked about assessing the performance of a company's management using only financial statement data. Another approach is to look at management's performance in terms of creating or destroying value for the company's shareholders. Two ratios, both based on a company's share (market) price, are commonly used. The first ratio compares a company's share price with its earnings per share:

$$\text{Price-to-earnings ratio} = \frac{\text{Market price per share}}{\text{Earnings per share}}$$

This ratio is expressed as a multiple. A **price-to-earnings ratio** (generally called a P/E in practice) of, for example, 15 tells us that investors are willing to pay \$15 for every \$1 of earnings per share. If the price-to-earnings ratio is higher for one company compared with another one in the same industry, it may indicate that investors think that the company with the higher price-to-earnings ratio has stronger growth potential. Alternatively, the company with the lower price-to-earnings ratio may be undervalued by the market. The use of price-to-earnings ratio in valuing companies is further discussed in the Equity Securities chapter.

The second ratio is the **price-to-book ratio**. It compares the company's share price with the company's book value per share:

$$\text{Price-to-book ratio} = \frac{\text{Market price per share}}{\text{Equity book value per share}}$$

where

$$\text{Equity book value per share} = \frac{\text{Equity reported on the balance sheet}}{\text{Number of shares outstanding}}$$

The book value of equity primarily reflects historical costs and measures the amount shareholders have invested in the company through its lifetime. A ratio greater than 1 indicates that investors believe the company is worth more in the long run than the amount shareholders have invested in it. In other words, the company's management has created value for shareholders since their original investment. A ratio less than 1 is an indication that the company's managers have destroyed value.

SUMMARY

Financial statements are important in investors' decisions about whether to purchase securities issued by companies. Careful analysis of a company's financial statements can provide useful information about how a company has performed. The financial statements themselves indicate, for example, how profitable a company is and how much cash it is generating. Financial ratios are critical for putting this information in context by showing performance over time and making comparisons with other companies in the same industry. Financial statement analysis may also be useful in identifying additional questions about a company, its likely future performance, and its ultimate value as an investment.

The points below recap what you have learned in this chapter about financial statements:

- Financial statements are read and analysed by many people to assess a company's past and forecasted performance.
- Accounting standards guide the gathering, analysis, and presentation of information in financial statements.
- Regulators support accounting standards by recognising them and enforcing them.
- Auditors are independent accountants who express an opinion about the financial statements' preparation and presentation. This opinion helps determine how much reliance to place on the financial statements.
- The three primary financial statements are the balance sheet, the income statement, and the cash flow statement. They are accompanied by notes that provide information that helps investors understand and assess the financial statements.
- The balance sheet (or statement of financial position or statement of financial condition) provides a statement of the company's financial position at one point in time. The balance sheet shows the company's assets, liabilities, and equity.

- The accounting equation underlying the balance sheet is Total assets = Total liabilities + Total shareholders' equity.
- The income statement (or profit and loss statement or statement of operations) identifies the profit (or loss) generated by a company during a given time period.
- The profits reported on the income statement are not the same as net cash flows. Revenues and expenses, which are used to calculate profit, are measured on an accrual basis rather than when they are received or paid in cash.
- The statement of cash flows identifies the sources and uses of cash during a period and explains the change in the company's cash balance reported on the balance sheet.
- The statement of cash flows shows how much cash was received or spent, as well as for what the cash was received or spent. Cash inflows and outflows are classified into three kinds of activities on the cash flow statement: operating, investing, and financing.
- The three financial statements have different purposes and provide different kinds of information but they are all related to each other.
- Financial analysis involves the use of information provided by financial statements and other sources to identify critical relationships.
- Financial ratios standardise financial information and provide a context for making comparisons, including to other companies and over time.
- Financial ratios help answer the following types of questions:
 - 1 How liquid is the company?
 - 2 Is the company generating enough profit from its assets?
 - 3 How is the company financing its assets?
 - 4 Is the company providing sufficient return to its shareholders?
- Ratios based on a company's share price help assess management's performance in terms of creating or destroying value for the company's shareholders.
- Below is a recap of the financial ratios discussed in the chapter:

Ratio	Formula
Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$
Quick ratio	$\frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$
Return on assets	$\frac{\text{Net income}}{\text{Total assets}}$
Basic earning power	$\frac{\text{Operating income}}{\text{Total assets}}$

(continued)

Ratio	Formula
Return on equity	$\frac{\text{Net income}}{\text{Equity}}$
Net profit margin	$\frac{\text{Net income}}{\text{Revenues}}$
Operating profit margin	$\frac{\text{Operating income}}{\text{Revenues}}$
Asset turnover	$\frac{\text{Revenues}}{\text{Total assets}}$
Financial leverage	$\frac{\text{Total assets}}{\text{Equity}}$