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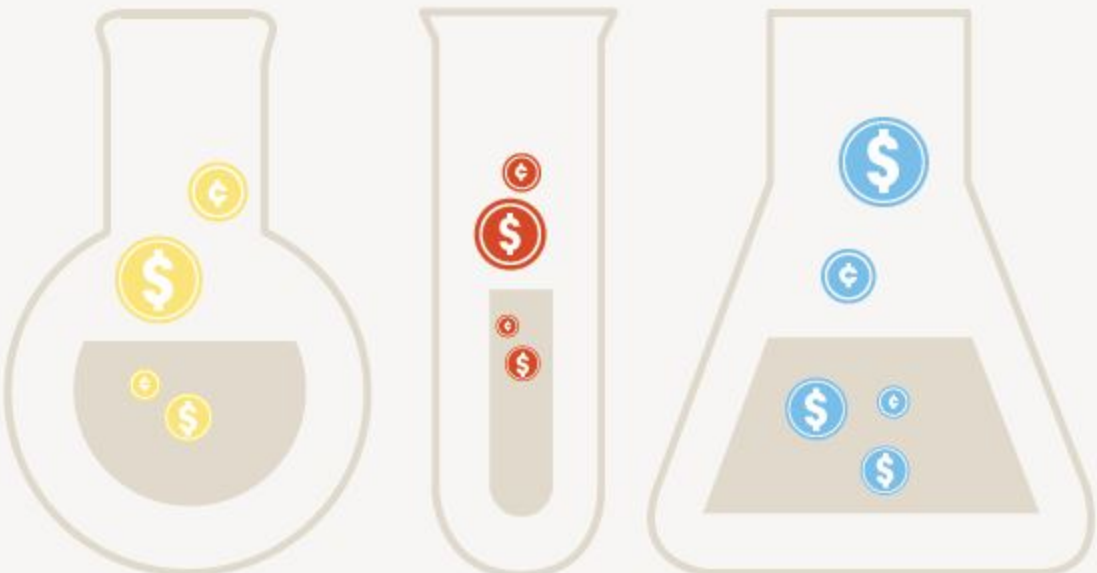

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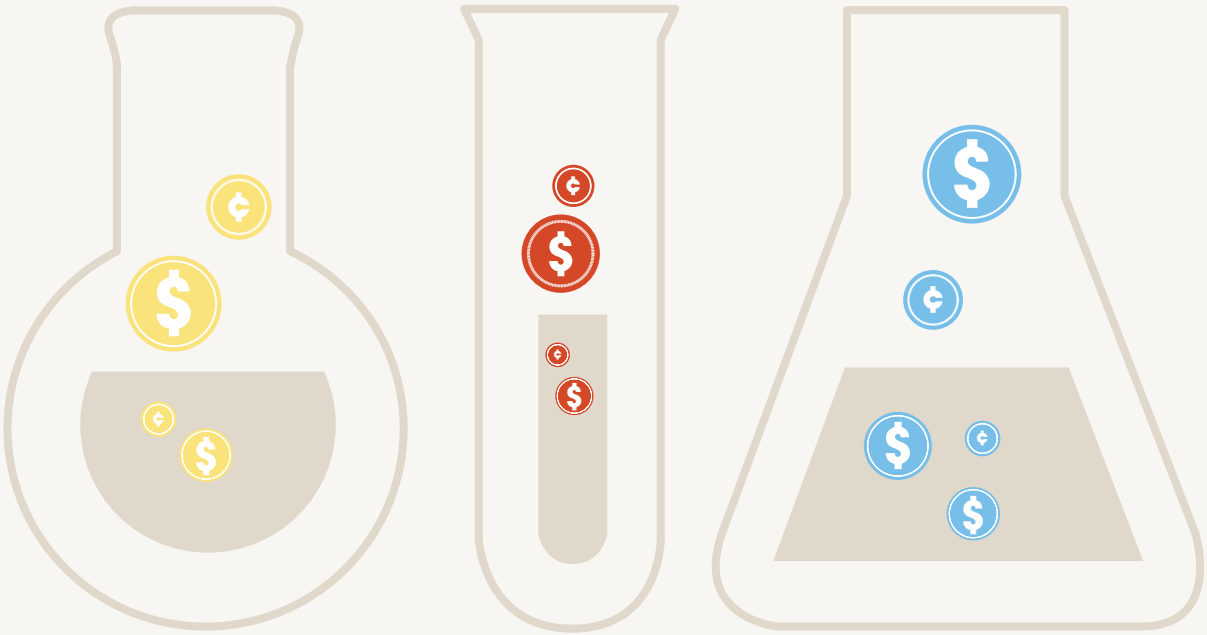

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BRIEF CONTENTS

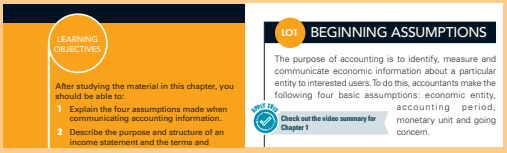
CONTENTS

Guide to the text

As you read this text you will find a number of features in every chapter to enhance your study of financial accounting and help you understand how the theory is applied in the real world.

CHAPTER OPENING FEATURES

Learning objectives at the start of each chapter identify key concepts that will be covered, and **Learning objective icons** appear throughout the chapter to identify where each objective is discussed.

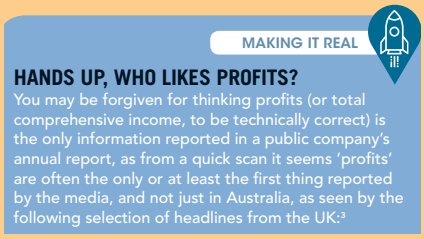


FEATURES WITHIN CHAPTERS

CSL Analysis boxes link to the CSL annual report extract provided in Appendix B of the textbook, and provides an opportunity to apply financial accounting concepts to a real-world business.

Making it Real boxes present real-life financial accounting scenarios to demonstrate the chapter concepts in practice.

Important **key terms** are marked in bold in the text and defined in the margin when they are used in the text for the first time.



such as a month, a quarter, but no longer than a year. This is known as the **accounting period assumption** – the assumption made by accountants that economic information can be meaningfully captured and communicated over short periods of time. Although the measurement involves numbers, it usually requires judgements and estimates not simply mathematical calculations.

accounting period assumption The assumption made by accountants that economic information can be meaningfully captured and communicated over short periods of time.

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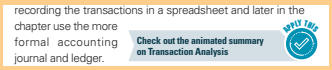

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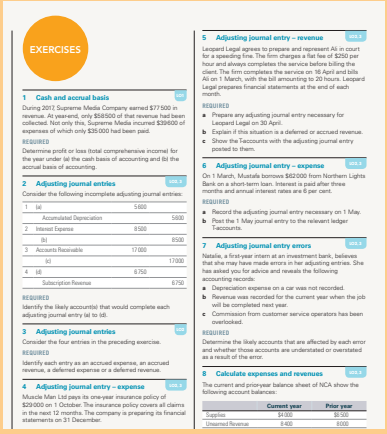

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1

Financial accounting

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Explain the four assumptions made when communicating accounting information.
2. Describe the purpose and structure of an income statement and the terms and principles used to create it.
3. Describe the purpose and structure of a balance sheet and the terms and principles used to create it.
4. Describe the purpose of a statement of changes in equity and how it links the income statement and the balance sheet.
5. Describe the purpose and structure of a statement of cash flow and the terms and principles used to create it.
6. Appreciate the objectives of financial reporting and qualitative characteristics that make accounting information useful.
7. Review the language of accounting.

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Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

Imagine for a moment that you are on summer holidays and decide to turn your hobby into a business which you name Aerial Filming. With $1000 of your own money and a $2000 microenterprise loan from the bank you purchase a $2600 drone (with gimbal, camera and rechargeable battery), $350 of spare propellers, disposable batteries, SIM cards and other supplies. During December, January and February, you had 28 aerial filming jobs at an average of $400 each job, you buy $750 additional supplies and pay the bank $50 interest. At the end of February, you still have the bank loan, you also have $1940 in cash, $100 of supplies and $1200 owing to you from three customers.

Given this information, can you tell what happened to your business over summer? Did you make enough money to make it worth continuing or would it have been financially more rewarding working at the local IGA store? How can you tell? Getting answers to such questions requires accounting, because ultimately you are filming to make money, no longer for the simple pleasure of flying and filming with a drone or to provide a community service. Working for yourself has certain advantages, but also hassles, which may not come with being an employee, and these need to be balanced against the financial success of the business. All of us need money to eat, pay for accommodation, the phone, travel, buy clothes, entertainment, and hopefully, at some stage save.

Accounting is the process of identifying, measuring and communicating economic information to permit informed judgements and decisions. Put more simply, accounting is the language of business. When you want to know about the financial results of a business, you must understand and speak accounting. The purpose of this book is to help you learn, write and speak this language so that you can make socially responsible and financially sound business decisions.

accounting The process of identifying, measuring and communicating economic information to permit informed judgements and decisions.

With this overall purpose in mind, this chapter introduces the basic terms, principles and rules that comprise the 'spelling' and 'grammar' of the accounting

Alamy Stock Photo/ITAR-TASS News Agency

Accounting as the language of business, would describe this picture as a person using an asset (the drone) to generate revenue (the money she will be paid)

language. It does so by creating the summer financial statements of the aerial filming business, Aerial Filming, described above. At the end of the chapter, you should be familiar with the four main financial statements – income statement, balance sheet, statement of cash flow, statement of change in equity. Further, you should also have a working accounting vocabulary that will be expanded and refined in the following chapters.

LO1 BEGINNING ASSUMPTIONS

The purpose of accounting is to identify, measure and communicate economic information about a particular entity to interested users. To do this, accountants make the following four basic assumptions: economic entity, accounting period, monetary unit and going concern.

Check out the video summary for Chapter 1

ECONOMIC ENTITY ASSUMPTION

economic entity assumption The assumption made by accountants that the financial activities of a business can be separated from the financial activities of the business' owner(s).

The **economic entity assumption** states that the financial activities of a business can be separated from the financial activities of the business' owner(s) and from other business activities. This assumption allows a user to examine a company's (sole trader's or partnership's) accounting information without concern that the information includes the personal affairs of the owner(s) or other business activities. For the Aerial Filming example in the introduction, this means that the business is the reporting entity and your personal activities (such as the cost of your Saturday evening out) should not be included with business activities (such as buying batteries for the drone). The definition of the 'reporting entity' can be complex and is covered in detail in the (Australian) *Financial Reporting Handbook* (the big book of rules for accountants preparing financial statements) Statement of Accounting Concept SAC 1.

ACCOUNTING PERIOD ASSUMPTION

Business owners and other interested parties usually do not want to wait too long before they receive information about how a business is doing. They want periodic measurements of the business' financial success or failure. For many activities, be it a diet or sports training, it is useful to measure your performance at regular intervals to determine if you should change your strategy. In business, performance is measured primarily in financial terms. Accountants therefore assume that economic information can be meaningfully captured and communicated over short periods of time, even if those accounting periods are somewhat artificial, such as a month, a quarter, but no longer than a year. This is known as the **accounting period assumption** – the assumption made by accountants that economic information can be meaningfully captured and communicated over short periods of time. Although the measurement involves numbers, it usually requires judgements and estimates not simply mathematical calculations.

accounting period assumption The assumption made by accountants that economic information can be meaningfully captured and communicated over short periods of time.

Publicly traded companies such as CSL Limited are required to file financial statements with the Australian Securities Exchange (ASX) at least twice a year. For the Aerial Filming business example, the time period is the three months of summer.

MONETARY UNIT ASSUMPTION

monetary unit assumption An assumption made by accountants that the dollar is the most effective means to communicate economic activity.

The **monetary unit assumption** assumes that the dollar is the most effective means to communicate economic activity – it is the 'attribute of interest'. The drone has many attributes: manufacturer, model, range, flying time, colour; but the attribute of interest in accounting is the cost in dollars. If an economic activity cannot be expressed in dollars, then it is not recorded in the accounting system. For Aerial Filming, placing a paid advertisement in the local paper would be recorded as an expense, while a favourable story would not be recorded in accounting as no money was exchanged. This is one of the limitations (and strengths) of accounting. It assumes further that the dollar is a reasonably stable measure (the effect of inflation and deflation can be ignored).

GOING CONCERN ASSUMPTION

going concern assumption The assumption made by accountants that a company will continue to operate into the foreseeable future.

The **going concern assumption** takes as a given that a business will continue to operate into the foreseeable future. Unless there is evidence to the contrary, most businesses are assumed to be going concerns. This is important because it affects the dollar amount recorded with respect to the value of certain assets. Because Aerial Filming will continue beyond the summer, it is a going concern and we value the drone at what it is worth to the business, not what it can be sold for at the end of summer.

In Appendix B *CSL Annual Report 2017*, you can find CSL's income statement with the following three descriptions:

1 Consolidated Statement of Comprehensive Income
2 US$m
3 For the year ended 30 June 2017.

Which assumption does each description best relate to?

Analysis:

1 economic entity
2 monetary unit (for comparison with other biotech companies CSL reports in US dollars, it does not affect the assumptions here)
3 time period.

MAKING IT REAL

IS THE BUSINESS A GOING CONCERN?

The Auditing Standard ASA 570 Going Concern suggests the following wording for the Auditor's report when a business has been unable to find sufficient financing:

Basis for qualified opinion

'As discussed in Note yy, the Company's financing arrangements expire and amounts outstanding are payable on 19 August 20X2. The Company has been unable to conclude renegotiations or obtain replacement financing. This situation indicates that a material uncertainty exists that may cast significant doubt on the Company's ability to continue as a going concern. The financial report does not adequately disclose this matter.'[1]

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LO2 REPORTING PROFITABILITY: THE INCOME STATEMENT

The first question usually asked of a business is whether it is making any money. In accounting we would ask: Is the business profitable? Does it generate more resources than it uses? Accounting provides answers to these questions with a financial statement called the **income statement** (sometimes called the **profit and loss statement**) or, to be technically correct, the *statement of comprehensive income*.

income statement (profit and loss statement) The income statement reports a company's revenues and expenses and the resulting profit or loss.

This reports a company's *revenues* and *expenses* and the resulting *profit or loss (net income or total comprehensive income)*. When a company releases its annual report, the news headline is almost always the profit or loss number; for example, 'Commonwealth Bank Reports $9.9 Billion Profits'.

REVENUES

Royal Australian Mint

Revenues and expenses are measured in dollars

A **revenue** is an increase in resources resulting from the sale of goods (sales revenue) or the provision of services (service revenue). Receiving $400 for filming a surfing competition is an example of revenue. You have $400 that you didn't have before you provided the service.

revenue An increase in resources resulting from the sale of goods or the provision of services.

Revenues are recorded according to the **revenue recognition principle**. The revenue recognition principle states that revenue should be recorded when a resource has been earned, regardless of when the cash is received. That is, you may ask for advance payment prior to filming the surf contest or decide not to bill the surfers until after they have received their prize money. Regardless of when cash is received, revenue is earned when you do the filming. The provision of the service is substantially complete, and collection is reasonably assured. This is known as accrual-based accounting and is distinguished from cash-based accounting. The Australian Accounting Standard: AASB 15 Revenue from Contracts with Customers provides much more detail on calculating the amount and timing of revenue recognition.

revenue recognition principle The principle that revenue should be recorded when a resource has been earned and not just when the cash is received.

Given these definitions, total revenue for summer for Aerial Filming is as follows: you have only one source of revenue – airborne filming. Assuming that your customers will pay, your filming business earns revenue each time a filming job is undertaken. So, if you filmed 28 occasions at $400 each, revenues total $11 200 for the summer. Of those revenues, you have received cash for all except three ($1200). The $1200 has been earned (you have carried out the service and expect to be paid), although it has not been received in cash.

EXPENSES

expense A decrease in resources resulting from the operation of a business.

An **expense** is a decrease in resources resulting from the operation of a business. The replacement propellers, disposable batteries and other supplies consumed (used up) while filming are examples of expenses. Other expenses common to businesses are wages, taxes, advertising, rent, interest and utilities (i.e. electricity, water and gas).

Expenses are recorded in the period they are incurred. The **matching principle** states that expenses should be recorded in the period resources are used to generate revenues. For example, in summer the disposable batteries are used and should therefore be included in summer's expenses. The recording of revenues and expenses in the period they are earned and incurred should result in accurate matching and the calculation of a 'true and fair' profit or loss.

matching principle The principle that expenses should be recorded in the period resources are used to generate revenues.

Given these definitions, total summer expenses for the filming business are as follows. While the business has only one source of revenue, the filming business has three sources of expenses. The first is supplies. From the given information, the amount of supplies used during summer can be calculated as follows:

Amount on hand at the beginning of summer	$ 350
Plus amount purchased during summer	750
Less amount on hand at the end of summer	(100)
Amount used during summer	$1 000

Therefore, supplies expense in this period is $1000.

The second expense relates to your borrowing. You paid the bank $50 at the end of summer to compensate them for loaning you $2000. Paying for the use of someone else's money is called interest. Therefore, interest expense is $50.

The third expense relates to your equipment – the drone. Unlike supplies, which are used up and need to be refilled, equipment includes things like tools and furniture that is used on an ongoing basis (although it will eventually deteriorate and be of no economic value to the business). Because this equipment was used in summer to generate revenues, the matching principle requires that some portion of the equipment's cost be expensed in summer. This is called depreciation expense. Chapter 8 will discuss the various methods for calculating depreciation expense, but for now we will keep things simple. Assuming that the equipment will be used for another three seasons and then thrown away, it is reasonable to expense one-quarter of the equipment's cost each season. This equals $650 for the drone ($2600 cost divided by four seasons). Therefore, depreciation expense for summer is $650.

THE INCOME STATEMENT

Once a company's revenues and expenses are calculated, they are reported on the **income statement**. This is the financial statement that shows a business' revenues and expenses *over a specific period of time*. Its purpose is to demonstrate the financial success or failure of the business over that specific period. When revenues exceed expenses, a company generates a profit. When expenses exceed revenues, a company incurs a loss. The basic structure of the statement is as follows:

income statement The financial statement that reports a company's revenues and expenses over a specific period of time.

KEY FORMULA 1.1 INCOME STATEMENT

Revenues – Expenses = Net Profit or Net Loss
(or Income, more formally, Total Comprehensive Income)

Given the revenues and expenses determined previously, Aerial Filming's summer income statement would appear as shown in Exhibit 1.1. It contains the business name, the statement name (that is, 'Income statement') and the time period, which for this example is the summer – the months of December, January and February. It also shows that the filming business generated $9650 of profits during summer. This part of the statement is often called the 'profit and loss' section.

Aerial Filming
Income statement
for the three months ending 28 February

Revenues		$11 200
Expenses:		
Supplies	$1 000	
Interest	50	
Depreciation	650	
Total expenses		$ 1 700
Profit		$ 9 500

EXHIBIT 1.1 Income statement for Aerial Filming

CSL ANALYSIS

Look at CSL's income statement (consolidated statement of comprehensive income) in Appendix B. The statement contains six revenues (including 'finance income' and 'gain on acquisition' in the middle of the statement) and six expenses (including 'cost of sales', 'finance costs' and 'income tax expense').

1 Can you identify the others?
2 What was the company's 'net profit for the period' (after tax) for 2017?

Analysis:
At this stage do not become too concerned over the particular profit figure used. CSL's financial statements in the appendix are an extract from its annual report as required by Corporations Law and are complex, especially for the first-time viewer.

- Revenues: sales revenue; Pandemic Facility Reservation fees; royalties and licence revenue; other income.
- Expenses: research and development expenses; selling and marketing expense; general and administration expense.
- Net profit for the period (after income tax expense) for 2017: $1337.4 million. This was over $95 million more than 2016 ($1337m – $1242m)!

MAKING IT REAL

WHY DO WE HAVE FINANCIAL STATEMENTS?

Dun & Bradstreet[2]

D&B is the world's leading source of commercial information and insight on businesses, and the need of financial statements. This need shows that financial statements are not only important for students beginning their study of business, but also for use in a billion-dollar company, both inside and outside the company.

Before we start our review of financial statements, it is important to understand why they are put together in the first place. Management of any business requires a flow of information to make informed, intelligent decisions affecting the success or failure of its operations. Investors need statements to analyse investment potential. Banks require financial statements to decide whether or not to loan money, and many companies need statements to ascertain the risk involved in doing business with their customers and suppliers.

LO3 REPORTING FINANCIAL POSITION: THE BALANCE SHEET

Another important issue for any business is its current financial position. What does the business own? What does it owe? Accounting provides answers to these questions with a financial statement called the **balance sheet** (sometimes called the *statement of financial position*), which reports a business' assets, liabilities and equity at a point in time.

balance sheet A financial statement that reports a business' assets, liabilities and equity at a specific point in time.

ASSETS

An **asset** is a resource of a business. More formally, it is an economic resource that is objectively measurable, that results from a prior transaction, and that will provide future economic benefit. Cash is a good example of an asset: it can be counted, it is received through a transaction with someone else and it can be used to buy things in the future. Other common assets include inventories, receivables, property, plant and equipment, and intangible assets (assets that have no physical form, such as trademarks and copyright). Money owed to the business is often called a receivable, it is an asset because you expect to exchange it for cash when you are paid.

asset An economic resource that is objectively measurable, results from a prior transaction and will provide future economic benefit.

Assets are recorded and reported according to the historical cost principle, which is often shortened to the cost principle. The **cost principle** states that assets should be recorded and reported at the cost paid to acquire them.

cost principle The principle that assets should be recorded and reported at the cost paid to acquire them. Sometimes referred to as the 'historical cost principle'.

Given these definitions, Aerial Filming has several assets at the end of February:

- $1940 of cash
- $100 of remaining supplies
- $1200 of receivables from customers.

You also have a used drone, but the value of this asset is calculated a little differently because it will continue to be used beyond this summer. The drone originally cost $2600, but (as explained above) the matching principle allows us to expense $650 of that cost in summer. This is called depreciation expense. As a result, the drone's remaining value to the business is $1950 ($2600 – $650). Again, Chapter 8 will discuss in much more detail the accounting for equipment and the related depreciation expense calculations.

LIABILITIES

A **liability** is an obligation of a business. More formally, it is a present obligation of a business that results from a past transaction and will require the sacrifice of economic resources at a future date. Examples of liabilities common to businesses include accounts payable to suppliers, salaries payable to employees and taxes payable to governments. The only liability of Aerial Filming at the end of summer is the $2000 borrowed from the bank which is considered a creditor. A creditor is a person or business who you owe money to. As will be explained below, the business does not have a liability for the $1000 of your own money that was contributed to the business. You are the owner, not a creditor.

liability An obligation of a business that results from a past transaction and will require the sacrifice of economic resources at a future date.

EQUITY

equity The difference between a business' assets and liabilities, representing the share of assets that is claimed by the business' owner(s).

Equity is the difference between a business' assets and liabilities and represents the share of assets that are claimed by the business' owner(s). An example of equity with which you may be familiar is home equity. A homeowner's equity refers to the difference between the value of the home and the amount owed to the bank. Equity in accounting is the same principle except that it usually refers to the difference between the cost of the business' assets and its liabilities.

A business (company) can generate equity in two ways. The first is through contributed (or issued) capital.

contributed capital The resources that investors contribute to a business in exchange for ownership interest.

Contributed capital is defined as the resources that investors put into a business in exchange for an ownership interest. The $1000 that you, the owner, put into Aerial Filming is contributed capital. Note here that contributed capital is *not* revenue. The increase of $1000 did not result from the filming business providing a service or selling a product. It came by contributing an ownership interest. The most common method that companies use to generate contributed capital is the issue (sale) of shares to investors. (Note that this is different to the daily buying and selling of shares on the securities exchange where existing owners sell to new owners.)

The second way a business generates equity is through profitable operations. When a business generates profits, it can either distribute them to owner(s) or retain them to grow the business. Profits that are distributed to a company's owners (shareholders) are called **dividends** or drawings for a non-company business (sole trader or partnership). Note here that dividends are not an expense of a company: they are simply a distribution of company assets to owners. Profits that are retained in the business are called **retained earnings**. A company's retained earnings therefore represent the equity generated from profitable operations that is kept in the company. Since Aerial Filming at the end of summer has less assets than the combined liabilities and contributed equity plus profits, there must have been some assets distributed to you. You obviously needed some 'spending money' over summer.

dividends Profits that are distributed to owners (usually called drawings if the business is not a company).

retained earnings Profits that are kept in the business.

THE BALANCE SHEET

The balance sheet is the financial statement that shows a business' assets, liabilities and equity *at a specific point in time*. Its purpose is to show a business' resources and the claims against those resources. Because a balance sheet is reported at a moment in time, it is often referred to as a still photograph or snapshot of a business. The basic structure of the statement is as follows:

KEY FORMULA 1.2 THE RELATIONSHIP BETWEEN ASSETS, LIABILITIES AND EQUITY

Assets = Liabilities + Equity

Given the assets, liabilities and equity determined previously, Aerial Filming's balance sheet would appear as shown in Exhibit 1.2. It contains the business name, the statement name and the time reference, which for this example is 28 February.

Aerial Filming
Balance sheet
at 28 February

Cash	$1 940	
Accounts receivable (money customers owe)	1 200	
Supplies	100	
Drone	1 950	
Total assets		$5 190
Loan from bank	$2 000	
Total liabilities		$2 000
Contributed capital	$1 000	
Retained earnings	2 190	
Total equity		$3 190
Total liabilities and equity		$5 190

EXHIBIT 1.2 Balance sheet for Aerial Filming

Notice that total assets equal total liabilities plus total equity (or assets minus liabilities equals net assets, which is equity). This will always be the case for any business. An entity's assets are always claimed by someone. Either they are owed to someone (in the filming business' case, the bank) or claimed by an owner (you). No asset of any business is ever unclaimed. This relationship between assets, liabilities and equity is represented by the following equation, known as the accounting equation or balance sheet equation: *Assets = Liabilities + Equity*. During summer you must have withdrawn $7310 ($9500 – $7310 = $2190), because even if you were not a good record keeper we could calculate the amount of retained earnings simply by inserting the retained earnings dollar amount to make the accounting equation balance.

CSL ANALYSIS

Look at CSL's balance sheet in Appendix B. Write out in numbers the company's accounting equation (A = L + E) as at 30 June 2017. How many different assets does the company disclose?

Analysis:

A = L + E
9123 = 5989 + 3164
(rounded to the nearest million)

Ten different assets are listed on CSL's balance sheet.

APPLY THIS

Review this content with the e-lecture

LO4 REPORTING EQUITY: THE STATEMENT OF CHANGES IN EQUITY

Business owners are usually interested in how their equity is growing as a result of profitable operations. They are also interested in how that equity is distributed in the form of dividends. Such information is reported on the **statement of changes in equity**. It shows the change in a business' equity, but most importantly, the changes in retained earnings over a specific period of time. The basic structure of the statement is as follows:

statement of changes in equity A financial statement that reports the change in a business' equity (contributed equity, reserves and retained earnings) over a specific period of time.

KEY FORMULA 1.3 STATEMENT OF CHANGES IN EQUITY (THE RETAINED EARNINGS PART)

Retained Earnings, Beginning Balance
+/– Net Profit/Loss
– Dividends
= Retained Earnings, Ending Balance

Getty Images/Hugh Peterswald

The drone is the asset, which is being used by the business to earn revenue

Aerial Filming's statement of changes in equity (retained earnings) would appear as shown in Exhibit 1.3. It contains the name of the business, the statement name and the time period, which for this example is the summer. Note there are a number of acceptable ways to express the time or timing in financial statements.

Aerial Filming
Statement of changes in retained earnings from 1 December to 28 February

Retained earnings, 1 December	$ 0
+ Net income (or Net profits)	9500
– Drawings (Dividends)	7310
Retained earnings, 28 February	$ 2190

EXHIBIT 1.3 Statement of changes in retained earnings for Aerial Filming

Your business started with no retained earnings but generated profits of $9500 over summer. Since $7310 was distributed in dividends (or drawings) the business retained some of that money. Therefore, retained earnings increased from $0 to $2190.

LINKING THE INCOME STATEMENT AND THE BALANCE SHEET

In addition to showing the change in retained earnings, the changes in retained earnings part of the statement of changes in equity links the income statement and the balance sheet. A business cannot calculate its retained earnings balance at the end of the period without factoring in the profit earned during the period. The changes in retained earnings provide this link by including net profit or loss in the calculation of retained earnings, which is then reported on the balance sheet. This means that when preparing financial statements for any business, the income statement must be prepared first, followed by the statement of changes in equity and then the balance sheet. A depiction of these links is included in Exhibit 1.4.

Aerial Filming

Income statement	
Revenue	$11 200
– Expenses	1 700
Net income (or Profit)	$ 9500
Statement of changes in equity (retained earnings)	
Retained earnings, 1 December	$ 0
+ Net income (from above)	9500
– Drawings	7310
Retained earnings, 28 February	$ 2190
Balance sheet	
Total assets	$ 5190
Liabilities	2000
Contributed capital	1000
Retained earnings (from above)	2190
Total liabilities and equity	$ 5190

EXHIBIT 1.4 Relationship between the financial statements

CSL ANALYSIS

Look at CSL's statement of changes in equity in Appendix B.

1 Which column of the statement contains the changes in retained earnings?
2 For 2017, is the amount of profit after income tax expense for the period the same as profit after tax on the income statement?
3 Is the balance in retained earnings the same as the balance on the balance sheet? (Hint: look at the numbers in bold, they are for 2017.)

Analysis:
The statement of changes in equity has five columns of numerical data. The fourth column (headed 'Retained Earnings') is CSL's statement of changes in retained earnings. In 2017, the amount of profit after tax for the period is $1377.4 million, which is the number shown on the income statement; and the total retained earnings at the end of the period is $7403.9 million in retained earnings, which is the same balance shown on the balance sheet.

LO5 REPORTING CASH FLOWS: THE CASH FLOW STATEMENT

Another important issue for any business is the management of cash. Where does a company get its cash? Where does its cash go? Will there be enough cash to pay the employees? Accounting provides answers to these questions with a financial statement called a cash flow statement. A cash flow statement reports a business' cash inflows and outflows from its *operating*, *investing* and *financing activities*.

FINANCING ACTIVITIES

Most businesses must raise funds to begin. Borrowing money from creditors and receiving contributions from investors are both ways to finance a business' operations. Therefore, generating and repaying cash from creditors and investors are considered *financing activities*. In the filming business, you contributed $1000 of your own money and borrowed $2000. Both of these inflows are from financing activities. Therefore, the cash inflow in summer from financing activities is $3000. You withdrew $7310 – this is a cash outflow from financing activities.

INVESTING ACTIVITIES

Once a company has raised sufficient capital from creditors and investors, it usually acquires the revenue-generating assets that it needs for operations. The buying and selling of such assets are considered *investing activities*. In the filming business, you paid $2600 for the drone. Therefore, the cash flows from investing activities were negative $2600. In other words, Aerial Filming experienced a cash outflow of $2600 in summer from investing activities.

OPERATING ACTIVITIES

After the proper equipment is acquired, a business can begin operations. Operating a business may include the purchase of supplies, the payment of employees and the sale of products. These transactions are considered *operating activities*. For Aerial Filming, cash flows from operations over summer included $10 000 received from customers for filming, $1100 paid for supplies and $50 paid to the bank in interest. As a result, the net cash inflow from operating activities for the month was $8850 ($10 000 minus $1100 minus $50). Note: this is not the same as profits, because revenue included the $1200 you are owed; expenses included depreciation but not the cost of unused supplies.

THE CASH FLOW STATEMENT

The details of cash inflows and outflows for a business are reported on a **cash flow statement**. The cash flow statement is a financial statement that shows a business' sources and uses of cash over a specific period of time. Its purpose is to inform users about how and why a business' cash changed during the period. The basic structure of the statement is as follows:

cash flow statement A financial statement that reports a business' sources and uses of cash over a specific period of time.

KEY FORMULA 1.4 THE CASH FLOW STATEMENT

Cash Flows Provided (Used) by Operating Activities
+/– Cash Flows Provided (Used) by Investing Activities
+/– Cash Flows Provided (Used) by Financing Activities
= Net Increase (Decrease) in Cash
+ Cash at the beginning
= Cash at the end

Given the cash inflows and outflows described previously, Aerial Filming's summer cash flow statement would appear as shown in Exhibit 1.5. It contains the business name, the statement name and the time period covered, which for this example is the three months to the end of February. It also shows a net change in cash from 1 December to 28 February of $1940. Again, note the three months is expressed differently but clearly and communicates the time period covered.

Aerial Filming Cash flow statement for the months of December, January and February		
Operating activities		
Cash received from customers	$10 000	
Cash paid for supplies	(1 100)	
Cash paid for interest	(50)	
Net cash provided by operating activities		$8 850
Investing activities		
Cash paid for drone	$ (2 600)	
Net cash used by investing activities		(2 600)
Financing activities		
Cash received from borrowing	2 000	
Cash received from owner	1 000	
Drawings (dividend)	(7 310)	
Net cash used by financing activities		(4 310)
Net increase in cash		$1 940
Cash balance, 1 December		0
Cash balance, 28 February		$1 940

EXHIBIT 1.5 Cash flow statement for Aerial Filming

Note that the ending cash balance on the statement agrees with the cash balance shown on the balance sheet in Exhibit 1.2. Since $2600 of the $3000 of cash generated from financing activities was invested into the drone, the majority of the $1940 of cash on hand was generated through operations. This, of course, is a good sign and indicates you are likely to be able to repay the bank and to keep or spend some cash on yourself.

You might also consider the situation if all customers waited three months to pay you. Your profit in summer would have been the same, but your cash flow very different. There would have been no spare cash to draw out and you would have needed to borrow more money just to buy most of the supplies and interest.

CSL ANALYSIS

Look at CSL's cash flow statement in Appendix B. How much cash did CSL generate or use for operating, investing and financing activities during 2017?

Analysis:

- **Operating activities:** generated $1246.6 million
- **Investing activities:** used $862.9 million
- **Financing activities:** used $103.5 million.

APPLY THIS

Download the Enrichment Modules for further practice

LO6 THE OBJECTIVES OF FINANCIAL REPORTING

> The objective of general purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity. Those decisions involve buying, selling or holding equity and debt instruments, and providing or settling loans and other forms of credit.[3]

Even though accounting is a very quantitative process and the financial statements introduced so far are full of numbers, accounting information must possess certain qualitative characteristics to be considered useful. Information in the financial reports is often based on estimates, judgements, and at times the choice of one accounting method rather than an alternative. It is also important to note that financial reports cannot provide all the information that different users may want.

If financial information is to be useful, it must be relevant and faithfully represent what it is reporting on. Financial information is more useful if it is comparable, verifiable, timely and understandable.

RELEVANCE AND MATERIALITY

relevance The capacity of accounting information to make a difference in decisions.

Relevant financial information can influence the decisions made by users because it has predictive value (allows the user to better determine what the future may be), confirmatory value (provides feedback on past predictions) or both.

Information that can help confirm may also help predict. For example, information about the revenue Aerial Filming earned over summer can be compared with the revenue predicted at the commencement of the business to determine how accurate those predictions were, and in turn may be used to help predict revenue in autumn with greater accuracy.

materiality The threshold at which a financial item begins to affect decision-making.

Information is considered **material** if it has the capacity to affect decisions when omitted or misstated. For a student the difference between an exam mark of 49 and 50 is material since a 49 means the student fails but one additional mark means he or she passes; however, a larger difference, say between 90 and 95, may not influence decisions. An example of materiality in practice is how CSL report results to the closest tenth of a million of dollars (see Appendix B). The numbers being reported are so large that giving more exact amounts is unlikely to make a difference to decision-making.

Measurement uncertainty will also impact relevance. If estimates are difficult to make or the range is large the

information will be less useful; for example, forecasts of tomorrow's temperature are usually given in whole degrees since they are estimates, while reporting of yesterday's temperature can be given to two decimal places since the exact temperature is known.

FAITHFUL REPRESENTATION

Financial statements summarise economic events in words and numbers. To be useful it must faithfully represent the business activities by providing information about the substance of the activity not just its legal form. Information **faithfully represents** the financial position and performance if it is complete, neutral and free from error (which does not mean accurate in all respects as estimates and judgements need to be made). In an attempt to provide complete information, companies provide additional notes (for example, see CSL's 'Notes to the financial statements' in Appendix B).

faithful representation Financial information that is presented in a way that is complete, neutral and free from error.

Neutrality is supported by the exercise of *prudence*, which is caution when making judgements under conditions of uncertainty. The exercise of prudence means that assets and income are not overstated and liabilities and expenses are not understated. The term 'conservatism' is no longer used.

Information must be both relevant and faithfully represented if it is to be useful. Comparability, verifiability, timeliness and understandability are qualitative characteristics that enhance the usefulness of information that is relevant and faithfully represented.

COMPARABILITY

Comparability refers to the ability to use accounting information to be weighed against or contrasted to the financial activities of different businesses. Being able to compare information across businesses allows an entity to assess its market position within an industry, to gauge its success against a competitor and to set future goals based on industry standards.

comparability The ability to use accounting information to be weighed against or contrasted to the financial activities of different businesses.

Comparability does not imply uniformity. Accounting rules allow for some discretion in the manner in which accounting is applied to economic phenomena. As a result, two businesses with the same economic phenomena could have different accounting information because they use different acceptable accounting methods (such as different ways to calculate the depreciation) or make different estimates (such as how long the drone will last). Because such differences in accounting methods are a challenge to comparability, accounting rules require that entities disclose the accounting methods that they use so that information can be more easily compared across entities. Usually, such methods are disclosed in the notes to the financial statements, which are discussed in Chapter 2.

Getty Images/Paper Boat Creative

Comparability is an activity with which many are familiar

VERIFIABILITY

Verifiability allows users to accept that the financial statements faithfully represent the business activity they claim to represent. Verifiability means that different knowledgeable and independent observers would have prepared financial statements that are not materially different. Verifiable information does not need to only have one possible outcome to be verifiable. For Aerial Filming the drone may only last eleven months. A range of possible amounts and the related probabilities can also be verified.

verifiability When information allows different independent observers to arrive at the same or similar outcomes.

TIMELINESS

In addition to having feedback or predictive value, accounting information must be **timely** to be useful. Information that helps you forecast March revenues is relevant when it is received in February, not when it is received in April. Generally, the older the information the less useful.

timeliness When information is provided quickly enough that the user can take action.

UNDERSTANDABILITY

Accounting information should first and foremost be understandable. **Understandability** refers to the ability of accounting information to be comprehensible to those who have a 'reasonable understanding of business and economic activities and accounting and a willingness to study the information with reasonable diligence'.[4] Notice that this definition puts much of the responsibility on the user of accounting information. Users must be willing to spend a *reasonable* amount of time studying the information. No specifics are given on what is a 'reasonable amount of time', but it is obvious that the more time you spend studying accounting information, the more you will understand.

understandability The ability of accounting information to be comprehensible to those who have a 'reasonable understanding of business and economic activities and accounting and a willingness to study the information with reasonable diligence'.

LO7 THE LANGUAGE OF ACCOUNTING

This chapter introduced many of the terms, principles, assumptions, objectives and qualitative characteristics that are necessary to communicate the financial activities and position of a business. While they were initially described as the grammar of accounting, they are more formally known as components of the **Conceptual Framework for Financial Reporting**, the collection of concepts that guide the manner in which accounting is practised.

Conceptual Framework for Financial Reporting
The objectives, characteristics and concepts that guide the manner in which accounting is practised.

The following tables summarise the elements of this conceptual framework and also serve to review this chapter. They will provide a good reference for you as you proceed through the remaining chapters. As you tackle more complex accounting methods and procedures, keep in mind that they are simply extensions of the basic grammar presented in the tables. So, with a good understanding of the conceptual framework, you have the grammar necessary to begin your study of accounting.

Test your understanding with the online revision quizzes for this chapter

APPLY THIS

Term	Definition	Reported on the
Asset	A resource of a business	Balance sheet
Liability	An obligation of a business	Balance sheet
Equity	The difference between assets and liabilities	Balance sheet
Contributed equity (capital)	Equity resulting from contributions from owners (often from issuing shares)	Balance sheet
Retained earnings	Equity resulting from profitable operations	Balance sheet and statement of changes in equity (change in retained earnings)
Revenue	An increase in assets resulting from selling a good or providing a service	Income statement
Expense	A decrease in assets resulting from selling a good or providing a service	Income statement
Dividend (Drawings)	A distribution of profits to owners	Statement of changes in equity

Terms used to identify and describe financial information

Principle	Definition	Ramification
Revenue recognition	Revenues are recorded when they are earned	The receipt of cash is not required to record a revenue. If you sell to a customer who will definitely pay you next week, the revenue is earned when the sale is made, not when you receive the cash
Matching	Expenses are recorded in the time period when they are incurred to generate revenues	For many assets, the cost of the asset must be spread over the periods when it is used – we call this depreciation
Cost	Assets are recorded at their historical costs	Except in a few cases, market values are not used for reporting asset values

Principles used to measure financial information

Assumption	Definition	Ramification
Economic entity	The financial activities of a business can be accounted for separately from the business' owners	We do not have to worry that the financial information of the owner is mixed with the financial information of the business
Monetary unit	The dollar, unadjusted for inflation, is the best means of communicating accounting information	All transactions need to have a specific dollar value to be recorded
Accounting period	Accounting information needs to be communicated effectively over short periods of time	Most businesses prepare half-yearly and annual financial statements
Going concern	The company for which we are accounting will continue its operations indefinitely	If an entity is not selling its assets, then assets (like the drone) are recorded at the value to the business (cost less depreciation)

Assumptions made when communicating financial information

Term	Definition	Ramification
Relevance	Accounting information should have the capacity to affect decisions	Information should have predictive or feedback value and should be timely
Materiality	The threshold over which an item could begin to affect decisions	When an amount is small enough, normal accounting procedures are not always followed. Note CSL reports to the nearest $0.1 million
Faithful representation	Faithfully represent the phenomena that it purports to represent	Financial reports represent economic phenomena in words and numbers
Prudence (Conservatism)	When uncertainty exists, accounting information should present the least optimistic alternative	An entity should choose accounting techniques that guard against overstating revenues or assets
Comparability	Accounting information should be comparable across different businesses. This is aided by consistency where use of the same accounting method aids comparability	Entities must disclose the accounting methods that they use so that comparisons across companies can be made
Verifiability	Verifiability helps assure users that information is faithfully represented	Different knowledgeable and independent observers could reach consensus
Timeliness	Information available to decision-makers before they make decisions	The older the information generally the less useful it is
Understandability	Accounting information should be comprehensible by those willing to spend a reasonable amount of time studying it	Users must spend a reasonable amount of time studying accounting information for it to be understood

Qualitative characteristics that make financial reports useful

Statement	Purpose	Structure	Links to other statements
Income statement	Shows a company's revenues and expenses over a specific period of time	Revenue – Expenses = Net Profit/ Loss	Net profit goes to the statement of changes in equity to calculate retained earnings
Balance sheet	Shows a company's assets, liabilities and equity at a specific point in time	Assets = Liabilities + Equity	The balance in retained earnings comes from the statement of changes in equity The balance in cash should agree with the ending cash balance on the cash flow statement
Statement of changes in equity (retained earnings section)	Shows the changes in a company's retained earnings over a specific period of time	Beginning Retained Earnings + Profits (or – Losses) – Dividends = Ending Retained Earnings	Ending retained earnings goes to the balance sheet
Cash flow statement	Shows a company's inflows and outflows of cash over a specific period of time	Operating Cash Flows +/– Investing Cash Flows +/– Financing Cash Flows = Net Change in Cash	The ending cash balance on the cash flow statement should agree with the balance in cash on the balance sheet

Financial statements used to communicate economic information

EXERCISES

1 Calculate profit or loss

LO2

Sarah's Science Service generated $14 000 in revenue in the month of January. Salaries were $3500 for the month and supplies used were $2000. Additionally, Sarah incurred $500 for advertising during the month.

REQUIRED

Calculate Sarah's profit or loss for the month of January.

2 Calculate equity

LO3

A company reports assets of $100 000 and liabilities of $60 000.

REQUIRED

Calculate the company's equity.

3 Identify accounting principles

LO2, 3

Each of the following statements is an application of the revenue recognition principle, the matching principle or the cost principle.

i A company records Equipment for the purchase price of $10 000 although the suggested retail price was $13 000.

ii A company receives $2000 for a service to be performed but records only $1000 as Service Revenue because it earned only half in the current period.

iii A company pays $6000 for insurance but uses only $4000 during the period. Therefore, it records only $4000 as Insurance Expense.

REQUIRED

Identify which principle relates to each statement.

4 Calculate retained earnings

LO4

At the beginning of the year, a company has retained earnings of $175 000. During the year, the company earns $110 000 of profits and distributes $30 000 in dividends.

REQUIRED

Calculate the company's retained earnings at year end.

5 Calculate cash flows

LO5

A company starts the year with $15 000 in cash. During the year, the company generates $80 000 from *operations*, uses $56 000 in *investing* activities and uses $38 000 in *financing* activities.

REQUIRED

Calculate the company's cash at year end using a basic cash flow format.

6 Identify accounting assumptions and qualitative characteristics

LO1, 6

Consider the following independent scenarios:

i Peter's Pizza has been in business for 25 years. All of its operations are profitable, and the accountants believe that the company will continue to operate into the foreseeable future.

ii A bank used the information presented in Fiona's financial statements to determine if it should extend a $300 000 loan to Fiona. The information in the financial statements made a difference in the bank's lending decision.

iii The manager of Martha's Antiques does not like to change accounting procedures because it hinders her ability to make year-to-year comparisons.

iv Sarah, owner of Abbotsford Animal Accommodation, informs her accountant that she does not want to review any accounting issue that is smaller than 1 per cent of profits.

v Matthew paid $10 000 for inventory which could now sell for only $6000, he recognises this decrease while not recognising the increase in land from $200 000 to $300 000.

vi Sue has two businesses, she keeps separate records for both businesses and does not combine them with her personal financial matters.

REQUIRED

Identify the accounting assumption or qualitative characteristic that relates to each scenario.

7 Accounting terms

LO2, 3

Consider the following information:

Item	Appears on	Classified as
Salaries expense		
Equipment		
Cash		
Accounts payable		
Accounts receivable		
Buildings		
Contributed capital		
Retained earnings		
Interest revenue		
Advertising expense		
Sales		
Unearned revenue		

REQUIRED

Classify each of the items above according to:

a whether it appears on the income statement (Y/S) or balance sheet (B/S)

b whether it is classified as a revenue, expense, asset, liability or equity.

8 Classify cash flows

LO5

A company entered into the following cash transactions:

i Cash paid to suppliers
ii Cash received from issuing new shares
iii Cash paid to purchase a new office building
iv Cash paid in dividends to owners
v Cash received from customers
vi Repaying a bank loan
vii Cash received from the sale of land
viii Company income tax paid.

REQUIRED

Indicate the section of the cash flow statement in which each item would appear: operating activities (O), investing activities (I) or financing activities (F).

9 Accounting terms

LO2, 3, 4, 5

Consider the following information:

i Revenues during the period
ii Supplies on hand at the end of the year
iii Cash received from borrowings during the year
iv Total liabilities at the end of the period
v Dividends paid during the year
vi Cash paid for a building
vii Cost of buildings owned at year end
viii Profits for the period (on two statements)
ix Closing balance of retained earnings (on two statements).

REQUIRED

Indicate whether you would find each of the above items on the income statement (Y/S), the balance sheet (B/S), the statement of retained earnings (SRE) or the cash flow statement (CFS).

10 Financial statements

LO2, 3, 4, 5

Listed below are questions posed by various users of a company's financial statements:

User	Questions	Financial statement
Shareholder	How did this year's sales figures compare with last year's sales figures?	
Banker	How much in borrowings does the company currently owe?	
Supplier	How much does the company owe its suppliers in total?	
Shareholder	Did the company pay any dividends during the year?	
Advertising Agent	How much advertising did the company incur in order to generate sales?	
Banker	What was the company's total interest cost last year?	

REQUIRED

Fill in the blanks with the financial statement(s) (i.e. income statement, balance sheet, statement of retained earnings and/or cash flow statement) the user would most likely use to find this information.

11 Profit or loss and retained earnings

LO2, 4

Hazelwood reports the following as of 30 June:

Revenues	$99 000
Beginning retained earnings	22 000
Expenses	88 000
Dividends	1 000

REQUIRED

Calculate profit or loss and ending retained earnings for the financial year ending 30 June.

12 Balance sheet equation

LO3

Consider the following independent situations:

i Kelly contributes $80 000 to the business and the business has total assets of $200 000. How much are liabilities?
ii Tran starts the year with $50 000 in assets and $40 000 in liabilities. Profit for the year is $12 500 and no dividends are paid. How much is Tran's equity at the end of the year?
iii Evan doubles the amount of her assets from the beginning to the end of the year. At the end of the year, liabilities are $50 000 and equity is $30 000. What is the amount of Evan's assets at the beginning of the year?
iv During the year the liabilities of Hudson Company triple. At the beginning of the year, assets were $40 000 and equity was $20 000. What is the amount of liabilities at the end of the year?

REQUIRED

Use the accounting equation to answer each of the independent questions above.

13 Statement of retained earnings

LO4

Chan Company's retained earnings on 1 July is $245 800. The following information is available for the first two months of the financial year:

	July	August
Revenues	$80 000	$102 000
Expenses	85 000	80 000
Dividends	0	7 000

REQUIRED

Prepare the retained earnings section of the Statement of Changes in Equity for the *month* ending 30 August.

14 Links between financial statements

LO2, 3, 4

Below are incomplete financial statements for Jasmine:

Balance sheet	
Assets	
Cash	$ 8 000
Inventory	22 000
Total assets	$70 000
Liabilities	
Accounts payable	$ 7 000
Equity	
Contributed capital	(a)
Retained earnings	(b)
Total liabilities & equity	$70 000
Income statement	
Service revenue	$90 000
Salaries expense	(c)
Electricity expense	20 000
Profit	$ (d)
Statement of retained earnings	
Retained earnings, beginning balance	$20 000
Profit	(e)
Dividends	10 000
Retained earnings, ending balance	$60 000

REQUIRED

Calculate the missing amounts (not necessarily in alphabetic order).

15 Qualitative characteristics

LO6

The following qualitative characteristics of accounting were discussed in the chapter:

- **i** consistency
- **ii** relevance
- **iii** understandability
- **iv** comparability
- **v** prudence (conservatism)
- **vi** materiality
- **vii** faithful representation.

REQUIRED

Match the descriptions with the appropriate characteristic.

- **a** The ability of accounting information to be comprehensible to those who have a reasonable knowledge of business and are willing to study the information with reasonable diligence.
- **b** The capacity to affect business decisions.
- **c** The dependability of accounting information.
- **d** The ability to compare and contrast the financial activities of the same company over a period of time.
- **e** The threshold over which an item begins to affect decision-making.
- **f** The way in which accountants deal with uncertainty.
- **g** The ability to determine similarities and differences.

16 Assumptions and principles

LO1, 2, 3

The Harbour Group had the following situations during the year:

- **i** Inventory with a cost of $186 400 is reported at its market value of $235 600.
- **ii** Harbour added four additional weeks to its fiscal year so that it could make its income look stronger. Past financial years were 52 or 53 weeks (in a leap year), this financial 'year' is 56 weeks and it is not even a leap year.
- **iii** Harbour's CEO purchased a yacht for personal use and charged it to the company.
- **iv** Revenues of $25 000 earned in the prior year were recorded in the current year.
- **v** Harbour will be paid in the next financial year for work carried out in this financial year; the decision was made to include the revenue in the next financial year.
- **vi** In an attempt to show exactly how much profits are earned Harbour reports $9 876 543.21 of profits for the financial year.

REQUIRED

In each situation, identify the assumption or principle that has been violated and discuss how Harbour should have handled the situation.

PROBLEMS

17 Prepare financial statements

LO2, 3, 4

The following items are available from the financial records of Innovators Incorporated at the financial year ending 30 June, 2018:

Accounts payable	$27 000
Accounts receivable	21 000
Advertising expense	6 000
Buildings	76 000
Contributed capital	30 000
Cash	6 320
Notes payable	70 000
Salaries expense	9 500
Service revenue	16 820
Equipment	25 000

REQUIRED

Prepare Innovators Incorporated's income statement and statement of retained earnings for the year and its balance sheet at the end of the year.

18 Identify and correct income statement errors

LO2

Sivabalan Group was started on 1 July. At the end of the financial year the company used an accounting intern to prepare the following financial statement:

Sivabalan Group income sheet at 30 June	
Income from services	$170 000
Accounts receivable	40 000
Total revenue	$210 000
Less: Expenses	
Salaries	$ 57 000
Advertising	(14 000)
Dividends	10 000
Electricity	22 000
Total expenses	$ 75 000
Total income	$135 000

REQUIRED

List all of the deficiencies that you can identify in this income statement and prepare an income statement with correct information and proper format.

19 Identify and correct balance sheet errors

LO3

Hildebrand House Haunting (HHH) commenced business on 1 July. It was a good year as Hildebrand believes she has over $100 000 of assets. At the end of the financial year the following financial statement was quickly prepared by a student intern:

HHH Balance Statement for the year ending 30 June	
Resources:	
Cash	$ 30
Things we sell	40
Land	53
Retained earnings	17
Grand total	$146
Debts:	
Money we owe	$ 43
Contributed capital	63
Grand total	$106

REQUIRED

List all of the deficiencies that you can identify in this financial statement and prepare a proper balance sheet.

20 Errors in accounting

LO1, 2, 3

The Nguyen Company was incorporated on 1 July. At 30 June the following year Ms Ly Nguyen, the CEO and sole owner, prepared the company's balance sheet as follows:

Nguyen Company Balance Sheet 30 June	
Assets	
Cash	$25 000
Accounts receivable	40 000
Inventory	35 000
Building	20 000
Liabilities and Equity	
Accounts payable	$40 000
Building loan	15 000
Retained earnings	37 000

Ly is not an accountant by trade and she believes there may be some mistakes. She has provided you with the following additional information:

i The building is Ly's personal beach house. However, she plans on using it for company retreats and for hosting some large clients. She decided to list the asset and the corresponding liability for this reason.

ii The inventory was originally purchased at $12 000, but due to a recent increase in demand she believes she could sell it for at least $35 000. She thought that $35 000 would best portray the economic reality of her inventory.

iii Ly included $5000 in accounts receivable and retained earnings for a service that she will provide next year. Since she is honest and will provide the service, she decided to record the amount in this year's balance sheet.

REQUIRED

Comment on what accounting assumptions or principles have been violated; briefly describe how each item should be accounted for and prepare a correct balance sheet.

21 Preparing financial statements

LO2, 3, 4

On 1 July you begin a whale watching business for the winter whale migration season by contributing $60 000 of capital and borrowing $80 000 from your parents. With the money you pay $48 000 in July to rent a boat with all the equipment needed. You also purchase advertising on the hotel TV channel for $25 000 and during the month fuel for $155 000. You also pay your parents $800 for monthly interest.

You decide to charge $90 per passenger. At the end of the month of July, you have taken 2400 guests aboard the boat. Included in those 2400 guests were tour groups from China who always pay seven days after whale watching. The tour group at the end of July owes you $1080.

REQUIRED

Prepare an income statement and a statement of retained earnings for the month ending 31 July and a balance sheet at 31 July. How might the financial statements influence your plans next year?

CASES

22 Read, locate and compare financial statements

LO1, 2, 5

Access the latest financial statements for CSL (Google 'CSL Annual Report').

REQUIRED

a For CSL Limited's (ASX: CSL) last financial year, identify the amounts reported for revenues, total comprehensive income, total assets and cash flows from operating activities. Also, identify the date on which the financial statements are prepared.

b Locate Cochlear Limited's (ASX: COH) financial statements for the same year. Identify the same information as in the previous requirement.

c Compare both companies. Identify which company is: (i) the largest, (note how you define *largest*) (ii) the most profitable (be careful how you define *most profitable*) and (iii) the best able to generate cash from its operations.

23 Ethics in accounting

LO1, 2, 6

As the chief accountant at an education college which is listed on the Australian Securities Exchange you discover that profits in each of the previous five years have been understated due to an error in accounting. After much thought, you decide to approach the CEO. Her response is: 'What the public doesn't know won't hurt them. We'll just adjust this year's profits to make up for the mistakes. We are having a bad year and this comes as a great relief, it will certainly get us out of a hole'.

REQUIRED

Identify the ethical dilemma of this situation; outline the ways that you could respond and explain the possible consequences of your responses.

24 Written communication skills

LO2, 3, 4, 5

Your wonderful brother has just won lotto. He is trying to find companies in which to invest his winnings; however, he is having trouble reading the financial statements because he has no idea what they are saying. Knowing you are in an accounting class, your brother is willing to pay you $10 a word to write to him about financial statements (maximum 400 words).

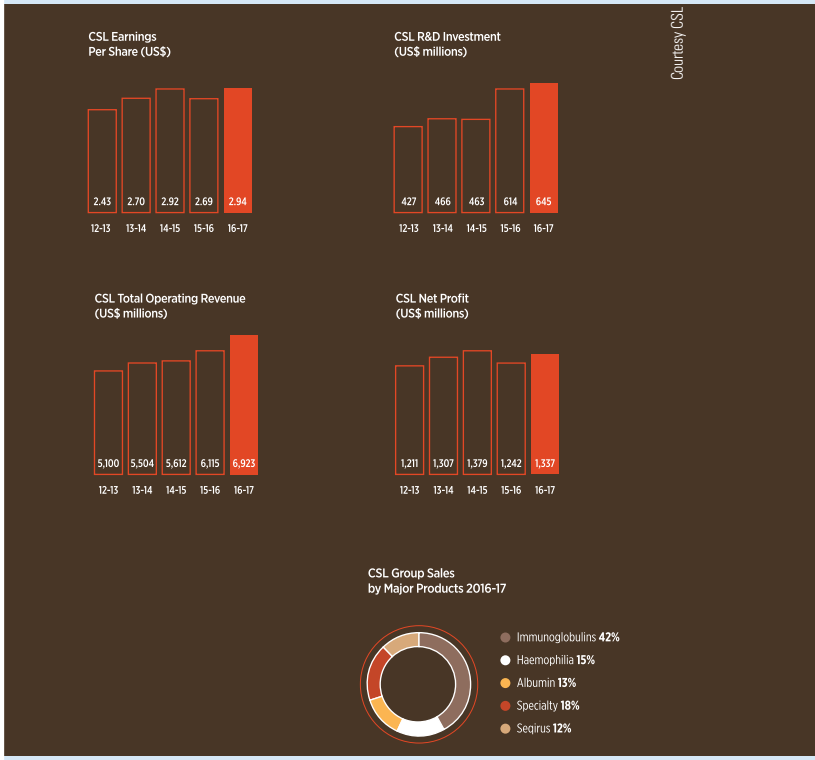
REQUIRED

Prepare a written response to your brother explaining what information is contained in each financial statement and how it is relevant to investors.

2

Financial statements

Chapter 1 introduced the terms, assumptions, principles and statements that accounting uses to capture and communicate a company's economic activities. This chapter takes a more detailed look at the accounting information provided by businesses, particularly public corporations (companies) such as CSL. Specifically, this chapter introduces the (classified) balance sheet, the (multi-step) income statement and the statement of changes in equity. Each of these three financial statements represents a more detailed version of the statements covered in Chapter 1. This chapter also introduces two analysis techniques: horizontal and vertical analyses, which are simple but powerful tools for generating a more in-depth understanding of a company's financial position and performance. By the end of this chapter, you should be comfortable reading through, using and being able to explain the financial statements of most companies.



Courtesy CSL

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Explore the three major forms of business.
2. Define Generally Accepted Accounting Principles (GAAP) and their origins.
3. Describe the main classifications of assets, liabilities and equity in a balance sheet.
4. Discuss the main subtotals of income on an income statement.
5. Analyse the balance sheet and the income statement using horizontal and vertical analyses.
6. Describe the structure of a statement of changes in equity.
7. Look at the types of information usually disclosed along with financial statements.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

LO1 BUSINESS FORMS

One of the first decisions that any new business faces is the form that it will take. Businesses have the following three basic options:

- sole proprietorship
- partnership
- company.

A **sole proprietorship** is a business owned by one person and is the most common type of business in Australia. In a sole proprietorship (sometimes known as a **sole trader**), the owner maintains complete control of the business, bears all the risk of failure and reaps all

sole proprietorship (sole trader)
A business owned by one person.

the rewards of success. For accounting purposes, a sole proprietorship is accounted for separately from the proprietor's (owner's) personal affairs (and possibly separate from other businesses they may own). This is an application of the economic entity assumption. For tax purposes, though, a sole proprietor's business is not separated from the proprietor. The income from the business is reported on the owner's personal tax return, along with other income like wages.

partnership
A business that is formed when two or more proprietors join together to own a business.

A **partnership** is a business that is formed when two or more proprietors join together to own a business. Partnerships can be established by either a written or verbal agreement and can include many partners. Partnerships are formed for various reasons, such as joining proprietors with different skills, combining resources and spreading the financial risk of the business among several people. Like sole proprietorships, a partnership is considered a separate accounting entity, separate from the individual partners (owners). However, like sole proprietorships, a partner's share of partnership income is reported on the partner's individual tax return. Partnerships are covered in detail in Chapter 10.

company (or corporation)
A separate legal entity that is established by registering with ASIC.

Australian Securities and Investments Commission (ASIC) The agency charged with protecting investors and maintaining the integrity of securities markets.

A **company** or **corporation** is a separate legal entity that is established by registering the company with the **Australian Securities and Investments Commission (ASIC)**. Once a company is formed, it sells shares to individuals who want to own part of the company. This is one of the main reasons that companies are formed – the ability to raise equity (capital) through the sale of ownership interests (issue of shares). It is also why company owners are called shareholders (or stockholders). Like a sole proprietorship and a partnership, a company is accounted for separately from its owners; however, it is also taxed separately. Income generated by a company is taxed on a company tax return, not on the shareholders' individual tax returns. One of the advantages of a company in Australia is that dividends are not 'double taxed' as in many other countries. Companies are covered in more detail in Chapter 11.

CSL ANALYSIS

Look at the full company name on the front cover of CSL's annual report in Appendix B. Can you tell from the name what form of business CSL is?

Analysis:
The full company name is 'CSL Limited'. The 'limited' stands for the limited liability a company enjoys – the owners (shareholders) are not personally liable for the debts of the company.

There are two main types of companies in Australia, proprietary (private) and public companies. The most common type of company in Australia is the proprietary company (often indicated by the 'Pty' at the end of the company name). A **public company** is one in which ownership is available to the general public. The shares of a public company may be bought and sold on an open market such as the Australian Securities Exchange (ASX). To have a company's shares traded on the ASX, a company needs to be 'listed' on the Exchange, a much more expensive process than just registering a company. Such companies are said to be 'publicly listed'. Examples of publicly listed companies are BHP, Commonwealth Bank, Telstra, Woolworths and, of course, CSL. From this point forward, we will focus on the accounting for publicly listed companies. This will allow us to see accounting issues in companies with which you may be familiar and that usually have their financial reports publicly available on their website.

public company
A separate legal entity in which ownership is available to the general public.

Alamy Stock Photo/Pulsar Imagens

Inventory is one of the biggest assets for a company like CSL. Because of its importance, it is reported separately on the company's balance sheet

Review this content with the e-lecture

APPLY THIS

LO2 GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP)

When accounting for their economic activities, public companies must follow **Generally Accepted Accounting Principles (GAAP)**. These GAAP are the accounting standards plus the rules, principles and procedures that comprise authoritative practice for financial accounting. The formal part of these principles, the accounting standards, have been developed over time by the **Australian Accounting Standards Board (AASB)** and enforced by ASIC. High-quality accounting standards should

Generally Accepted Accounting Principles (GAAP) The accounting standards, rules, principles and procedures that comprise authoritative practice for financial accounting.

Australian Accounting Standards Board (AASB) The standard-setting body whose mission is 'to develop and maintain high-quality financial reporting standards'.

lead to financial statements that are 'presented fairly' or provide a 'true and fair view'. It is interesting to note the objective is not to produce 'accurate' or 'correct' financial statements, because, although accounting is based on numbers, there are many judgements and some choices that are needed, which means financial statements do not have the mathematical precision many think they possess.

In the Australian Accounting Standard AASB 101, the achievement of 'fair presentation' is laid out in paragraph 17, which states:

> In virtually all circumstances, an entity achieves a fair presentation by compliance with Australian Accounting Standards. A fair presentation also requires an entity:
> **a** to select and apply accounting policies in accordance with AASB 108 *Accounting Policies, Changes in Accounting Estimates and Errors*. AASB 108 sets out a hierarchy of authoritative guidance that management considers in the absence of an Australian Accounting Standard that specifically applies to an item;
> **b** to present information, including accounting policies, in a manner that provides relevant, reliable, comparable and understandable information; and
> **c** to provide additional disclosures when compliance with the specific requirements in Australian Accounting Standards is insufficient to enable users to understand the impact of particular transactions, other events and conditions on the entity's financial position and financial performance.[1]

The accounting standards are part of the *Corporations Act 2001* (as amended).

Australian accounting standards are based on the **International Financial Reporting Standards (IFRS)**, and as such the rules we follow in Australia are the same as much of the rest of the world (except the US). The IFRS are developed by the **International Accounting Standards Board (IASB)** whose mission is to have a single set of high-quality standards requiring transparent and comparable information. Because adoption of IFRS is voluntary, the effectiveness of the IASB at accomplishing its mission has been limited because the US (and some other countries) have retained their own GAAP. However, the IASB and the US Financial Accounting Standards Board have agreed to a commitment to the convergence of US and international standards. At some time in the future, the world may very well use one set of global accounting standards set by a global board.

International Financial Reporting Standards (IFRS) Standards issued by the International Accounting Standards Board.

International Accounting Standards Board (IASB) A board, similar to the AASB, whose mission is to develop a single set of high-quality standards requiring transparent and comparable information.

CSL ANALYSIS

Look at the Independent Auditor's Report in Appendix B. According to the auditor, is CSL's financial report in accordance with the standards and the law?

Analysis:
Yes. The Report on the Audit of the Financial Report states 'In our opinion, the accompanying financial report of the Group is in accordance with the *Corporations Act 2001*', and goes on to add that this includes 'giving a true and fair view', and that it is 'complying with the Australian Accounting Standards and the Corporations Regulations 2001'.[2]

LO3 THE BALANCE SHEET

Chapter 1 introduced the balance sheet. A balance sheet is a financial statement that summarises a company's assets, liabilities and equity at a given point in time. Your balance sheet shown in Chapter 1 reported every account of your Aerial Filming business. However, most public companies are much too large to report every account. For ease of presentation, accounts of similar nature are placed under one heading: e.g. Property, Plant and Equipment includes all CSL land, buildings, laboratories, scientific equipment, etc. The **consolidated balance sheet** groups together all the companies controlled by CSL into one economic (reporting) entity. The process of 'consolidation' would not be necessary if all operations were carried out by a single company, but this is often not feasible because of legal, historical, geographic or other reasons. The consolidation process is covered in later years of accounting study and is not important at this stage to your understanding of the financial statements; it is sufficient to know that consolidation treats the whole business as one accounting entity ignoring the legal boundaries of each individual company in the 'group'.

consolidated balance sheet A type of balance sheet that groups together the parent company and its subsidiaries as one reporting entity.

The following sections discuss the various asset, liability and equity classifications commonly used on a balance sheet. The 30 June 2017 balance sheet of CSL in Exhibit 2.1 will be used as an illustration. As you review the statement, note that all numbers except per share data are in millions of dollars (to one decimal place, meaning that the number after the decimal point is a hundred thousand dollars (e.g. 20.3 is $20 300 000). Note also that two years of data are presented, with the most recent year listed first. This is the normal format for most company's financial statements. CSL reports in United States dollars. This is not relevant to most of our analysis and only

becomes critical when comparisons are made to companies reporting in Australian dollars. At the time of the financial report $1US = $1.3Aust.

	Notes	2017 US$m	2016 US$m
CURRENT ASSETS			
Cash and cash equivalents	14	844.5	556.6
Trade and other receivables	15	1170.4	1107.2
Inventories	4	2575.8	2152.0
Current tax assets		6.2	1.6
Other financial assets		5.2	0.6
Total current assets		4602.1	3818.0
NON-CURRENT ASSETS			
Other receivables	15	16.5	15.6
Other financial assets		3.9	2.9
Property, plant and equipment	8	2942.7	2389.6
Deferred tax assets	3	496.5	389.0
Intangible assets	7	1055.4	942.6
Retirement benefit assets	18	5.6	5.0
Total non-current assets		4520.6	3744.7
TOTAL ASSETS		9122.7	7562.7
CURRENT LIABILITIES			
Trade and other payables	15	1155.8	996.1
Interest-bearing liabilities	11	122.5	62.3
Current tax liabilities		202.5	207.3
Provisions	16	134.1	99.6
Deferred government grants	9	3.2	3.1
Derivative financial instruments		–	6.0
TOTAL CURRENT LIABILITIES		1618.1	1374.4
NON-CURRENT LIABILITIES			
Other non-current liabilities	15	25.8	18.8
Interest-bearing liabilities	11	3852.7	3081.0
Deferred tax liabilities	3	138.2	119.2
Provisions	16	32.9	40.5
Deferred government grants	9	35.9	35.0
Retirement benefit liabilities	18	255.3	326.6
Total non-current liabilities		4340.8	3621.1
TOTAL LIABILITIES		5958.9	4995.5
NET ASSETS		3163.8	2567.2
EQUITY			
Contributed equity	12	(4534.3)	(4213.0)
Reserves	12	294.2	187.9
Retained earnings	19	7403.9	6592.3
TOTAL EQUITY		3163.8	2567.2

EXHIBIT 2.1 CSL Limited's Consolidated Balance Sheet as at 30 June 2017

Source: CSL Limited, *Annual Report 2017*, p. 82.

Assets

An asset is a resource of a business. Assets are generally grouped into two main categories on a balance sheet:

- current assets
- non-current assets (including intangible assets).

Current assets

A **current asset** is any asset that is reasonably expected to be converted to cash or consumed within one year of the balance sheet date. Common examples include cash, investments that will mature or be sold within a year, accounts receivable from customers, inventories and other assets such as prepaid insurance. Current assets are listed in order of their liquidity, which refers to the speed with which a resource can be converted to cash. Cash is listed first, followed by short-term investments, receivables, inventories and then finally other assets.

current asset Any asset that is reasonably expected to be converted to cash or consumed within one year of the balance sheet date.

CSL reports five current assets totalling over $4.6 billion on its 30 June 2017 balance sheet. As you might expect from a biotechnology company, the majority of those assets (almost $2.6 billion) is in inventories, trade and other receivables and cash and cash equivalents making up the majority of the other current assets.

Non-current assets

Non-current assets are the resources that are used in a company's operations for more than one year and are not intended for resale. Examples include property, plant and equipment, intangible assets and deferred tax assets.

non-current asset A resource that is used in a company's operations for more than one year and is not intended for resale.

CSL reports over $4.5 billion of non-current assets on its 30 June 2017 balance sheet, with almost $3 billion of property, plant and equipment, making them the largest asset.

KEY FORMULA 2.1 ASSETS

Current Assets
+ Non-current Assets
=Total Assets

Intangible assets

An **intangible asset** is a type of non-current asset that has no physical substance. Examples include trademarks, patents, franchise rights, copyrights and goodwill. Like other non-current assets, intangible assets are subject to depreciation (although it is actually called amortisation

intangible asset A resource that is used in operation for more than one year, is not intended for resale and has no physical substance.

instead of depreciation) and are reported net of amortisation or impairment. Intangible assets, which Note 7 of CSL's annual report 2017 shows is predominantly goodwill, is the second largest non-current asset that CSL reports in its balance sheet. At this stage a detailed knowledge of goodwill is not important. For now, it can be understood simply as the excess CSL paid when acquiring other businesses for assets that are not separately identifiable: things like brand recognition, distribution network, research teams etc. (not intellectual property, which is recognised separately).

Liabilities

A liability is an obligation of a business, which is generally classified into two main categories on a balance sheet:

- current liabilities
- non-current liabilities.

Current liabilities

current liability An obligation that is reasonably expected to be satisfied within one year.

A **current liability** is an obligation that is reasonably expected to be satisfied within one year. Examples include accounts payable to suppliers, salaries payable to employees and taxes payable to the government. Even long-term debt, if maturing within one year, is classified as a current liability.

CSL reports six current liabilities totalling over $1.6 billion on its 30 June 2017 balance sheet. The largest is over $1.1 billion in Trade and other payables, which is basically the amount owed to suppliers. The company also reports over $200 million in current tax liabilities.

Non-current liabilities

non-current liability An obligation that is not expected to be satisfied within one year.

A **non-current liability** is an obligation that is not expected to be satisfied within one year. Examples include interest-bearing liabilities, which for CSL, make up the majority of its non-current liabilities. In Note 11, as part of its risk management CSL discusses the interest-bearing liabilities. CSL has over $4 billion of non-current liabilities at 30 June 2017.

Equity

Equity is the difference between a company's assets and its liabilities. It is generated from the following two main sources:

- retained earnings (including reserves)
- contributed equity.

contributed equity The amount of equity a company generates by being profitable and retaining those profits in the business (earnings retained by the business).

Retained earnings is the amount of equity a company generates by being profitable and retaining those profits in the business (earnings retained by the business). **Contributed equity** is the amount of equity a company generates through the sale (issue) of shares to investors (equity contributed by the shareholders). Such equity is often referred to as share or issued capital. Like most publicly traded companies, CSL reports its equity accounts in one general section called (Shareholders') Equity. There is just over $4.5 billion in Contributed Equity and almost $7.5 billion in Retained Earnings, indicating a lot of profits in previous years that have not been distributed as dividends, but retained and used in the business to buy assets. Reserves are like Retained Earnings but a little more complex and will be discussed in depth in Chapter 11.

Check out the animated summary on Financial Statements: Part 1 APPLY THIS

LO4 THE INCOME STATEMENT

Chapter 1 also introduced the income statement. The income statement is a financial statement that summarises a company's revenues and expenses over a period of time. Companies generally use one of two forms for their income statements – a single-step statement or a multi-step statement.

A *single-step income statement*, as seen in Exhibit 2.2, calculates total revenues and total expenses and then determines net income in one step by subtracting all expenses from the revenues. The income statement prepared in Chapter 1 was a single-step income statement. The major advantage of a single-step statement is its simplicity. For a service organisation such as Chartered Accountants Australia and New Zealand, a single-step income statement presents its income clearly.

multi-step income statement Calculates income by grouping certain revenues and expenses together and calculating several subtotals of income.

A **multi-step income statement** calculates income by grouping certain revenues and expenses together and calculating several subtotals of income. These subtotals provide information on the profitability of various aspects of the company's operations. While most companies prepare multi-step statements, there is some slight variation in how they are prepared. However, most include some or all of the following subtotals of income:

- total revenue
- cost of sales
- gross profit
- expenses
- profits before income tax expense
- profits after income tax expense
- **other comprehensive income**
- total comprehensive income.

other comprehensive income Includes gains and losses not included in traditional revenue and expense items.

The following sections discuss these subtotals that are commonly used by companies. For illustration

Consolidated statement of profit or loss and other comprehensive income For the year ended 30 June 2017			
	Notes	**2017 $'000**	**2016 $'000**
Revenue		127 882	121 624
Other income		2 534	2 900
Total revenue and other income	3(a)	**130 416**	**124 524**
Service expenses		(31 282)	(29 683)
Occupancy expenses		(8 828)	(8 914)
Administration expenses		(71 000)	(69 765)
Information technology expenses		(18 159)	(16 326)
Other expenses		(7 917)	(8 014)
Total expenses		**(137 186)**	**(132 702)**
(Deficit) before tax		**(6 770)**	**(8 178)**
Income tax expense	4	–	–
(Deficit) after tax		**(6 770)**	**(8 178)**
Other comprehensive income			
Items that may be reclassified subsequently to surplus or deficit:			
Exchange differences on translation of foreign operations		(15)	120
Fair value increment of freehold property	7	4 994	3 370
Total other comprehensive income		**4 979**	**3 490**
Total comprehensive (deficit) for the year, net of tax		**(1 791)**	**(4 688)**

EXHIBIT 2.2 Consolidated statement of profit or loss and other comprehensive income

This consolidated statement of profit or loss and other comprehensive income should be read with the accompanying notes.

Source: JT Chartered Accountants Australia and New Zealand, *Annual Report 2017*, p. 80.

CSL Limited Consolidated statement of comprehensive income			
	Notes	**2017 US$M**	**2016 US$M**
Continuing operations			
Sales revenue		6 615.8	5 909.5
Pandemic Facility Reservation fees		94.0	68.7
Royalties and licence revenue		203.3	122.7
Other income		9.7	14.4
Total operating revenue		6 922.8	6 115.3
Cost of sales		(3 326.8)	(3 052.8)
Gross profit		3 596.0	3 062.5
Research and development expenses	6	(645.3)	(613.8)
Selling and marketing expenses		(697.0)	(620.9)
General and administration expenses		(484.8)	(390.3)
Operating profit		1 768.9	1 437.5
Finance costs	2	(90.0)	(71.6)
Finance income		10.9	13.9
Gain on acquisition	1b	–	176.1
Profit before income tax expense		1 689.8	1 555.9
Income tax expense	3	(352.4)	(313.5)

Net profit for the period		1 337.4	1 242.4
Total of other comprehensive income/(expenses)		173.0	(198.8)
Total comprehensive income for the period		1 510.4	1 043.6
Earnings per share (based on net profit for the period)			
Basic earnings per share	10	2.937	2.689

EXHIBIT 2.3 CSL's consolidated income statement

Source: Adapted from CSL Limited, *Annual Report 2017*, p. 82.

purposes, Exhibit 2.3 contains CSL's income statement for the financial year ended 29 June 2014. Note that the company uses the title *Consolidated statement of comprehensive income* because it includes the revenues and expenses of the parent entity as well as all of the subsidiaries. Note also that, as with the balance sheet, the numbers are in millions of (US) dollars (shown to one decimal point) except earnings per share.

Gross profit

sales revenue The resources that a company generates during a period from selling its inventory.

In a multi-step statement, revenue is listed first. **Sales revenue**, which is *revenue from sale of goods*, is the resources that a company generates during a period from selling its inventory. CSL reports three other revenues, which it lists as 'Pandemic Facility Reservation fees', 'royalties and licence revenue', and 'other income', (note the use of other common terms used for revenue), contributing to a total operating revenue of $6922.8. (Finance income is reported in the middle of the statement as this is seen to offset Finance cost reported just above.)

cost of sales The cost of the inventory sold during a period.

gross profit (gross margin) The profit that a company generates when considering only the sale price and the cost of the product sold.

Listed next is **cost of sales**, sometimes called cost of goods sold, which represents the cost (to CSL) of the inventory that was sold during a period. Subtracting cost of sales from total operating revenue yields the first subtotal of income, gross profit. **Gross profit** (sometimes called **gross margin**) represents the profit that a company generates when considering only the sales price and the cost of the product sold. It therefore represents the gross dollar 'mark-up' that a company is able to achieve when selling its inventory.

With *cost of sales* of over $3.3 billion, CSL generated a *gross profit* of almost $3.6 billion for the year. This gives an average mark-up on inventory of a little over 100 per cent. Note this is not 'bottom line profit' (total comprehensive income); out of gross profit CSL pays for research and development, rent, wages, advertising, electricity, etc.

Operating (other) expenses

After gross profit is reported, operating expenses are listed. **Operating expenses** are the expenses that a company incurs during normal operations. Such expenses are recurring, meaning that they are incurred year after year as the company runs its business.

operating expenses Recurring expenses that a company incurs during normal operations.

CSL reports these expenses in three categories: Research and development, Selling and marketing, and General and administration. There is no requirement to report particular categories or details, but you may note Research and development has 'Note 6' which provides information on how the expense is calculated but not what it was spent on or what kind of expenses made up the total, while the other two expenses simply have the total. A business might believe providing too much information to competitors would harm future profits.

Courtesy CSL

Part of CSL research and development expenses are the wages paid to scientists who develop the new medicines

CSL ANALYSIS

Look at CSL's income statement in Appendix B. What form of income statement does the company use?

Analysis:
CSL uses a multi-step income statement. It shows several subtotals of income, including gross profit, operating profit, profit before income tax expense, net profits for the period and total comprehensive income for the period.

PROFITS BEFORE INCOME TAX EXPENSE

Gross profit less *Operating expenses* yields the second subtotal, *Operating profits*. *Net finance costs* (Finance costs minus Finance income) and *Gain on acquisition* are then deducted to give **profits before income tax expense**, sometimes also called 'earnings before income taxes' and other similar titles. This represents the profit that a company generates when considering revenues and expenses except for income tax.

profits before income tax expense The profit that a company generates when considering both the cost of the inventory and the normal expenses incurred to operate the business.

After reporting its profit before tax, CSL reports **Income tax expense** of over $350 million to yield a Net profit for the period (*profit after tax*) of $1337.4 million.

income tax expense The amount of income tax expense for a given period.

OTHER COMPREHENSIVE INCOME

Note in the top section on the Income statement the term 'profit' is used (gross, operating, before income tax, net for the period). Comprehensive income items include movements in equity that are not part of the realised gains or losses in profits. These can include movement in translation of foreign operations (due to changes in exchange rates between the Australian dollar currencies of other countries in which CSL operates) and gains and losses in 'cash flow hedges'. AASB 101 *Presentation of Financial Statements* requires the disclosure of comprehensive income items either after the profit and loss section, as CSL does, or in a separate statement. In summary, CSL's income statement provides a picture of how the company generated its profits for the year. This translates to earnings per share of almost $3US, unsurprising given the share price is around $100US.

APPLY THIS

Check out the animated summary on Financial Statements: Part 2

MAKING IT REAL

HANDS UP, WHO LIKES PROFITS?

You may be forgiven for thinking profits (or total comprehensive income, to be technically correct) is the only information reported in a public company's annual report, as from a quick scan it seems 'profits' are often the only or at least the first thing reported by the media, and not just in Australia, as seen by the following selection of headlines from the UK:[3]

- Samsung makes record profit of $109m a day as chip demand soars
- Samsung predicts record profits for second straight quarter
- Samsung record profits mask crisis without and within

- Samsung collects record profits
- Samsung predicts record profits for third quarter as memory business booms.

Alamy Stock Photo/tony french

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LO5 HORIZONTAL AND VERTICAL ANALYSES

The previous sections demonstrate that financial statements communicate economic information about a company to interested parties; for example, investors and creditors learnt from CSL's income statement that the company earned just under $2 billion (Australian) of total comprehensive income for the 2017 financial year. This is useful information because it demonstrates that the company was profitable during the year. However, the information can be even more useful if it is compared to something else. For example, is $1.5104 billion (US) better or worse than last year? Is it high enough given sales for the period? How does it compare to competitors? Such comparisons provide the necessary context for a richer understanding of a company's financial activities. Such context can be easily generated through two techniques called horizontal and vertical analyses.

HORIZONTAL ANALYSIS

Horizontal analysis is a method of analysing a company's account balances over time. It is normally conducted on both the balance sheet and the income statement. The analysis calculates both the absolute and percentage change in each account balance on a financial statement. As a result, it is very useful in identifying promising or troubling trends in a company. The analysis is called 'horizontal' because

horizontal analysis A method of analysing a company's account balances over time by calculating absolute and percentage changes in each account.

the calculation compares an account's balance across the columns of yearly data – that is, horizontally across the financial statement.

Horizontal analysis is calculated as follows. First, the dollar change in an account is determined. This is defined as the current year balance less the prior year balance. The dollar change is then divided by the prior year balance to yield a percentage change. These two calculations are shown below:

KEY FORMULA 2.2 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

To illustrate, consider the inventories balance from CSL's balance sheet in Exhibit 2.1; the company's inventory increased $424 million over the year, from $2152 in 2016. Dividing that increase by the 2016 balance yields a percentage change of almost 20 per cent. These calculations are easily done on a spreadsheet where the financial information can be directly downloaded. Such an analysis of the income statement in Exhibit 2.3 would show a 10.9 per cent increase (3596 – 3062.5)/3062.5 in gross profits and a 23.1 per cent increase (1768.9 – 1437.5) 1437.5 in operating profits. For a full horizontal analysis, both dollar and percentage changes are calculated for each account on both the balance sheet and the income statement.

Further analysis of the balance sheet shows significant growth. Total assets in the most recent year were 21 per cent higher than the prior year. Since *total liabilities* increased 19 per cent, the company's asset growth was not only generated by borrowing money. Rather, the company grew by being profitable and not paying out all profits in dividends (12 per cent increase in retained earnings). The negative contributed equity is due to share buybacks at prices higher than they were originally issued (see CSL's Note 12 to the financial statements). Share buybacks are discussed in Chapter 11 'Shareholders' equity'. An examination of the income statement may appear to be complicated by the presentation in $US. In vertical and horizontal analysis the percentages and percentage changes are exactly the same as they would have been had the financial statements been in $A, because we are comparing within and between figures in one currency. Only when comparing actual dollar amounts or dollar changes between CSL and financial statements in $A, would a currency conversion be required. A minor complication may be the change in the price of the products sold by CSL. While the Consumer Price Index in Australia rose around 2 per cent in the 2017 financial year, if CSL's medicines rose by a similar amount (which is unlikely given the global nature of CSL's sales) then selling the same quantity would account for 2 per cent rise in sales.

In summary, horizontal analysis of the balance sheet and the income statement shows that CSL had another growth year. Horizontal analysis (as seen in Exhibit 2.4) has provided the context for a more thorough understanding of the financial statements. The five-year summary information for CSL is an extension of the horizontal analysis undertaken above, showing total operating revenue rose from A$5.1 to A$7.0 billion between 2013 and 2017, or 37.3 per cent, while profits after tax rose from A$1.21 to A$1.43 billion, a more modest 17.8 per cent.[4]

VERTICAL ANALYSIS

Vertical analysis is a method of comparing a company's account balances within one year. It also is normally conducted on both the balance sheet and the income statement. The analysis is calculated by dividing each account balance by a base account, yielding a percentage. The base account is total assets for balance sheet accounts and sales or total revenues for income statement accounts. These two calculations are shown below.

vertical analysis
A method of comparing a company's account balances within one year by dividing each account balance by a base amount to yield a percentage.

KEY FORMULA 2.3 VERTICAL ANALYSIS

	For the balance sheet	For the income statement
Percentage	$\frac{\text{Account Balance}}{\text{Total Assets}}$	$\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

The product of a vertical analysis is sometimes called a **common-size financial statement**, which is a statement in which all accounts have been standardised by the overall size of the company. Common-size statements are very useful because they allow financial statement users to determine the importance of each account to the overall company and to compare that importance to other companies, even those of vastly different sizes (and even companies reporting in different currencies).

common-size financial statement
A statement in which all accounts have been standardised by the overall size of the company.

	A	B	C	D	E
1	**CSL Limited Consolidated balance sheet**				
2		**2017 US$m**	**2016 US$m**	**$ Change**	**% Change**
3	**CURRENT ASSETS**				
4	Cash and cash equivalents	844.5	556.6	287.9	0.52
5	Trade and other receivables	1 170.4	1 107.2	63.2	0.06
6	Inventories	2 575.8	2 152.0	423.8	0.20
7	Current tax assets	6.2	1.6	4.6	2.88
8	Other financial assets	5.2	0.6	4.6	7.67
9	Total current assets	4 602.1	3 818.0	784.1	0.21
10	**NON-CURRENT ASSETS**				
11	Other receivables	16.5	15.6	0.9	0.06
12	Other financial assets	3.9	2.9	1.0	0.34
13	Property, plant and equipment	2 942.7	2 389.6	553.1	0.23
14	Deferred tax assets	496.5	389.0	107.5	0.28
15	Intangible assets	1 055.4	942.6	112.8	0.12
16	Retirement benefit assets	5.6	5.0	0.6	0.12
17	Total non-current assets	4 520.6	3 744.7	775.9	0.21
18	TOTAL ASSETS	9 122.7	7 562.7	1 560.0	0.21
19	**CURRENT LIABILITIES**				
20	Trade and other payables	1 155.8	996.1	159.7	0.16
21	Interest-bearing liabilities	122.5	62.3	60.2	0.97
22	Current tax liabilities	202.5	207.3	(4.8)	–0.02
23	Provisions	134.1	99.6	34.5	0.35
24	Deferred government grants	3.2	3.1	0.1	0.03
25	Derivative financial instruments	–	6.0	(6.0)	–1.00
26	Total current liabilities	1 618.1	1 374.4	243.7	0.18
27	**NON-CURRENT LIABILITIES**				
28	Other non-current liabilities	25.8	18.8	7.0	0.37
29	Interest-bearing liabilities	3 852.7	3 081.0	771.7	0.25
30	Deferred tax liabilities	138.2	119.2	19.0	0.16
31	Provisions	32.9	40.5	(7.6)	–0.19
32	Deferred government grants	35.9	35.0	0.9	0.03
33	Retirement benefit liabilities	255.3	326.6	(71.3)	–0.22
34	Total non-current liabilities	4 340.8	3 621.1	719.7	0.20
35	TOTAL LIABILITIES	5 958.9	4 995.5	963.4	0.19
36	NET ASSETS	3 163.8	2 567.2	596.6	0.23
37	**EQUITY**				
38	Contributed equity	(4 534.3)	(4 213.0)	(321.3)	0.08
39	Reserves	294.2	187.9	106.3	0.57
40	Retained earnings	7 403.9	6 592.3	811.6	0.12
41	TOTAL EQUITY	3 163.8	2 567.2	596.6	0.23

EXHIBIT 2.4 Horizontal analysis of CSL's consolidated balance sheet

Source: Adapted from CSL Ltd, *Annual Report 2017*, p. 82.

In vertical analysis we divide each inventory balance by total assets for that year. These calculations are shown in the following table. Also shown are similar calculations that would be made for a vertical analysis *of total comprehensive income* from the company's income statement in Exhibit 2.3. The only difference is that total comprehensive income is divided by *sales*, not *total assets*.

	2017	2016
Inventory balance	$2 575.8	$2 152.0
Total assets	$9 122.7	$7 562.7
= Percentage of total assets	= 28.2%	= 28.5%
Total comprehensive income	$1 510.4	$1 043.6
Total operating revenue*	$6 922.8	$6 115.3
= Percentage of net sales	= 21.8%	= 4.217.1%

*In Exhibit 2.5 Sales revenue is used rather than Total operating revenue. There may be reasons for using one rather than the other in analysing a particular company; here it is more about ease of understanding.

For a full vertical analysis, percentages are calculated for every account on each financial statement. Exhibit 2.5 contains a vertical analysis of CSL's income statement.

Of course, sales revenue is 100 per cent (1.00) of itself. Cost of sales is 50.3 per cent of sales revenue in 2017 (51.7 per cent in 2016), which indicates, on average, CSL manufactures (or buys) medicines for about 51c and sells them for $1.00. At the bottom of the income statement in Exhibit 2.5 we can see CSL makes well over 20c from every $1 of sales in 2017 and well under 20c in 2016. The vertical analysis shows excellent improvement in financial performance in 2017.

A more advanced examination of the balance sheet would show the single largest asset for CSL is property, plant and equipment (PPE). PPE increased by 23 per cent during the year (we know this from the horizontal analysis). In 2016 it was 31.6 per cent of total assets (2389.6/7562.7) and 32.3 per cent of total assets (2942.7/9122.7) in 2017. This is due to total assets increasing by 21 per cent (again

	A	B	C	D	E	F
1	**CSL Limited Consolidated statement of comprehensive income**					
2		**Notes**	**2017 US$M**	**As % of Total revenue**	**2016 US$M**	**As % of Total revenue**
3	**Continuing operations**					
4	Sales revenue		6 615.8	1.000	5 909.5	1.000
5	Pandemic Facility Reservation fees		94.0	0.014	68.7	0.012
6	Royalties and licence revenue		203.3	0.031	122.7	0.021
7	Other income		9.7	0.001	14.4	0.002
8	**Total operating revenue**		6 922.8	1.046	6 115.3	1.035
9	Cost of sales		(3 326.8)	(0.503)	(3 052.8)	(0.517)
10	**Gross profit**		3 596.0	0.544	3 062.5	0.518
11	Research and development expenses	6	(645.3)	(0.098)	(613.8)	(0.104)
12	Selling and marking expenses		(697.0)	(0.105)	(620.9)	(0.105)
13	General and administration expenses		(484.8)	(0.073)	(390.3)	(0.066)
14	**Operating profit**		1 768.9	0.267	1 437.5	0.243
15	Finance costs	2	(90.0)	(0.014)	(71.6)	(0.012)
16	Finance income		10.9	0.002	13.9	0.002
17	Gain on acquisition	1b	–	–	176.1	0.030
18	**Profit before income tax expense**		1 689.8	0.255	1 555.9	0.263
19	Income tax expense	3	(352.4)	(0.053)	(313.5)	(0.053)
20	**Net profit for the period**		1 337.4	0.202	1 242.4	0.210
21	Total of other comprehensive income/(expenses)		173.0	0.026	(198.8)	(0.034)
22	**Total comprehensive income for the period**		1 510.4	0.228	1 043.6	0.177

EXHIBIT 2.5 Vertical analysis of CSL's consolidated income statement

Source: Adapted from CSL Limited, *Annual Report 2017*, p. 81.

from the horizontal analysis). Inventories increased 20 per cent (again from the horizontal analysis) while in 2016 it was 28.5 per cent (2152.0/7562.7) of total assets and in 2017 it was 28.2 per cent (2575.8/9122.7). This may appear to be incorrect, but simply shows inventories grew substantially, but not quite as much as the average other assets.

The analysis also reveals CSL's capital structure. Capital structure refers to the degree to which a company's assets are generated from liabilities versus equity. In general, a capital structure more heavily weighted towards liabilities is riskier. According to the vertical analysis, CSL financed over 65 per cent of total assets from *total liabilities* (debt) and therefore less than 35 per cent from *total (shareholders') equity* in the most recent year. Total liabilities increased substantially over the year (19 per cent from the horizontal analysis) and there was a small reduction in debt as a percentage of total assets (2017: 65.3% [5958.9/9122.7]; 2016: 66.1% [4995.5/7562.7]).

LO6 THE STATEMENT OF CHANGES IN EQUITY

Chapter 1 introduced the statement of changes in equity. The retained earnings section of the statement of changes in equity links a company's income statement and balance sheet by showing how profits or losses and dividends change the company's retained earnings balance. All companies show changes in retained earnings, but most show it as a component of a more complete statement of changes in equity.

A statement of changes in equity is a financial statement that shows how and why each equity account in the company's balance sheet changed from one year to the next. It therefore focuses not only on retained earnings, but also on other equity accounts relating to a company's total equity.

For illustration purposes, Exhibit 2.6 contains CSL's Consolidated statement of changes in equity for the year ended 30 June 2017. Like the other financial statements, changes in equity reports two years of data. However, unlike the income statement, each column reflects the activity in a specific equity account rather than a period of time. The five columns of the statement refer to the five equity accounts, four are shown in the balance sheet, (Foreign currency translation reserve and Share-based payment reserve are combined and shown as one line 'Reserves' in the balance sheet).

The first column 'Contributed equity', as discussed previously, is negative. This is complex, and at the introductory stage not important, but if you are interested a simple example may be helpful. Assume a company sold (issued) 100 shares for $1 each – it would have contributed equity of $100. After a number of years the company was very financially successful and the shares were selling for $25 each. If the company wanted to buyback say 10 shares it would need to pay $250 ($25 x 10), which would leave a negative contributed equity of $150 (original $100 minus $250 buyback). Reasons for buybacks are discussed in Chapter 11.

The fourth column, Retained earnings, represents the equity that has been generated through profitable operations and retained in the business. The Retained earnings column is CSL's statement of changes in equity. Profit for the period (and some of the comprehensive income) is added to the beginning retained earnings balance, and dividends are subtracted. As we can calculate,

	A	B	C	D	E	F
1	**CSL Limited Consolidated Statement of Changes in Equity**					
2		**Contributed equity US$m**	**Foreign currency translation reserve US$m**	**Share based payment reserve US$m**	**Retained earnings US$m**	**Total US$m**
3	**At the beginning of the year**	(4213.0)	28.5	159.4	6592.3	2567.2
4	**Total comprehensive income for the full year**	–	97.5	–	1412.9	1510.4
5	Share based payments	–	–	8.8	–	88
6	Dividends	–	–	–	(601.3)	6013
7	Share buyback	(334.0)	–	–	–	3340
8	Share issues - Employee share scheme	12.7	–	–	–	127
9	**As at the end of the year**	(4534.3)	126.0	168.2	7403.9	3163.8

EXHIBIT 2.6 CSL's consolidated statement of changes in equity

Source: Adapted from CSL Limited, *Annual Report 2017*, p. 83.

MAKING IT REAL

WHICH RETAILER IS WHICH?[5]

A company's balance sheet often reflects its business model, and a vertical analysis can help you distinguish one model from another. For example, take the following vertical analyses of selected assets from the 2017 balance sheets of two well-known retailers – Myer and JB Hi-Fi. Can you tell which company is which? Although Myer has more than double JB Hi-Fi's total assets, vertical analysis facilitates the comparison (figures as a percentage of total assets).

	Company A	Company B
Inventories	19.8%	35.1%
Plant, property and equipment	21.66%	8.5%

Both Myer and JB Hi-Fi are in the business of selling inventory, but their models are different. Myer is a traditional 'bricks and mortar' company that sells its inventory in stores, some of which it owns, while JB Hi-Fi is a relatively new retailer that stocks and sells large quantities of inventory for the space it occupies. Therefore, Myer should have a greater percentage of its total assets in plant, property and equipment (PPE) and JB Hi-Fi a greater percentage in inventory. Company A has 21.6 per cent of its assets in PPE and Company B 35.1 per cent of its total assets in inventory. Therefore, Company A is Myer and B is JB Hi-Fi.

Alamy Stock Photo/Takatoshi Kurikawa; Alamy Stock Photo/KC Hunter

CSL paid out around 43 per cent of its profits (and some comprehensive income) in 2017 in dividends (601.3/1412.9).

The last row of the statement and bottom line of the statement of changes in equity, 'As at the end of the year', has (of course) the same numbers that appear in the balance sheet $3163.8.

APPLY THIS

Download the Enrichment Modules for further practice

LO7 INFORMATION BEYOND THE FINANCIAL STATEMENTS

A company's financial statements contain a significant amount of information about the financial activities and position of the company. However, they are not exhaustive, and much information that is useful to users of annual reports is not included directly in the financial statements. As a result, companies like CSL prepare and report additional information beyond the financial statements. These items are normally included in a company's annual report that is distributed to all shareholders. Four items of interest are:

- notes to the financial statements
- auditor's report
- directors' report
- other information, which often includes: information about the business operations, future prospects, shareholder information and a sustainability report
- governance information.

NOTES TO THE FINANCIAL STATEMENTS

At the bottom of each of CSL's financial statements is the following quote: 'The consolidated statement … should be read in conjunction with the accompanying notes'. In addition, next to many of the accounts in the 'Note' column is a number that refers to a specific note following the financial statements. For CSL there are 24 notes in 2017, taking up 35 pages of the annual report.

A company's financial statements cannot communicate or disclose to users all the information necessary to adequately understand the financial activities and condition of an entity. Additional information, both quantitative and qualitative, is necessary and can be found in the notes to the financial statements.

The **notes to the financial statements** are the textual and numerical information immediately following the financial statements that: (1) disclose the accounting methods used to prepare the financial statements,

notes to the financial statements The additional textual and numerical information immediately following the financial statements.

(2) disclose additional detail and explanation of account balances and (3) provide information not recognised in the financial statements. Financial statements should not be examined without considering the notes to the financial statements.

The content of the notes to the financial statements varies by company, but there are some similarities across companies. Initially, the first note of most companies summarises the significant accounting policies used to prepare the financial statements. For example, CSL commences by stating the financial report is prepared in accordance with Australian Accounting Standards. It goes on to explain 'significant accounting policies that summarise the measurement basis used and are relevant to an understanding of the financial statements are provided throughout the notes to the financial statements'.[6] These explanations are especially useful in determining the comparability of financial statements across companies. Second, most companies include a note for each of their significant accounts. These notes can vary depending on the type of business, but most companies have notes for significant items such as property, plant and equipment, income taxes and employee benefit plans, among other things. Exhibit 2.7 is an extract from CSL's balance sheet with the corresponding note.

	Note
Current assets	
Cash and cash equivalents	14
Trade and other receivables	15
Inventories	4
Current tax assets	
Non-current assets	
Other receivables	15
Other financial assets	
Property, plant and equipment	8
Intangible assets	7
Equity	
Contributed equity	12
Reserves	12
Retained earnings	19

EXHIBIT 2.7 Extract from CSL's balance sheet with the corresponding note to the financial statements

Source: Adapted from CSL Limited, *Annual Report 2017*, p. 82.

AUDITOR'S REPORT

How do you know if a financial report can be trusted to fairly present CSL's financial position and performance? Since most of us don't have access to the financial and other records, nor the ability to determine whether the reported numbers are reliable, we trust a third party to provide assurance that the information is reliable. This is why all annual reports contain an *independent auditor's report*.

An **independent auditor's report** is a report, prepared by a registered company auditor for the shareholders, stating an opinion on whether the financial statements give a true and fair view and comply with Australian Accounting Standards and the Corporations Regulations. Exhibit 2.8 contains an extract from CSL's 2017 auditor's report.

independent auditor's report A report, prepared by a registered company auditor for the shareholders, stating an opinion on whether the financial statements present fairly, in conformity with Australian Accounting Standards, the company's financial condition and results of operations and cash flows.

As you can see in the report, EY, one of the 'big four' accounting firms, performed the audit. The auditor's opinion is that the financial reports of CSL give a true and fair view and comply with Australian Accounting Standards and the Corporations Regulations 2001. This type of opinion, which is known as an unqualified opinion, is what all companies hope to receive. With this assurance from EY, users can consider the financial statements reliable.

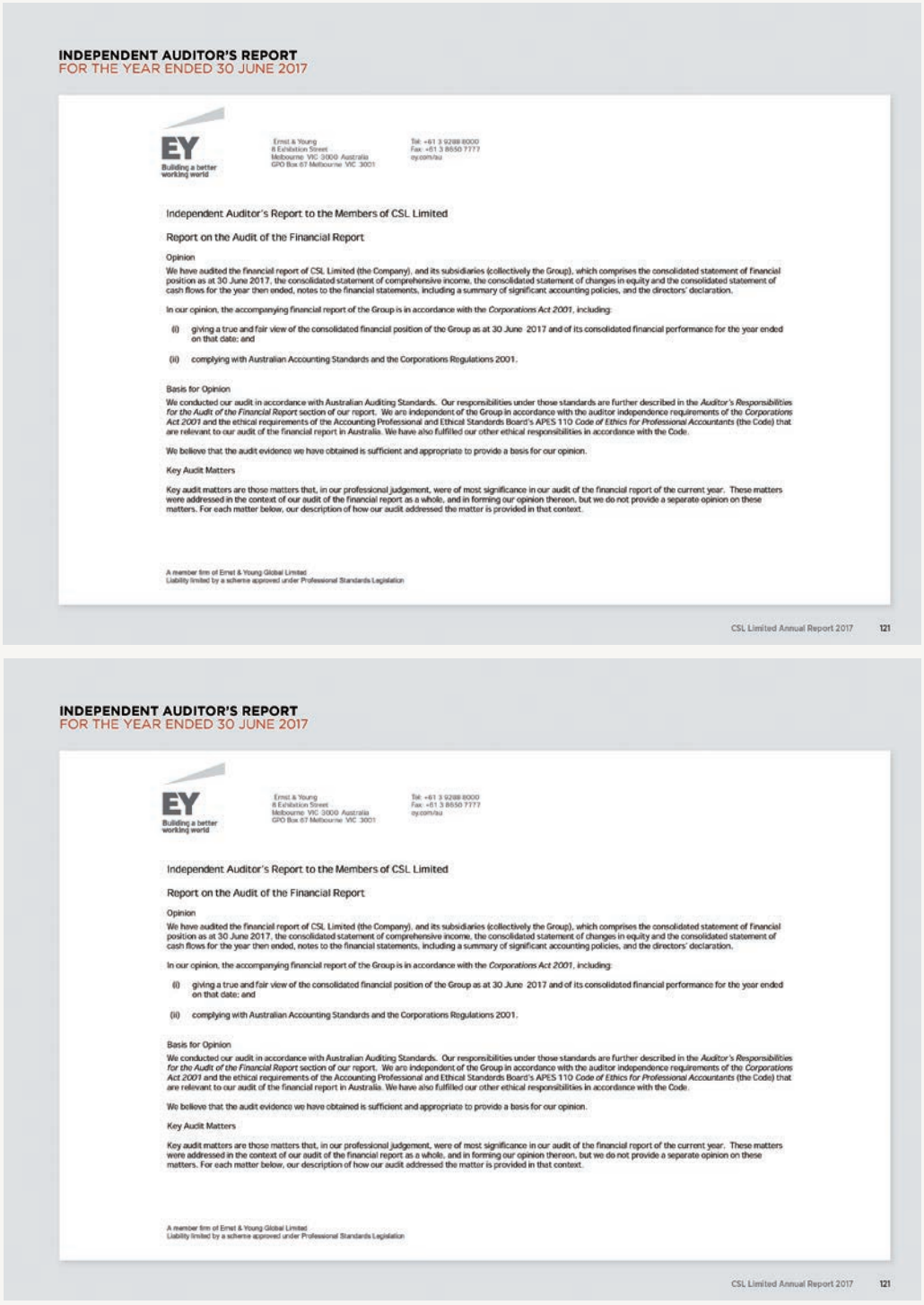
DIRECTORS' REPORT

In addition to financial statements, notes and the auditor's report, all annual reports contain a section called **directors' report**. The directors' report forms part of the financial report and covers matters which are the Board of Directors' responsibility, including: who are the directors, how many meetings they attended, risk management – and over the last ten years increasing in importance – how much and why senior managers are paid (remunerated).

directors' report Forms part of the financial report and covers matters which are the Board of Directors' responsibility.

OTHER INFORMATION

Sometimes referred to as management's discussion and analysis, CSL commences the annual report by telling the reader about the business, including the major business sectors, reviewing the year and highlighting certain aspects. Some of the information may be considered informative or some may cynically see it as public relations. Other information, such as major shareholders and corporate governance, may be required by the Australian Securities Exchange as part of a listed company's obligations. This other information normally precedes the financial report



INDEPENDENT AUDITOR'S REPORT
FOR THE YEAR ENDED 30 JUNE 2017

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Building a better working world

Independent Auditor's Report to the Members of CSL Limited

Report on the Audit of the Financial Report

Opinion

We have audited the financial report of CSL Limited (the Company), and its subsidiaries (collectively the Group), which comprises the consolidated statement of financial position as at 30 June 2017, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion, the accompanying financial report of the Group is in accordance with the *Corporations Act 2001*, including:

(i) giving a true and fair view of the consolidated financial position of the Group as at 30 June 2017 and of its consolidated financial performance for the year ended on that date; and

(ii) complying with Australian Accounting Standards and the Corporations Regulations 2001.

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Group in accordance with the auditor independence requirements of the *Corporations Act 2001* and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial report of the current year. These matters were addressed in the context of our audit of the financial report as a whole, and in forming our opinion thereon, but we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

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CSL Limited Annual Report 2017 121

INDEPENDENT AUDITOR'S REPORT
FOR THE YEAR ENDED 30 JUNE 2017

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Building a better working world

Independent Auditor's Report to the Members of CSL Limited

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CSL Limited Annual Report 2017 121

EXHIBIT 2.8 Extract from CSL's independent auditor's report

Source: CSL Ltd, *Annual Report 2017*, p. 121 & 126. ©2017 CSL Limited.

and, for CSL's 2017 annual report, takes up the first fifty pages.

I would encourage you to look at more detail of this report in Appendix B and on the internet. An excerpt of this is presented in Exhibit 2.8.

SUSTAINABILITY REPORTING

Many companies report information that is broader than the financial and operating activities. Some reporting areas and frameworks have been developed over recent decades which consider a more comprehensive set of stakeholders.

Driven by our promise, CSL is a global biotechnology company that develops and delivers innovative medicines that save lives, protect public health and help people with life-threatening medical conditions live full lives. Our Values guide us in creating sustainable value for our stakeholders.

Delivering on promises is what we do at CSL. Starting a century ago in Melbourne, Australia, we made a promise to save lives and protect the health of people who were stricken with a broad range of serious medical conditions. Today, that same promise has never been stronger. As a leading global biotechnology company, CSL delivers medicines to patients in more than 60 countries and employs nearly 20 000 people …

CSL focuses its world-class research and development (R&D), high-quality manufacturing, and patient-centred management to develop and deliver innovative biotherapies, influenza vaccines and support programs …

EXHIBIT 2.9 Excerpt from 'About CSL'

Source: CSL Ltd, *Annual Report 2017*, p. 2. ©2017 CSL Limited. Reproduced with permission.

Integrated reporting combines financial, corporate social responsibility and other non-financial information into a single report. Integrated reporting is encouraged in India and China and required in South Africa, but voluntary in Australia.

CSL lists the following corporate responsibility priority areas:

- innovation by focussing on product research and development and operational excellence
- ensuring our therapies are safe and of the highest quality by maintaining the highest standards throughout all stages of the product life cycle
- operating responsibly in the marketplace by marketing our medicines in an ethical manner, working with others to improve equity of access and sharing our financial success
- providing a positive working environment for our people by engendering a culture of mutual trust and respect, enabling them to do their jobs safely and effectively, and rewarding and recognising their contributions
- supporting our patient, biomedical and local communities by improving access to our therapies and enhancing the quality of life for patients, advancing scientific knowledge and supporting future medical researchers, and engaging our staff in the support of local communities.[7]

While there is no requirement to provide any information on sustainability, many businesses see providing such information as useful for stakeholders.

GOVERNANCE INFORMATION

CSL devotes 12 pages in the annual report to Corporate Governance. The Australian Securities Exchange (ASX) requires listed companies to report on corporate governance principles and recommends that companies 'lay solid foundations for management and oversight' to 'make timely and balanced disclosures' and 'remunerate fairly and responsibly'.[8]

The board of directors is the governing group of a company; the board selects and appoints the senior managers and makes the major strategic decision. The recognition and management of risk is a major function of boards today. CSL reports on the directors' knowledge, skills and experience, their length of service on the board and importantly, if they are independent.

APPLY THIS

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Miscellaneous terms

LO1, 7

The following definitions were discussed in the chapter:

a A form of business in which two or more people combine their capital and talents.

b Information following the financial statements that provides additional information and disclosures.

c A form of business that is a separate legal entity, established by filing proper forms with ASIC.

d A report that attests to the fair presentation of a company's financial statements.

e The most common form of business.

f Information on role of the board and how it provides responsible leadership.

REQUIRED

Match each definition with one of the following terms: sole proprietorship; governance information; notes to the financial statements; partnership; auditor's report; company or corporation.

2 Classified balance sheet

LO3

The following is a list of accounts taken from Jann's Jeans:

Accounts receivable	$ 2 400
Sales	36 000
Inventory	6 300
Contributed equity	52 000
Accounts payable	9 240
Cash	14 660
Prepaid insurance	5 600
Equipment	27 000
Short-term investments	1 600

REQUIRED

Prepare the current asset section of Jann's balance sheet. Attempt to list the accounts in the proper sequence (liquidity).

3 Calculating gross profit

LO4

During the month, a retailer generates $45 000 of sales, $9500 of operating expenses, and $34 500 in cost of sales. At the end of the month, the company had $3000 of inventory (goods) on hand.

REQUIRED

Calculate the company's gross profit for the month.

4 Calculating profit after tax

LO4

Brancatisano Clothing Supercentre generated a gross profit of $3 875 000 during the year. Also, during the year, Brancatisano incurred advertising expense of $750 000, salaries expense of $1 050 000 and income tax expense of $1 000 000.

REQUIRED

Calculate the company's profit or loss after tax for the year.

5 Horizontal and vertical analyses

LO5

The following information (in millions) was taken from a recent income statement of Lucy-Rose and Sarah Company:

	Current year	Prior year
Net sales	$32 235	$26 306
Cost of sales	19 726	17 920
Gross profit	$12 509	$8 386

REQUIRED

Conduct horizontal and vertical analyses of gross profit. Was the company more or less profitable in the current year? Do both horizontal and vertical analyses indicate that? For your calculations, round percentages to one decimal point (e.g. 10.1%).

6 Horizontal analysis

LO4, 5

The horizontal analysis of a company's sales shows a $34.2 million increase, which equated to a percentage change of 22.8 per cent.

REQUIRED

Interpret the dollar change and percentage change and identify which item(s) from the following list would potentially explain the results of the analysis:

a A sales promotion was highly successful.

b A major supplier was unable to deliver goods on time.

c The company opened several new stores.

d The company lost market share to Amazon.

e The company's contributed equity increased by $1.5 million from the issue of shares.

f Additional optional question: what were sales in the previous year?

7 Statement of changes in equity

LO6

A company provides the following account balances for the current year:

Contributed equity, beginning of year	$ 20 600
Retained earnings, beginning of year	62 496
Additional contributed equity	100 000
Dividends	9 500
Profits (comprehensive income)	22 133

REQUIRED

Prepare a statement of changes in equity at year-end in a single column to give the closing balance of total equity.

8 Classified balance sheet

LO3

The following is a list of accounts:

- Mortgage payable, due in 15 years
- Short-term investments
- Cash
- Prepaid rent
- Patents
- Contributed equity
- Accounts payable
- Buildings
- Notes payable, due in six months.

REQUIRED

Identify each account as a current asset, non-current asset, intangible asset, current liability, non-current liability, contributed equity, or retained earnings.

9 Classified balance sheet terms

LO3

The following is a list of balance sheet classifications and descriptions:

a Current asset
b Long-term investment
c Non-current asset
d Contributed equity
e Intangible asset
f Current liability
g Non-current liability
h Retained earnings
i An obligation that is reasonably expected to be satisfied within the coming financial year.
ii An investment in the shares or bonds of another entity that the company does not intend to sell within one year.
iii An obligation that is not expected to be satisfied within one year.
iv The portion of equity contributed by shareholders through the purchase of shares.
v Resources that are reasonably expected to be converted to cash or consumed during the coming financial year.
vi Tangible resources that are used in the company's operations for more than one year and are not intended for resale.
vii The profits that a company earns over time and is not paid out in dividends.
viii Resources to be used in the company's operations for more than one year that have no physical substance.

REQUIRED

Match the classification to the description.

10 Balance sheet

LO3

Balance sheet			
	Pauline's Fish & Chips	Barnaby's Bar & Grill	Sue's Surf and Turf
ASSETS			
Current assets	$ 48 500	$ 35 000	$ 64 500
Non-current assets	125 750	100 000	150 000
Intangible assets	32 250	55 250	15 000
Other assets	(a)	35 500	6 500
Total assets	220 000	225 750	(g)
LIABILITIES			
Current liabilities	$ 15 500	$ 7 000	(h)
Non-current liabilities	45 000	(d)	65 500
Total liabilities	(b)	75 000	69 000
EQUITY			
Contributed equity	$ 55 000	(e)	$ 67 500
Retained earnings	(c)	105 000	(i)
Total liabilities and equity	220 000	(f)	(j)

REQUIRED

Fill in the 10 missing numbers (a)-(j) for the independent businesses.

11 Classified balance sheet

LO3

The following items were taken from the 30 June balance sheet of Samantha Solarium:

Buildings, net	$120 400
Accounts receivable	29 040
Prepaid insurance	9 360
Cash	41 680
Equipment (net)	127 360
Land	123 600
Mortgage payable	206 080
Contributed equity	132 000
Retained earnings	80 000
Interest payable	7 200
Accounts payable	24 960

REQUIRED

Recreate the company's classified balance sheet, assuming that $27 200 of the mortgage payable balance will be paid within three months of the balance sheet date.

12 Multi-step income statement

LO4

These items were taken from the financial records of Tran Nguyen Pty Ltd:

Electricity expense	$ 17 650
Interest expense	50
Selling expense	14 600
Administrative expense	15 230
Interest revenue	500
Cost of sales	75 620
Net sales	154 900

REQUIRED

Prepare a multi-step income statement assuming Tran Nguyen pays the 25 per cent company rate and has a 30 June financial year end (you can assume in this case accounting profit equals taxable income).

13 Multi-step income statement

LO4

The following income statement items are taken from the records of Matthew Music Mania for the year ending 30 June:

Advertising expense	$ 6 210
Cost of sales	83 910
Income tax expense	2 250
Insurance expense	3 960
Interest expense	4 115
Interest revenue	6 055
Rent expense	11 410
Salaries expense	28 525
Sales	153 100
Electricity expense	5 600

REQUIRED

Prepare a multi-step income statement for the year ending 30 June.

14 Financial statement accounts

LO3, 4, 6

The following is a list of accounts:

Accounts receivable	Interest payable
Interest revenue	Contributed equity
Inventory	Pandemic reservation fees
Buildings	Cost of sales
Dividends	Administrative expense
Mortgage	Sales
Accounts payable	Retained earnings
Supplies	Cash
Reserves	Finance costs

REQUIRED

Identify if each account would appear on the balance sheet, income statement and/or statement of changes in equity.

15 Horizontal and vertical analyses, income

LO4, 5

Comparative statements of comprehensive income are available for Fiona's Fine Fruit (all figures in millions):

	2020	2019
Sales	$850	$800
Cost of sales	325	275
Gross profit	525	525
Other expenses	175	121
Profits before tax	350	404
Income tax expense	105	121
Total comprehensive income	$245	$283

REQUIRED

a Perform horizontal and vertical analyses on each of the items in the above comparative income statements. Round percentages to one decimal point (e.g. 10.1 %).

b Briefly comment on the performance and suggest areas where management need to devote attention if they wish to reverse the decline in profits.

16 Horizontal and vertical analyses, balance sheet

LO3, 5

The following comparative balance sheet data is available for Elizabeth Enterprises:

	2020	2019
Total assets	$850 000	$700 000
Total liabilities	240 000	280 000
Total equity	610 000	420 000

REQUIRED

Perform horizontal and vertical analyses on each of the items above. Round percentages to one decimal point (e.g. 10.1 %). If generating assets through debt is considered riskier than generating assets through equity, is Elizabeth more or less risky in 2020?

17 Horizontal and vertical analyses

LO5

A company provides the following information:

	Current year	Prior year
Net sales	$121 345	$119 872
Accounts receivable	30 192	12 676
Total assets	246 933	250 361

REQUIRED

Should the company be concerned about its performance? Use horizontal and/or vertical analyses to 'prove' it should or should not be concerned. Round percentages to one decimal point (e.g. 10.1 %). What other information may be considered more relevant to a question about 'performance'? Why?

18 Financial accounting terms

LO5, 7

The following are various terms and definitions from financial accounting:

a Common size financial statement
b Notes to the financial statements
c Governance report
d Auditor's report
e Vertical analysis
f Horizontal analysis.
i A technique that compares account balances within one year by stating each account balance as a percentage of a base amount.
ii Textual and numerical information immediately following the financial statement's disclosing information such as accounting methods used, detail and explanation of account balances, and information not recognised in the financial statements.
iii A statement in which all accounts have been standardised by the overall size of the company.
iv A discussion and analysis of strategic and risk management by the board of directors.
v A report, prepared by a specialist accountant for the stakeholders stating the company's financial performance and position are fairly stated.
vi A technique that calculates the change in an account balance from one period to the next and expresses that change in both dollar and percentage terms.

REQUIRED

a Match each term with the appropriate definition.
b Rewrite two of the definitions *in your own words* explaining to a group of 16-year-old students what the two terms mean. You may use examples.

PROBLEMS

19 Prepare a classified balance sheet

LO3

Bay Company thinks there may be a problem with its balance sheet:

Bay Company
Classified balance sheet
For the year ending 30 June

Assets			Liabilities and shareholders' equity		
Current assets			Current liabilities		
Buildings	$70 000		Accounts payable	$16 000	
Interest revenue	11 000		Interest expense	39 000	
Equipment	41 000		Total current liabilities		$ 55 000
Cash	8 000		Shareholders' equity		
Other current assets	4 000		Retained earnings	$50 000	
Total current assets		$134 000	Contributed equity	35 000	
Accounts receivable	$12 000		Bonds payable	40 000	
Land	20 000		Total shareholders' equity		125 000
Interest payable	14 000				
Total non-current assets		46 000			
Total assets		$180 000	Total liabilities and shareholders' equity		$180 000

REQUIRED

Prepare a correctly classified balance sheet.

20 Prepare a multi-step income statement

LO4

The auditor for Chan Corporation noticed that its income statement was incorrect

Chan Corporation income statement 30 June		
Sales		$130 000
Cost of sales		80 000
Accounts receivable		19 500
Gross profit		30 500
Interest expense	$15 000	
Selling and administration expense	13 000	
Dividends	1 000	
Total other expenses		(29 000)
Interest revenue	16 500	
Accounts payable	4 000	8 500
Income before taxes		10 000
Income tax expense		(12 850)
Loss		$ (850)

REQUIRED

Prepare a corrected multi-step income statement.

21 Prepare and analyse the balance sheet

LO3, 5

The following comparative balance sheet items are available from Lim Limited as of 30 June 2021:

	2021	2020
Accounts payable	$ 75 500	$ 35 035
Accounts receivable	50 000	85 065
Bonds payable, due 30/06/2028	125 000	25 000
Buildings, net	240 000	300 000
Contributed equity	100 000	80 000
Cash	15 000	25 635
Equipment, net	24 000	24 000
Income taxes payable	12 250	16 465
Interest payable	13 755	7 550
Inventory	25 650	27 270
Land	300 000	200 000
Long-term investments	125 000	100 000
Notes payable, due 31/12/2021	100 000	100 000
Supplies	12 500	13 500
Additional equity	200 000	190 000
Patents	6 000	6 000
Prepaid rent	10 150	12 275
Retained earnings	146 295	306 135
Salaries payable	35 500	33 560

REQUIRED

a Prepare a comparative, classified balance sheet for Lim Limited.

b Perform horizontal and vertical analyses and interpret the results. Round percentages to one decimal point (e.g. 10.1%).

c Assume the same information above except that in 2021, Bonds payable is $0 while Retained earnings is $271 295. Does this new information change any interpretations previously made?

22 Multi-step income statement and classified balance sheet

LO3, 4

The following items were taken from the financial statements of Wells Company for 2018:

Accounts payable	$15 780
Accounts receivable	8 470
Advertising expense	4 200
Cash	16 080
Contributed equity	15 400
Cost of sales	41 250
Dividends	2 310
Equipment, net	45 420
Income tax expense	3 260
Insurance expense	4 680
Non-current liabilities	9 920
Prepaid insurance	5 970
Retained earnings, 1 Jan.	28 450
Salaries expense	17 420
Salaries payable	5 210
Sales	78 480
Electricity expense	4 180

REQUIRED

Prepare a multi-step income statement for the year ending 31 December 2018, and a classified balance sheet at 31 December 2018. Hint: you must calculate ending retained earnings.

23 Prepare and analyse an income statement

LO4, 5

The following income statement items are available from Bugeja Limited for the years ending 31 December:

	2019	2018
Advertising expense	$ 7 765	$ 9 789
Commissions expense	4 879	6 010
Cost of sales	48 596	58 896
Income tax expense	2 217	2 684
Insurance expense	4 897	5 236
Interest expense	2 584	2 695

Interest revenue	4 287	4 189
Sales	95 950	106 569
Supplies expense	1 654	2 106
Salaries expense	19 320	21 012
Rent expense	7 634	7 856

REQUIRED

a Prepare a comparative, multi-step income statement for Bugeja.

b Perform horizontal and vertical analyses and interpret the results. Round percentages to one decimal point (e.g. 10.1%).

c Assume the following changes: Cost of sales in 2019, $62 470 and in 2018, $45 670. Does this new information change previously made interpretations?

24 Using horizontal and vertical analyses

LO5

The president of Wakefield Investments is disappointed that the company was less profitable this year than last. Comparative income statements for Wakefield are:

	Current year	Prior year
Sales	$800 000	$500 000
Cost of sales	300 000	200 000
Gross profit	500 000	300 000
Operating expenses	167 000	130 000
Profits after tax	333 000	170 000
Gain on hedge transaction (net of tax)	0	180 000
Profit	333 000	350 000

REQUIRED

Why was Wakefield's profit lower in the current year? Use horizontal and vertical analyses to show the ways in which Wakefield was more profitable in the current year. Round percentages to one decimal point (e.g. 10.1%).

25 Reading and analysing financial statements

LO3, 4, 5

Access the latest copy of CSL's Annual Report by searching the internet for 'CSL Annual Report' (the annual report is released in September or October each year).

REQUIRED

a Identify the company's current-year and prior-year balances in total current assets; property, plant and equipment; total current liabilities; interest-bearing liabilities; and total shareholders' equity. Conduct vertical analysis on each account balance. What broad trend (if any) is indicated by the calculations? Round percentages to one decimal point (e.g. 10.1%).

b Identify the company's current-year and prior-year total operating revenue, gross profit, operating profits and total comprehensive income for the period. Conduct horizontal analysis on each account balance. What broad trend (if any) is indicated by the calculations? Round percentages to one decimal point.

c Look up CSL's share price. How has it changed over the period covered by the income statement? Calculate the percentage change in the share price. Of the change in the four accounts in (b) above, which is it closest to?

26 Research and analysis

LO4, 5

Access the latest annual report for Cochlear by searching the internet for 'Cochlear limited annual report'.

REQUIRED

a Conduct horizontal analysis of Cochlear's sales, gross profit and total comprehensive income, and vertical analysis for the same accounts for both the current and prior year. Round percentages to one decimal point (e.g. 10.1%). What conclusions can you draw about the company's ability to earn a profit from its sales?

b Conduct horizontal analysis of the company's inventory, total liabilities and total equity for the current year and vertical analysis for the same accounts for both the current and prior year. Round percentages to one decimal point (e.g. 10.1%). What conclusions can you draw about the company's changing business model?

c Look up Cochlear's share price. How has it changed over the period covered by the income statement? Calculate the percentage change in the share price. Of the change in the three accounts in (a) above, which is it closest to?

3

Recording accounting transactions

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the purpose of an accounting information system.
2. Analyse the effect of accounting transactions on the accounting equation.
3. Understand how T-accounts and debits and credits are used in a dual-entry accounting system.
4. Explain the purpose of the journal, ledger and trial balance.
5. Record and post accounting transactions, prepare a trial balance, income statement, the changes in equity and balance sheet.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

The first two chapters of this book focused on how economic information is communicated to users through financial statements, including:

- balance sheets (statement of financial position)
- income statements (statement of comprehensive income)
- statements of changes in equity
- cash flow statements.

This chapter and Chapter 4 focus on how the activities of a business are captured by the accounting system so that these financial statements can be prepared. More specifically, they describe the accounting cycle. Because financial statements must be prepared periodically, the process of capturing and reporting information is a repetitive process, or cycle. This chapter explores the first three steps in the accounting cycle. The next chapter explores the remaining steps.

LO1 THE ACCOUNTING INFORMATION SYSTEM

An organisation's **accounting information system** is the system that identifies, records, summarises and communicates the various transactions of a business entity. Accounting information systems vary widely, ranging from manual, pencil-and-paper systems in some micro businesses to highly complex electronic systems in other organisations. However different their forms, all accounting systems are built to capture and report the effects of a business' accounting transactions.

accounting information system The system that identifies, records, summarises and communicates the various transactions of a business.

An **accounting transaction** is any economic event that affects a business' assets, liabilities or equity at the time of the event. Examples include the purchase of equipment, the consumption of supplies in operations and the issuance of debt or shares. In each example, the event increases or decreases a specific asset, liability and/or equity account of the business. Accounting transactions between a business and an external party (for example, an equipment purchase or the issuance of shares) are *external* transactions, while transactions within a business (the consumption of supplies) are *internal* transactions.

accounting transaction Any economic event that affects a business' assets, liabilities and/or equity at the time of the event.

To record accounting transactions and summarise the resulting information, companies use accounts. An **account** is an accounting record

account An accounting record that accumulates the activity of a specific item and yields the item's balance.

that accumulates the activity of a specific item and yields the item's balance. For example, a business' cash account is increased and decreased as cash is received and paid, and it shows the amount of cash held at any point in time. The various accounts that a business uses to capture its business activities are often listed in a **chart of accounts**. An example, complete with numerical references for each account, is found in Exhibit 3.1.

chart of accounts The list of accounts that a business uses to capture its business activities.

Charts of accounts will vary across businesses. For example, a bank will have accounts relating to customer deposits, while a biotech company like CSL will have accounts relating to research and development. Of course, there certainly will be many commonalities across charts of accounts, for example, practically every business will have an account for cash, but there will be differences depending on the business' activities. As a result, you can tell a lot about what a business does if you have its chart of accounts.

APPLY THIS **Check out the video summary for Chapter 3**

100–199	ASSETS
100	Cash
101	Accounts Receivable
110	Supplies
120	Equipment
200–299	LIABILITIES
210	Accounts Payable
211	Unearned Revenues
230	Notes Payable
300–399	EQUITY
300	Contributed Equity
350	Retained Earnings
400–499	REVENUES
400	Service Revenue
410	Sales Revenue
500–599	EXPENSES
501	Administrative Expense
502	Advertising Expense
600–699	DIVIDENDS

EXHIBIT 3.1 An example of a chart of accounts

iStock.com/David Hills

Much like a video camera, an accounting information system captures business activity so that others can view it

MAKING IT REAL

CHART OF ACCOUNTS

Even for a relatively small organisation like a university with turnover of around $1 billion, it would have thousands of accounts to allow it to keep track of where the money is spent and where the money comes from. The chart of accounts is also used to ensure if money has been allocated to a particular project, like the development of a student learning activity, and that no more is spent on the project than the funds set aside.

Although the account numbers and account description are almost meaningless to an outsider, the first two numbers '90' probably represent revenue accounts, the next two numbers may be a unit or activity within the organisation, and so the account numbers take on meaning for those using the chart of accounts regularly. Below are just a few of more than 18 000 accounts used by a university.

Lacoste + Stevenson Architects

Account number	Account description
906420	COHTLE Library Collection
906500	COHTLE Library
906610	COHWPS Widening Participation Funding
906620	COHWPS Partnership Funding
906630	COHWPS Bridges to Higher Education
906640	COHWPS Additional Partnership Funding
907010	COHRES – COH – CSU Managed

CSL ANALYSIS

Look at CSL's balance sheet in Appendix B and determine how many accounts it uses to report its assets, liabilities and equity. Also, consider the scenario when one shareholder of CSL sells her shares to another shareholder. Is this an economic event relating to CSL? Is it an accounting transaction?

Analysis:

CSL's balance sheet reports 26 different accounts, comprised of 11 asset accounts, 12 liability accounts and 3 equity accounts.

When CSL's shares are sold on the Australian Securities Exchange, the sale is an economic event of interest to CSL (it needs to note the change in shareholding so it can pay the correct dividend and record the correct shareholder information – for voting at meetings, communications, etc.). However, because CSL is not involved in the exchange of resources, no money is received or paid out by CSL; it is not an accounting transaction.

LO2 ACCOUNTING TRANSACTIONS AND THE ACCOUNTING EQUATION

All accounting transactions must be recorded in the accounting information system. To understand the nature of recording transactions, it is best to start with the fundamental accounting equation:

Assets = Liabilities + Equity

The equation states that a business entity's assets must always equal the sum of its liabilities and equity. This means that any change to one part of the equation must be accompanied by a second change to another part. For example, suppose that a transaction increases an asset account; for the equation to stay in balance, the transaction must also either decrease another asset account, or increase a liability or equity account. This means that every accounting transaction must affect at least two accounts. For every transaction there is a source and a use. Money comes from somewhere and it goes somewhere. This is known as the **dual nature of accounting**.

dual nature of accounting Every accounting transaction must affect at least two accounts.

TRANSACTION ANALYSIS

To illustrate how accounting transactions affect the accounting equation, consider the following 10 transactions in the first month of operations of Video Memories, a business that documents graduations, weddings, birthdays and other significant life events. Although the example is a small hypothetical business, the transactions would be treated in the same way by a large company. We start by recording the transactions in a spreadsheet and later in the chapter use the more formal accounting journal and ledger.

APPLY THIS

Check out the animated summary on Transaction Analysis

Alamy Stock Photo

Videoing a customer's wedding

TRANSACTION ANALYSIS

Transaction #1

After registering the business name, Video Memories, the owners deposited $15 000 into the business' bank account. Because Video Memories receives cash of $15 000, assets increase. Its equity also increases because investors have contributed cash for an ownership interest in the business. More specifically, Video Memories' contributed equity (or contributed capital) increases.

	Assets	=	Liabilities	+	Equity
	Cash	=		+	Contributed Equity
Prior bal.	$ 0				$ 0
#1	+ $15 000				+ $15 000
New bal.	$15 500				$15 000
	$15 000	=	$ 0	+	$15 500

EXHIBIT 3.2 Transaction summary for Video Memories (*Continued*)

Transaction #2

Video Memories purchases an HD digital video camera for $9000 and supplies (memory cards, USBs, paper, pens etc.) for $1000. In this transaction, the business is exchanging one asset (cash) for other assets (equipment and supplies). Therefore, assets both increase and decrease by $10 000. The net effect is no change in total assets.

	Assets			=	Liabilities	+	Equity
	Cash	Supplies	Equipment	=		+	Contributed Equity
Prior bal.	$15 000	$ 0	$ 0				$15 000
#2	− $10 000	+ $1 000	+ $ 9 000				
New bal.	$ 5 000	$1 000	$ 9 000				$15 000
		$15 000		=	$ 0	+	$15 000

Transaction #3

Video Memories receives a $1500 payment immediately after videoing a customer's wedding. Since Video Memories is receiving cash, assets increase. But unlike the previous transaction in which assets were exchanged, the increase in assets in this transaction results from videoing the wedding. Recall from Chapter 1 that an inflow of assets from providing a service is a revenue. Revenues increase profits and therefore retained earnings. As a result, Video Memories' equity increases. At this stage we record the revenue as an increase in retained earnings, for simplicity and to emphasise that revenues increase the value of the business to the owner.

	Assets			=	Liabilities	+	Equity	
	Cash	Supplies	Equipment	=		+	Contributed Equity	Retained Earnings
Prior bal.	$5 000	$1 000	$9 000				$15 000	$ 0
#3	+ $1 500							+ $1 500
New bal.	$6 500	$1 000	$9 000				$15 000	$1 500
		$16 500		=	$ 0	+	$16 500	

Transaction #4

Video Memories receives a $2000 deposit from a customer to video her parents' 25th wedding anniversary. In this transaction, Video Memories again receives cash from a customer, so assets increase. However, it has not yet provided the service, so it has an obligation to the customer (it needs to video the anniversary or return the deposit). As a result, Video Memories' liabilities increase for the amount of cash received. We call the liability Unearned Revenue as it is the result of receiving future revenue that at this stage is unearned.

	Assets			=	Liabilities	+	Equity	
	Cash	Supplies	Equipment	=	Unearned Revenue	+	Contributed Equity	Retained Earnings
Prior bal.	$6 500	$1 000	$9 000		$ 0		$15 000	$1 500
#4	+ $2 000				+$2 000			
New bal.	$8 500	$1 000	$9 000		$2 000		$15 000	$1 500
		$18 500		=	$2 000	+	$16 500	

Transaction #5

Video Memories paid $250 cash to have the business appear on Google Maps for the month. Because Video Memories paid cash, assets decrease. The decrease in assets results from advertising its business. Recall from Chapter 1 that a decrease in resource (in this case an asset) from operating a business is an expense. Expenses decrease profits and therefore retained earnings. As a result, Video Memories' equity decreases. At this stage we record the expense as a decrease in retained earnings, for simplicity and to emphasise that expenses decrease the value of the business to the owner.

EXHIBIT 3.2 Transaction summary for Video Memories (*Continued*)

	Assets			=	Liabilities	+	Equity	
	Cash	Supplies	Equipment	=	Unearned Revenue	+	Contributed Equity	Retained Earnings
Prior bal.	$8 500	$1 000	$9 000		$2 000		$15 000	$1 500
#5	– $ 250							– $ 250
New bal.	$8 250	$1 000	$9 000		$2 000		$15 000	$1 250
		$18 250		=	$2 000	+	$16 250	

Transaction #6

Video Memories videos a dance competition, leaving a $3500 invoice (bill) with the customer. Because Video Memories receives no cash at the time of the competition, it is tempting to conclude that there is no accounting transaction and therefore no effect on the accounting equation. However, not all accounting transactions affect cash. By completing the job and leaving an invoice with the customer, Video Memories now has a receivable from the customer. Therefore, assets increase. And because the receivable is generated by providing a service, the business entity has additional revenues and therefore more equity. So, equity increases as well. Note that this transaction is very similar to Transaction #3, with the only difference being the type of asset that increases.

	Assets				=	Liabilities	+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	+	Contributed Equity	Retained Earnings
Prior bal.	$8 250	$ 0	$1 000	$9 000		$2 000		$15 000	$1 250
#6		+ $3 500							+ $3 500
New bal.	$8 250	$3 500	$1 000	$9 000		$2 000		$15 000	$4 750
		$21 750			=	$2 000	+	$19 750	

Transaction #7

Video Memories purchases another video camera for $9000 by signing a nine-month promissory note requiring the payment of principal and interest at maturity. Interest is charged at a 6 per cent annual rate. Like Transaction #2, Video Memories receives equipment, so assets increase like Transaction #2, but unlike this Video Memories promises to pay cash and interest in nine months instead of paying cash now. Therefore, the liabilities increase.

	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
Prior bal.	$8 250	$3 500	$1 000	$9 000		$2 000	$ 0		$15 000	$4 750
#7				+ $9 000			+ $9 000			
New bal.	$8 250	$3 500	$1 000	$18 000		$2 000	$9 000		$15 000	$4 750
		$30 750			=	$11 000		+	$19 750	

Transaction #8

Video Memories receives $3500 from the customer in payment of the invoice from Transaction #6. In this transaction, Video Memories exchanges one asset for another. It receives cash in satisfaction of the receivable that was created when the service was performed. As a result, cash increases while receivables decrease. There is no change in total assets and this is *not* the earning of revenue (the revenue was earned in Transaction #6).

	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
Prior bal.	$8 250	$3 500	$1 000	$18 000		$2 000	$9 000		$15 000	$4 750
#8	+ $3 500	– $3 500								
New bal.	$11 750	$ 0	$1 000	$18 000		$2 000	$9 000		$15 000	$4 750
		$30 750			=	$11 000		+	$19 750	

EXHIBIT 3.2 Transaction summary for Video Memories (*Continued*)

Transaction #9

Video Memories pays wages of $2000 to its employee. In this case, its cash decreases by $2000, so its assets decrease. Since the payments are an outflow of assets from operating the business, the payments are an expense, which reduces profits, a reduction to equity. Therefore, equity (retained earnings) decreases.

	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
Prior bal.	$11 750	$ 0	$1 000	$18 000		$2 000	$9 000		$15 000	$4 750
#9	– $ 2 000									– $2 000
New bal.	$ 9 750	$ 0	$1 000	$18 000		$2 000	$9 000		$15 000	$2 750
		$28 750			=	$11 000		+	$17 750	

Transaction #10

At the end of the month, the owners of Video Memories withdraw $1500 for personal use. In this transaction the asset cash decreases. Payments to business' owners are drawings or dividends (if the business was a company), they are *not* an expense. Recall from Chapter 1 that dividends decrease retained earnings, so equity decreases as well.

	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
Prior bal.	$9 750	$ 0	$1 000	$18 000		$2 000	$9 000		$15 000	$2 750
#10	– $1 500									– $1 500
New bal.	$8 250	$ 0	$1 000	$18 000		$2 000	$9 000		$15 000	$1 250
		$27 250			=	$11 000		+	$16 250	

SUMMARY OF TRANSACTIONS

The 10 transactions of Video Memories are summarised in Exhibit 3.2. The business entity started the month with nothing but an idea and ended the month with $27 250 in assets, $11 000 in liabilities and $16 250 in equity. As you review the exhibit, note that changes to the left side of the equation equal the changes to the right side of the equation for all transactions. As a result, the accounting equation was always in balance. Note also that every transaction affected at least two specific accounts. Sometimes the transaction affected two asset accounts (#2 and #8), sometimes an asset and a liability account (#4 and #7), and sometimes an asset and an equity account (#1, #3, #5, #6, #9 and #10). Any combination affecting assets, liabilities and equity can occur, as long as the equation stays in balance.

	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
#1	+$15 000				=			+	+$15 000	
#2	–10 000		+$1 000	+$9 000	=			+		
#3	+1 500				=			+		+$1 500
#4	+2 000				=	+$2 000		+		
#5	–250				=			+		–250
#6		+3 500			=			+		+3 500
#7				+9 000	=		+9 000	+		
#8	+3 500	–3 500			=			+		
#9	–2 000				=			+		–2 000
#10	–1 500				=			+		–1 500
	$ 8 250	$ 0	$1 000	$18 000	=	$2 000	$9 000	+	$15 000	$1 250
		$27 250			=	$11 000		+	$16 250	

EXHIBIT 3.2 Transaction summary for Video Memories

LO3 THE DUAL-ENTRY ACCOUNTING SYSTEM

While the preceding analysis is an excellent way to understand and visualise the effect of accounting transactions, accounting information systems do not record transactions using pluses and minuses in a spreadsheet format, because although it is accurate, it is very cumbersome. Instead a **dual-entry accounting system** is used, which traces its origins back to a mathematical treatise written in the 15th century by a Franciscan monk, Luca Pacioli. The dual-entry system is based on the dual nature of accounting demonstrated in the preceding transaction analyses. That is, every accounting transaction affects at least two accounts, so accounting systems record those transactions with a 'dual' or 'double' entry. The following sections explain the mechanics of this dual-entry system, starting with the T-account.

dual-entry accounting system A system of accounting in which every accounting transaction affects at least two accounts.

THE T-ACCOUNT

All accounts can be characterised or represented in the following form known as a T-account due to its resemblance to an upper-case letter T.

Account name	
Debit side	Credit side

The name of the account is listed at the top with two columns appearing below. The left column is the **debit** side while the right column is the **credit** side. The word debit comes from the Latin word *debitum*, meaning 'what is due', and credit comes from *creditum*, something entrusted to another or a loan. Recall that a list of all the different asset, liability and equity accounts is called a chart of accounts.

debit A use of funds, recorded on the left-hand side of a T-account.

credit A source of funds, recorded on the right-hand side of a T-account.

T-accounts work as follows. When a transaction affects an account balance, the amount of the transaction is entered on the account's debit side or credit side, depending on the transaction. You will see how transactions are recorded shortly. Once all entries are made, the balance in an account is determined by separately adding up all debits and all credits and subtracting the smaller total from the larger, leaving the difference as the account balance on the side that is larger. The following example illustrates this process:

Asset: Cash	
15 000	
	10 000
1 500	
2 000	
	250
3 500	
	2 000
	1 500
8 250	

The areas between the horizontal lines contain the activity in each account, with the account balance below. The asset account has four debit entries totalling $22 000 and four credit entries totalling $13 750, leaving a debit balance of $8250.

It is no coincidence that in this example the asset account has a debit balance. In a dual-entry system, asset accounts should normally have debit balances while liability and equity accounts should normally have credit balances. Such 'normal' balances mirror the accounting equation, where assets are on the left side of the equal sign, and liabilities and equity are on the right side.

Normal account balances					
Asset accounts		**Liability accounts**		**Equity accounts**	
Normal balance			Normal balance		Normal balance

Accounting equation
Assets = Liabilities + Equity

This arrangement of normal balances is the key to how a dual-entry system works. To keep the accounting equation balanced, a dual-entry system must keep debit balances equal to credit balances. This means that every accounting transaction must be recorded with equal changes to debit and credit balances. That, again, is why the system is 'dual-entry'. How debits and credits are used to change account balances is discussed next.

DEBIT AND CREDIT RULES

In a dual-entry system, changes in account balances are recorded according to the following basic rules:

- To *increase* an account balance: record the transaction on the same side as the normal balance.
- To *decrease* an account balance: record the transaction on the opposite side of the normal balance.

These two rules seem simple enough, but their application can be confusing at first because different accounts have different normal balances. The following sections demonstrate how these rules are applied to asset, liability and equity accounts. Also demonstrated is how these rules are applied to the three types of accounts that affect equity: revenues, expenses and dividends (drawings). Once you have mastered the mechanics of these six types of accounts, you should be able to record any accounting transaction correctly.

Asset accounts

Asset accounts have normal debit balances. Therefore, increases to assets are recorded on the debit side while decreases are recorded on the credit side.

Asset accounts	
Record increases on debit side	Record decreases on credit side
Balance	

To illustrate, suppose that a business starts the day with $5000 in cash, receives $300 from a customer and pays $250 to a supplier. The beginning balance of $5000 is recorded on the debit side of the cash T-account. The increase of $300 is also recorded on the debit side, but the $250 decrease in cash is recorded on the side opposite of the normal balance – the credit side. Netting the debit and credit sides gives a debit balance of $5050. (Remember, if we were recording these transactions there would be a corresponding $300 credit to revenue and a $250 debit to accounts payable.)

Cash	
5000	250
300	
5050	

Liability and equity accounts

Liability and equity accounts have normal credit balances. Therefore, increases are recorded on the credit side, while decreases are recorded on the debit side.

Liability and Equity Accounts	
Record decreases on debit side	Record increases on credit side
	Balance

To illustrate a liability account, suppose that a business owes $2500 to a supplier, then buys an additional $150 of inventory on account and then pays $850 of its obligation. The beginning balance of $2500 is recorded on the credit side of the accounts payable T-account. The additional payable of $150 is also recorded on the credit side. In contrast, the $850 payment, which is a reduction to the payable, is recorded on the debit side. Netting the debit and credit sides yields a credit balance of $1800.

Accounts Payable	
850	2500
	150
	1800

To illustrate an equity account, suppose that a company has $34000 of contributed equity. The company then issues additional shares for $10000 and later buys back $6000 of shares. The original $34000 balance appears on the credit side of the Contributed Equity T-account. Since the Contributed Equity account has a normal credit balance, the $10000 increase is recorded on the credit side while the $6000 decrease is recorded on the opposite or debit side of the account. Netting the debit and credit sides gives a credit balance of $38000.

Contributed Equity	
6000	34000
	10000
	38000

Revenue accounts

When a business earns revenue, it is increasing its equity. As demonstrated previously, increasing an equity account requires a credit entry. Therefore, revenue accounts are set up so that they also are increased with a credit entry. That is, revenue accounts have normal credit balances and are increased with credit entries and decreased with debit entries.

Revenue Accounts	
Record decreases on debit side	Record increases on credit side
	Balance

To illustrate, suppose that a business has $115000 in existing service revenue. The business then earns an additional $13000 in revenue. Since the Service Revenue account has a normal credit balance, both the existing $115000 balance and the $13000 increase are shown on the credit side, resulting in a balance of $128000.

Service Revenue	
	115000
	13000
	128000

Expense and dividend accounts

When a business incurs expenses or pays dividends, it is decreasing its equity. As demonstrated previously, decreasing equity requires a debit entry. Therefore, for expense and dividend accounts to effectively reduce equity, they have normal debit balances. Expense and dividend accounts are therefore increased with debit entries and decreased with credit entries. Although expenses and

dividends both reduce equity they are very different: expenses reduce profits while dividends are voluntary distributions out of retained earnings.

Expense and dividend accounts	
Record increases on debit side	Record decreases on credit side
Balance	

To illustrate an expense, suppose that a business has $66 000 in salaries expense when it incurs an additional $6000 in salaries expense. Since the Salaries Expense account has a normal debit balance, both the $66 000 in existing expense and the $6000 increase should be recorded on the debit side of the account, giving a balance of $72 000.

Salaries Expense	
66 000	
6 000	
72 000	

SUMMARY OF DEBIT AND CREDIT RULES

You have now seen each major type of account and how the debit and credit columns are used to increase or decrease those accounts. For asset, expense and dividend accounts, increases are recorded in the debit column and decreases are recorded in the credit column. For liability, equity and revenue accounts, increases are recorded in the credit column and decreases are recorded in the debit column. A summary of these rules is presented in Exhibit 3.3.

Type of account	Normal balance	Increase with a	Decrease with a
Asset	Debit	Debit	Credit
Liability	Credit	Credit	Debit
Equity	Credit	Credit	Debit
Revenue	Credit	Credit	Debit
Expense	Debit	Debit	Credit
Dividend	Debit	Debit	Credit

EXHIBIT 3.3 Summary of debit and credit rules

APPLY THIS **Review this content with the e-lecture**

LO4 RECORDING TRANSACTIONS IN THE ACCOUNTING SYSTEM

This section examines the actual process of recording accounting transactions in a dual-entry system. Accounting transactions are not recorded directly in T-accounts. Instead, accounting transactions are first recorded in a journal. Once recorded, the information is transferred or *posted* to a ledger. Information in the ledger is then summarised in a worksheet known as a trial balance. Financial statements are then prepared from the information in the trial balance.

THE JOURNAL

A **journal** is a chronological (in time order) record of transactions. Entries recorded in the journal are called *journal entries*. A business can have various types of journals in which it records transactions, but since the mechanics of all journals are the same, we will focus on the most basic of journals, the *general journal*. The general journal and an example journal entry take the form shown in Exhibit 3.4.

journal A chronological record of transactions.

General journal			
Date	**Account and explanation**	**Debit**	**Credit**
Date of transaction	Account(s) debited	Amount	
	Account(s) credited		Amount
	(Explanation of transaction)		

EXHIBIT 3.4 General journal form

At the far left of the journal is a column for the transaction date. To the right of the date is a column to record the names of the accounts affected by the transaction and an explanation. The account(s) receiving debit entries are listed first, followed by the account(s) receiving credit entries, which are slightly indented. To the right of the account names are debit and credit columns to record the monetary amounts of the transaction. As explained previously, the totals in the debit and credit columns should be the same for each transaction. When an accounting transaction is recorded in the general journal, we often say that the transaction has been *journalised*.

The general journal is useful in that it contains in one place a record in time order of all the accounting transactions of a business. However, the general journal is not very useful if a business is trying to determine the balance in a particular account. To get an account balance, one would have to find all journal entries affecting that account and then calculate a balance. To avoid such a time-consuming task, the information recorded in the general journal is transferred (posted) to a *ledger*.

THE LEDGER

A **ledger** is a collection of accounts and their balances. While most businesses have various types of ledgers containing different accounts, we will focus on the

ledger A collection of accounts and their balances.

most basic type of ledger, the *general ledger*. The general ledger is nothing more than a collection of all the T-accounts for a business, which means that the general ledger contains both the activity and balances of all the business' accounts.

Account balances in the general ledger are updated as follows. When an accounting transaction is recorded in the general journal, the amounts recorded in the debit and credit columns are transferred to the debit and credit columns of the respective T-accounts in the ledger. This process of copying or transferring the information from the journal to the ledger is called *posting* and results in up-to-date account balances.

THE TRIAL BALANCE

After accounting transactions are recorded in the journal and posted to the ledger, companies prepare a **trial balance**, which is a listing of all the accounts and their balances at a specific point in time. In a trial balance, all accounts in the ledger are listed in a column on the left. Asset accounts are usually listed first, followed by liability accounts, equity accounts and then revenue, expense and dividend accounts. Each account's balance from the ledger is listed in the appropriate debit or credit column. At the bottom of each column, a total is calculated. The debit and credit totals should be the same. A trial balance is shown in Exhibit 3.5.

trial balance A listing of accounts and their balances at a specific point in time.

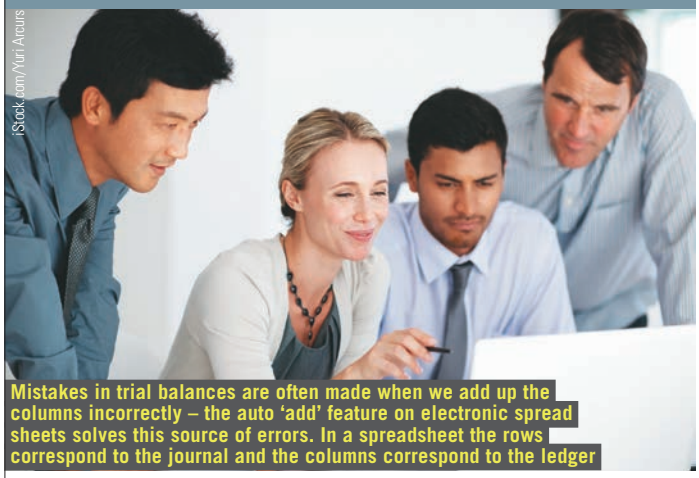
A listing of accounts and their balances at a specific point in time.		
	Debit	**Credit**
Asset account(s)	Amount	
Liability account(s)		Amount
Equity account(s)		Amount
Revenue account(s)		Amount
Expense account(s)	Amount	
Dividends	Amount	
Totals	Total debits	Total credits

EXHIBIT 3.5 Trial balance form

CSL ANALYSIS

Look at CSL's income statement in Appendix B. Which of the accounts would be increased with a credit entry? Would the remaining accounts be increased with a debit entry?

Analysis:
CSL's income statement lists twelve different accounts. Of those accounts, Sales Revenue and the other three accounts at the top of the income statement would be increased with a credit entry, as would Finance Income and Gain on Acquisition in the middle of the income statement. These seven accounts are revenue accounts. The other six accounts (Cost of sales, Finance costs and the four 'expenses') are expense accounts and are increased with a debit entry.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Mistakes in trial balances are often made when we add up the columns incorrectly – the auto 'add' feature on electronic spread sheets solves this source of errors. In a spreadsheet the rows correspond to the journal and the columns correspond to the ledger

A trial balance serves several functions. First, it proves that total debit balances equal total credit balances. If they are unequal, then the accounting equation is out of balance and a correction is needed. Second, it summarises in one place all accounts of an entity and their respective balances. Financial statements are then prepared from those balances. Finally, a trial balance may be helpful in making any necessary adjustments to account balances at the end of an accounting period. We will see this function in Chapter 4.

MAKING IT REAL

ACCOUNTING IN THE CLOUD

Although this text primarily discusses a manual accounting system, there are several popular computerised accounting information systems utilised by small businesses. Three of the most popular are QuickBooks, MYOB and Xero.

Accounting systems provide banking, general ledger, accounts payable, accounts receivable, payroll and inventory features and can keep track of income and expenses by customer, job and department. Many reports can be created by both systems to analyse business performance. They also provide security features to ensure only authorised users are accessing the business' accounting information.

Overall, such computerised systems are a great tool for businesses because they help ensure that the accounting information is captured and communicated effectively and efficiently, and with the cloud available on any device anywhere.

APPLY THIS

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LO5 COMPREHENSIVE EXAMPLE: JOURNAL ENTRIES TO FINANCIAL STATEMENTS

The following section uses the Video Memories transactions recorded earlier in the spreadsheet to demonstrate how to record transactions in the journal, post information to the ledger, prepare a trial balance and prepare financial statements. We will now assume the business entity is a company and will record the revenues, expenses and dividends rather than simply changes in retained earnings.

RECORDING TRANSACTIONS IN THE JOURNAL AND POSTING TO THE LEDGER

Video Memories entered into 10 transactions. A four-step process will be used to demonstrate how to properly record each transaction and post it to the ledger. First, the accounts affected by the transaction will be identified. Second, the relevant debit/credit rules for those accounts will be identified. Third, the transaction will be recorded in the journal. Fourth, the transaction will be posted to the ledger. This four-step process can be followed when recording and posting any accounting transaction.

Transaction #1

Video Memories issued shares for $15 000.

STEP 1 What accounts are affected and how?

Video Memories receives cash, so the Cash account increases. Shares are issued, so the Contributed Equity account also increases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account needs to be debited to increase it. Contributed equity is an equity account, so the Contributed Equity account need to be credited to increase it.

STEP 3 Record the journal entry

#1	Cash	15 000	
	Contributed Equity		15 000
	(Owners invest cash in business)		

Assets	=	Liabilities	+	Equity
+15 000				+15 000

STEP 4 Post the information to the ledger

Cash		Contributed Equity	
15 000			15 000
15 000			15 000

Transaction #2

Video Memories buys a $9000 camera and $1000 of supplies with $10 000 cash.

STEP 1 What accounts are affected and how?

Video Memories receives equipment and supplies, so both the Equipment and the Supplies accounts increase. Cash is paid, so cash decreases.

STEP 2 What debit and credit entries are required?

Equipment and supplies are assets, so the Equipment and Supplies accounts are debited to increase them. Cash is also an asset, so the Cash account is credited to decrease it.

STEP 3 Record the journal entry

#2	Equipment	9 000	
	Supplies	1 000	
	Cash		10 000
	(Purchase cameras and supplies)		

Assets	=	Liabilities	+	Equity
+9 000				
+1 000				
–10 000				

STEP 4 Post the information to the ledger

Cash		Supplies		Equipment	
15 000	10 000	1 000		9 000	
5 000		1 000		9 000	

Transaction #3

Video Memories videos a wedding, for which it receives $1500 cash.

STEP 1 What accounts are affected and how?

Cash has been received, so the Cash account increases. The increase in cash has resulted from a service being provided, so the Service Revenue account increases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account needs to be debited to increase it. Revenues increase equity, so the Service Revenue account needs to be credited to increase it.

STEP 3 Record the journal entry

#3	Cash	15000	
	Service Revenue		15000
	(Provide service to customer)		

Assets	=	Liabilities	+	Equity
+15000				+15000

STEP 4 Post the information to the ledger

Cash	
15000	10000
1500	
6500	

Service Revenue	
	1500
	1500

Transaction #4

Video Memories receives $2000 to video a reception at a future date.

STEP 1 What accounts are affected and how?

We receive cash, so the Cash account increases. Because Video Memories has not yet performed the required service, there is a new liability to the customer called Unearned revenue.

STEP 2 What debit and credit entries are required?

Cash is an asset, so debit the Cash account to increase it. Unearned revenue is a liability, so credit the Unearned Revenue account to increase it.

STEP 3 Record the journal entry

#4	Cash	2000	
	Unearned Revenue		2000
	(Cash received in advance of providing service to customer)		

Assets	=	Liabilities	+	Equity
+2000		+2000		

STEP 4 Post the information to the ledger

Cash	
15000	10000
1500	
2000	
8500	

Unearned Revenue	
	2000
	2000

Transaction #5

Video Memories pays $250 cash for advertising.

STEP 1 What accounts are affected and how?

Cash is paid, so the Cash account decreases. The decrease in cash results from Video Memories advertising its service, so Advertising Expense increases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account needs to be credited to decrease it. Expenses decrease equity, so debit the Advertising Expense account to increase it.

STEP 3 Record the journal entry

#5	Advertising Expense	250	
	Cash		250
	(Paid for advertising)		

Assets	=	Liabilities	+	Equity
–250				–250

STEP 4 Post the information to the ledger

Cash	
15000	10000
1500	250
2000	
8250	

Advertising Expense	
250	
250	

Transaction #6

Video Memories videos an event for $3500 and leaves an invoice with the customer.

STEP 1 What accounts are affected and how?

Video Memories performed a service for a customer, so its Service Revenue account increases. Payment has not been received from the customer, but they have promised to pay, so the Accounts Receivable account also increases.

STEP 2 What debit and credit entries are required?

Accounts receivable is an asset, so the Accounts Receivable account needs to be debited to increase it. Revenues increase equity, so the Service Revenue account needs to be credited to increase it.

STEP 3 Record the journal entry

#6	Accounts Receivable	3500	
	Service Revenue		3500
	(Provide service to customer on account)		

Assets	=	Liabilities	+	Equity
+3500				+3500

STEP 4 Post the information to the ledger

Accounts Receivable	
3500	
3500	

Service Revenue	
	1500
	3500
	5000

Transaction #7

Video Memories buys another camera by signing a $9000 note payable.

STEP 1 What accounts are affected and how?

The camera has been received, so the Equipment account increases. A note has been signed for payment, so the Notes Payable account increases.

STEP 2 What debit and credit entries are required?

Equipment is an asset, so the Equipment account needs to be debited to increase it. Notes payable is a liability, so the Notes Payable account needs to be credited to increase it.

STEP 3 Record the journal entry

#7	Equipment		9000	
	Notes Payable			9000
	(Purchase of a video camera with a note payable)			

Assets	=	Liabilities	+	Equity
+9000		+9000		

STEP 4 Post the information to the ledger

Equipment	
9000	
9000	
18000	

Notes Payable	
	9000
	9000

Transaction #8

Video Memories receives $3500 from a customer in payment of services provided in Transaction #6. (This is the exchange of one asset for another, not the earning of revenue: the revenue was earned in Transaction #6.)

STEP 1 What accounts are affected and how?

Cash has been received, so the Cash account increases. A receivable has been collected from a customer, so the Accounts Receivable account decreases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account is debited to increase it. Accounts receivable is also an asset account, so the Accounts Receivable account is credited to decrease it.

STEP 3 Record the journal entry

#8	Cash		3500	
	Accounts Receivable			3500
	(Receive payment from customer)			

Assets	=	Liabilities	+	Equity
–3500		+3500		

STEP 4 Post the information to the ledger

Cash	
15000	10000
1500	250
2000	
3500	
11750	

Accounts Receivable	
3500	3500
0	

Transaction #9

Video Memories pays $2000 in salaries to an employee.

STEP 1 What accounts are affected and how?

Cash is paid, so the Cash account decreases. This reduction in cash results from salaries paid to employees, so the Salaries Expense account increases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account needs to be credited to decrease it. Expenses decrease equity, so the Salaries Expense account needs to be debited to increase it.

STEP 3 Record the journal entry

#9	Salaries Expense		2000	
	Cash			2000
	(Pay salaries to employees)			

Assets	=	Liabilities	+	Equity
–2000				–2000

STEP 4 Post the information to the ledger

Cash	
15000	10000
1500	250
2000	2000
3500	
9750	

Salaries Expense	
2000	
2000	

Transaction #10

Video Memories pays $1500 in dividends to the owners.

STEP 1 What accounts are affected and how?

Cash is paid, so the Cash account decreases. The cash payment is a distribution of company assets to the owners, so the Dividends account increases.

STEP 2 What debit and credit entries are required?

Cash is an asset, so the Cash account needs to be credited to decrease it. Dividends decrease equity, so the Dividends account needs to be debited to increase it (or simply, if you debit Cash the other account must be credited).

STEP 3 Record the journal entry

#10	Dividends	1 500	
	Cash		1 500
	(Pay dividends to owners)		

Assets	=	Liabilities	+	Equity
–1 500				–1 500

STEP 4 Post the information to the ledger

Cash	
15 000	10 000
1 500	250
2 000	2 000
3 500	1 500
8 250	

Dividends	
1 500	
1 500	

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Not all transactions involve cash

Summary

After recording and posting the 10 transactions, Video Memories' complete journal and ledger would appear as follows:

General journal			
Transaction	**Account**	**Debit**	**Credit**
# 1	Cash	15 000	
	Contributed Equity		15 000
# 2	Equipment	9 000	
	Supplies	1 000	
	Cash		10 000
# 3	Cash	1 500	
	Service Revenue		1 500
# 4	Cash	2 000	
	Unearned Revenue		2 000
# 5	Advertising Expense	250	
	Cash		250
# 6	Accounts Receivable	3 500	
	Service Revenue		3 500
# 7	Equipment	9 000	
	Notes Payable		9 000
# 8	Cash	3 500	
	Accounts Receivable		3 500
# 9	Salaries Expense	2 000	
	Cash		2 000
#10	Dividends	1 500	
	Cash		1 500

Let's assume May was the first month of operation.

General ledger

Cash	
15 000	10 000
1 500	250
2 000	2 000
3 500	1 500
8 250	

Accounts Receivable	
3 500	3 500
0	

Supplies	
1 000	
1 000	

Equipment	
9 000	
9 000	
18 000	

Unearned Revenue	
	2 000
	2 000

Notes Payable	
	9 000
	9 000

Contributed Equity	
	15 000
	15 000

Service Revenue	
	1 500
	3 500
	5 000

Advertising Expense	
250	
250	

Salaries Expense	
2 000	
2 000	

Dividends	
1 500	
1 500	

Video Memories Trial balance 31 May		
	Debit	**Credit**
Cash	$8 250	
Supplies	1 000	
Equipment	18 000	
Unearned Revenue		$2 000
Notes Payable		9 000
Contributed Equity		15 000
Service Revenue		5 000
Advertising Expense	250	
Salaries Expense	2 000	
Dividends	1 500	
Total	$31 000	$31 000

PREPARING A TRIAL BALANCE

Once all transactions are recorded in the journal and posted to the ledger, a trial balance can be prepared. Recall that a trial balance is a listing of all accounts and their balances at a specific point in time. Therefore, it is a summary of the balances in the ledger. You can confirm that the trial balance includes only the balances from the general ledger by reviewing again Video Memories' ledger. As expected, total debit balances of $31 000 equal total credit balances of $31 000 in the trial balance.

PREPARING FINANCIAL STATEMENTS

Once the trial balance is completed, the final product of the accounting system can be prepared – the financial statements. As demonstrated in Chapter 1, the income statement must be prepared first, followed by the statement of changes in equity and then the balance sheet.

The income statement shows a company's revenues and expenses. Video Memories' 31 May trial balance contains only one revenue account and two expense accounts. Therefore, its income statement for the month of May would appear as follows:

Video Memories Income statement for the month ending 31 May		
Service Revenue		$5 000
Advertising Expense	$ 250	
Salaries Expense	2 000	
Total Expenses		2 250
Profit		$2 750

Getty Images/Chad Baker/Jason Reed/Ryan McVay

Accounting software automatically prepares financial statements once all journal entries are completed

With net profit calculated, Video Memories' retained earnings section of the statement of changes in equity can be prepared. Recall from Chapter 1 that the statement takes the beginning balance in retained earnings, adds profits and subtracts dividends to yield the current balance in Retained Earnings. Its 31 May trial balance shows no balance in beginning retained earnings because the business had just started. It also shows a $1500 balance in dividends. Combining these two balances with profits yields the following retained earnings section of the statement of changes in equity for the month of May:

Video Memories Statement of changes in equity (retained earnings section) for the month ending 31 May	
Retained earnings, 1 May	$ 0
+ Profits	2 750
– Dividends	1 500
Retained earnings, 31 May	$1 250

With retained earnings calculated, the company's balance sheet can be prepared. This shows a company's assets, liabilities and equity at a point in time. Video Memories' 31 May trial balance shows four asset accounts, two liability accounts and one equity account (Contributed Equity). These seven accounts, along with the amount of retained earnings from the May statement of changes in retained earnings, should be included on the balance sheet. Therefore, its 31 May balance sheet would appear as follows:

Video Memories Balance sheet at 31 May	
Cash	$8 250
Supplies	1 000
Equipment	18 000
Total assets	$27 250
Unearned Revenue	$2 000
Notes Payable	9 000
Contributed Equity	15 000
Retained Earnings	1 250
Total liabilities and equity	$27 250

APPLY THIS

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Chart of accounts

LO1

Compare Aerial Filming (drone business) in Chapter 1 to Video Memories in this chapter. Which account/s would be used for Aerial Filming that were not used for Video Memories?

2 Chart of accounts

LO1

Which of the following accounts are liabilities?

Accounts Receivable, Accounts Payable, Unearned Revenue, Service Revenue, Notes Payable, Notes Receivable, Loan, Retained Earnings, Wages Payable, Rent Expense.

3 Accounting transactions

LO1

The Howard company entered into the following economic events:

i hired a new researcher
ii billed customers for services performed
iii announced the signing of a contract that should produce $100 000 of new revenue
iv paid for insurance that will not be used until next year
v owned land that was rezoned allowing higher density accommodation to be built on it
vi purchased and paid for supplies on the internet that are never delivered.

REQUIRED

Indicate whether each economic event would be considered an accounting transaction.

4 Analyse transactions

LO2

Sue's Services entered into the following transactions during the month of August:

i received $6350 for services performed during August
ii purchased $1200 of supplies on account (on credit)
iii paid employee salaries of $3280 for the first week of August
iv paid $900 towards the previous purchase of supplies
v received $2460 for services performed in July.

REQUIRED

a Indicate whether each transaction increases, decreases or has no effect on assets, liabilities and equity. If a transaction affects equity, indicate whether the transaction affects revenues or expenses.

b Prepare journal entries for each transaction (omitting explanations).

5 T-accounts

LO3

Brancatisano reports the following asset and liability T-accounts:

Account #1		Account #2		Account #3	
1 000	6 000	8 400	3 250	4 280	3 600
4 000	3 000	2 120		1 660	1 120

REQUIRED

Determine the balance in each account and identify whether each account would most likely be an asset or a liability account.

6 Posting transactions

LO3

Greg's company records the following transactions during November:

Date	Account title	Debit	Credit
1 Nov.	Accounts Receivable	3 200	
	Service Revenue		3 200
6 Nov.	Cash	1 900	
	Accounts Receivable		1 900
15 Nov.	Telephone Expense	250	
	Cash		250
26 Nov.	Inventory	2 340	
	Accounts Payable		2 340

REQUIRED

Post the transactions to appropriate T-accounts and prepare a trial balance.

7 Recording transactions

LO2, 3, 5

Matthew received a payment from a customer and recorded the following journal entry:

Date	Account title	Debit	Credit
1 Mar.	Cash	1 000	
	Accounts Payable		1 000

REQUIRED

Is this entry correct or not? Explain your answer.

8 Trial balance

LO4

Hildebrand Consulting provides the following incomplete trial balance:

Hildebrand Consulting Trial Balance 30 September		
	Debit	Credit
(a)	$ 8 640	
Accounts Receivable	(b)	
Supplies	1 230	
Notes Payable		$3 000
Contributed Equity		10 000
Retained Earnings		(c)
Service Revenue		15 000
Salaries Expense	10 560	
Electricity Expense	2 340	
Totals	$33 333	$ (d)

REQUIRED

Determine the missing values at (a), (b), (c) and (d).

9 Prepare financial statements

LO4

Review the Hildebrand Consulting information in the preceding exercise.

REQUIRED

Using the given information and your answers for (a) to (d), prepare Hildebrand's income statement and statement of retained earnings for September and its balance sheet at 30 September.

10 Transaction analysis

LO2

The following transactions occurred in summer:

- **i** issued shares for cash
- **ii** purchased inventory on account
- **iii** received cash payment from client for services
- **iv** billed customers for services
- **v** paid rent in cash
- **vi** received a bill for electricity used
- **vii** bought equipment for cash
- **viii** received cash from customer previously billed in transaction (iv)
- **ix** paid electricity bill received in transaction (vi)
- **x** paid dividends at the end of the year.

REQUIRED

a Indicate the accounts that would be affected by each transaction.

b Indicate whether each transaction increases, decreases or has no effect on assets, liabilities and shareholders' equity.

11 Transaction analysis

LO2

The following are a few possible ways in which the accounting equation can be affected by a transaction:

	Assets	Liabilities	Equity
i	Increase	Increase	
ii	Decrease		Decrease
iii	Increase		Increase
iv	Increase/Decrease		
v	Decrease	Decrease	
vi		Increase	Decrease

REQUIRED

Describe at least two transactions that could result in each of the six scenarios listed.

12 Transaction analysis

LO2

Handywoman Services commenced business on 1 January and entered into the following transactions during January:

- **i** issued shares (contributed equity) for $300 000 cash
- **ii** purchased an old warehouse for $250 000 by borrowing from the bank with a mortgage
- **iii** purchased a van for $35 000 cash
- **iv** purchased supplies for $5000 on account
- **v** provided services of $15 325, receiving $12 200 in cash
- **vi** paid $1000 for advertising for January
- **vii** received payment of $3125 from customers in transaction (v)
- **viii** paid $4000 on the account from transaction (iv)
- **ix** paid dividends of $1000 to shareholders
- **x** paid employee salaries of $4000 for January
- **xi** billed customers $3500 for services provided during January
- **xii** paid $100 interest on the notes payable.

REQUIRED

a Show the effects of each transaction on the accounting equation by preparing a spreadsheet using the following column headings: Cash, Accounts Receivable, Supplies, Property and Equipment, Accounts Payable, Notes Payable, Contributed Equity, Retained Earnings.

b Calculate Handywoman's profit for the month of January.

13 Normal balances

LO3

The following is a list of possible accounts found in a trial balance:

- **i** Accounts Receivable
- **ii** Contributed Equity
- **iii** Cash
- **iv** Retained Earnings
- **v** Accounts Payable
- **vi** Salaries Expense
- **vii** Long-term Investments
- **viii** Service Revenue
- **ix** Dividends
- **x** Unearned Revenue.

REQUIRED

Indicate each account's normal balance and the effect of a debit and a credit to the account.

14 T-account mechanics

LO3

The general ledger for MRT Company contains the following accounts:

Cash	
2 000	3 000
8 000	(a)
4 000	

Notes Payable	
10 000	5 500
	18 100
	(b)

Salaries Expense	
13 500	
(c)	
15 900	

Accounts Payable	
23 850	43 500
(d)	12 775
	17 300

Service Revenue	
	(e)
	33 210
	88 690

Accounts Receivable	
(f)	3 500
2 500	9 570
7 660	

REQUIRED

Determine the missing values at (a) to (f).

15 Recording transactions

LO3, 4, 5

The following information pertains to Avon Challenge Rafting Company in January:

2nd Issued shares to investors for $25 000.
3rd Purchased $3500 of supplies on account.
4th Paid rent for January $1200.
9th Invoiced a customer $7000 for services provided.
16th Paid $1500 cash to supplier for the purchase on the 3rd.
24th Borrowed $10 000 from local bank.
26th Received payment for billing made on the 9th.

REQUIRED

a Prepare journal entries for each transaction (omitting explanations).

b Post the journal entries to their appropriate ledger (T) accounts and prepare a trial balance at 31 January.

16 Recording transactions

LO3, 4, 5

In the month of March, Peter Wells Consulting entered into the following transactions:

2nd Purchased a new building for $935 000.
3rd Paid $860 for January's electricity bill which was received in February.
11th Issued shares to investors in return for $50 000 cash.
13th Hired a new administrative assistant for an annual salary of $85 000.
19th Received payment in the amount of $750 for service billed in February.
23rd Sent an invoice (bill) to a customer for the week's work just completed $6800.
31st Paid dividends of $1000.

REQUIRED

Prepare all necessary journal entries for March (omitting explanations).

17 Accounting terms

LO1, 2, 3, 4

The following is a list of various terms and definitions associated with accounting information systems:

i Accounting information system
ii Accounting transaction
iii Account
iv Dual-entry accounting
v Chart of accounts
vi Debit
vii Credit
viii Journal
ix Ledger
x Trial balance.

REQUIRED

Match terms (i) to (x) with their matching definition in the list that follows:

a A listing containing a name and a numerical reference for all the accounts that a business entity uses to record accounting information.

b A recording system in which at least two accounts will be affected when recording every accounting transaction.

c The system that identifies economic events to be recorded, measures and records those events, and then processes the resulting information so that financial statements can be prepared.

d An accumulation of the activity and balance for a specific item.

e Any economic event that affects specific asset, liability, or equity accounts at the time of the event.

f The right side of an account.

g The left side of an account.

h A collection of accounts and their balances.

i A listing of all accounts and their balances at a specific point in time.

j A chronological record in which transactions are first recorded.

18 Errors in recording transactions

LO4, 5

Sarah's Scientists recently hired a new accountant, who made the following errors:

i recorded a $200 cash purchase of inventory as a debit to inventory and a credit to accounts payable
ii failed to record the payment of $300 for advertising for the period
iii debited supplies for $150 and credited cash for invoice amount of $510
iv recorded $100 cash received for services but forgot to record the service revenue.

REQUIRED

a Prepare each entry that *should* have been made.

b Which of the four errors would result in the trial balance being out of balance?

19 Posting information

LO4, 5

The following is the general journal of Chan for the month of November:

Date	Account Titles	Debit	Credit
1 Nov.	Cash	$15 000	
	Contributed Equity		$15 000
8	Equipment	5 000	
	Accounts Payable		3 000
	Cash		2 000
11	Accounts Receivable	7 500	
	Service Revenue		7 500
18	Accounts Payable	1 700	
	Cash		1 700
21	Cash	5 000	
	Notes Payable		5 000
24	Dividends	1 500	
	Cash		1 500
25	Cash	3 500	
	Accounts Receivable		3 500

REQUIRED

a Post the journal entries to the appropriate T-accounts, assuming Chan starts its business in November.

b Prepare a trial balance for the month ending 30 November.

PROBLEMS

20 Recording transactions

LO3, 4, 5

On 1 November, Geoff Howard started a small amusement park. The park experienced the following transactions during the first month of operations:

1st Shareholders contributed $350 000 in exchange for shares.
2nd Hired six employees to staff the park.
3rd Purchased go-carts for $87 500 on account (on credit).
3rd Borrowed $90 000 from the bank.
3rd Purchased arcade games for $72 000.
4th Paid $3000 to advertise the opening on various websites.
7th Purchased 'bumper-boats' for $35 250 on account.
10th Billed Le Ma $3300 for her son's birthday party on the 10th.
11th Received cash of $6600 for entry fees into the park.
15th Paid $45 000 towards the go-cart bill (purchase on 3rd).
20th Received $10 200 for entry fees into the park.
25th Received full payment from Le Ma.
28th Paid electricity, $7680.
30th Paid $900 interest on loan.

REQUIRED

Prepare journal entries for each transaction, including explanations.

21 Transaction analysis, journal, ledger, trial balance, financial statements

LO2, 3, 4

Megan and Sinclair was established on 1 January and entered into the following transactions during its first month of business:

i issued shares of $50 000 in exchange for cash
ii purchased equipment for $24 000 cash
iii purchased supplies of $6000 on account
iv received $235 bill for January advertising
v billed customers $14 680 for services
vi paid salaries of $8015
vii received payment of $6023 from customers for bills in transaction (v)
viii received $5000 cash for services to be performed in March
ix paid $6000 to suppliers for purchase in transaction (iii)
x received bill for January electricity, $975
xi paid dividends of $900 to shareholders
xii borrowed $100 000 from bank on a mortgage
xiii paid $400 interest on the bank loan.

REQUIRED

a Show the effects of each transaction on the accounting equation by preparing a spreadsheet using the following column headings: Cash, Accounts receivable, Supplies, Property and equipment, Accounts payable, Unearned revenue, Mortgage, Contributed equity, and Retained earnings.

b Record the transactions in the journal.

c Post to the ledger (T) accounts.

d Extract a trial balance.

e Prepare an income statement for the month of January.

f Prepare the retained earnings section of a statement of changes in equity for the month of January.

g Prepare a balance sheet at 31 January.

22 Recording transactions

LO3, 4, 5

Madden Consulting was established on 1 March, and during March it entered into the following transactions:

1st Issued $10 000 shares in exchange for cash.
3rd Purchased $300 of supplies on account.
7th Prepaid $1500 total for April, May and June rent.
8th Paid $175 towards the 3 March purchase of supplies.
11th Billed customers $5780 for services rendered.
12th Paid $700 for March advertising.
25th Received $4500 from customers billed on 11 March.
28th Paid $200 in dividends to shareholders.
29th Paid $1200 for March salaries.
29th Paid $760 for March water usage.

REQUIRED

a Prepare journal entries for each transaction (omitting explanations).

b Post the journal to the appropriate ledger (T-accounts).

c Prepare a trial balance at 31 March.

d Prepare Madden's income statement for the month of March

e Prepare the retained earnings section of the statement of changes in equity for the month of March.

f Prepare Madden's balance sheet at the end of March.

23 Recording transactions

LO3, 4, 5

The trial balance for Geoff Howard Limited at 31 January is shown as follows:

Geoff Howard Limited Trial balance 31 January		
	Debit	**Credit**
Cash	$ 5600	
Accounts Receivable	12890	
Supplies	9235	
Prepaid Rent	1500	
Property, Plant & Equipment	30500	
Accounts Payable		$7625
Unearned Revenue		6400
Notes Payable		15000
Contributed Equity		25000
Sales Revenue		9650
Salaries Expense	2300	
Electricity Expense	650	
Dividends	1000	
Totals	$63675	$63675

During February the following transactions occurred:

1st Billed customers for orders shipped, $2500.
2nd Paid $150 interest on note from bank.
4th Received payment from customers billed in January, $4500.
6th Bought office supplies on account, $560.
7th Completed an order for which payment had previously been received in January, $3500.
8th Paid creditors for purchase of supplies in January, $1895.
24th Paid dividends to shareholders, $1000.
28th Paid salaries of $2100; paid electricity of $775.

REQUIRED

a Prepare opening T-accounts for the month of February.
b Prepare journal entries for transactions in the month of February.
c Post journal entries to appropriate T-accounts.
d Prepare a trial balance at 28 February.

CASES

24 Read and interpret financial statements

LO3, 4, 5

Access Woolworth's (or another company as instructed) latest annual report (e.g. conduct an internet search of 'Woolworth annual report')

REQUIRED

a Identify the dollar change in the following subtotals in the balance sheet: total current assets, total non-current assets, total current liabilities, total non-current liabilities and total shareholders' equity.
b Identify whether the accounting system would debit or credit each subtotal to achieve the change. Treat each subtotal description as if it were an account (e.g. an increase of $XYZ in total current assets would be accomplished with a debit to that account).
c Prepare one journal entry that records the changes in all subtotals. Again, use the subtotal descriptions as if they were actual accounts.
d Does the answer to question c balance? Should it? Explain why or why not.

25 Ethics in accounting

LO3, 4, 5

You are a junior accountant at a large construction company. Your company is under tremendous pressure to meet earnings targets so that the company share price can continue to grow. For the current year, it appears that the company will miss its earnings targets simply because heavy rain prevented work being carried out towards the end of the financial year. Your boss, who has been a mentor to you, asks you to prepare a journal entry to record $280 million of revenue for work that will be done in the first two weeks of the next financial year. He provides a fabricated invoice as documentation. He states that without the rain the work would have been completed before year end and it is extra work the business will be doing in the next financial year anyway. He asks you to do this as a personal favour to him.

REQUIRED

a Identify the ethical issues associated with this scenario.
b What factors other than accounting are at play here?
c What are your alternatives?

26 Written communication

LO3, 4

As the only accountant on the company board, explain to your fellow directors why the balance sheet may not show assets at current market value.

27 Written communication

LO3, 4

Since you are enrolled in an introductory accounting class, a friend asks you the following: 'I've never understood debits and credits. All I know is that debit means bad and credit means good'.

REQUIRED

Write a brief explanation of the terms debit and credit and how they are used in an accounting information system. Explain why debit and credit cannot mean good and/or bad.

4

Accrual accounting and adjusting entries

Chapter 3 introduced the first three steps in the accounting cycle: recording transactions, posting information to the ledger and preparing a trial balance from which financial statements are prepared. This chapter explores the remaining steps in the cycle.

This includes the adjusting process that leads to accrual-based financial statements and the closing process that prepares the accounting system for the next period. Both the adjusting and closing processes occur at the end of each accounting period.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Explain how profit is measured and reported under the accrual and cash bases of accounting.
2. Identify the four major circumstances in which adjusting journal entries are necessary.
3. Record and post adjusting journal entries as well as prepare an adjusted trial balance and financial statements.
4. Understand the purpose of the closing process and prepare closing entries.
5. Describe the steps of the accounting cycle.

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LO1 ACCRUAL AND CASH BASES OF ACCOUNTING

One of the main functions of the accounting information system is to record the revenues and expenses that a business generates. In accounting, there are two possible bases for recording revenues and expenses: the cash basis and the accrual basis. The main difference between the two is the timing of when revenues and expenses are recorded.

Check out the video summary for Chapter 4

The **cash basis of accounting** records revenues when cash is received and records expenses when cash is paid. The best example of a cash basis accounting system is your personal bank account. Revenues such as wages are recorded only when you are paid. Expenses such as paying your credit card are recorded only when you transfer the money.

cash basis of accounting Records revenues when cash is received and records expenses when cash is paid.

In contrast, the **accrual basis of accounting** records revenues when they are earned and records expenses when they are incurred. This is an application of the revenue recognition and matching principles discussed in Chapter 1. In an accrual accounting system, revenues such as your wages would be recorded when you earn them, regardless of when payment is received. Likewise, expenses such as event tickets are recorded when you attend the event, regardless of when payment is made. A summary of each basis is as follows:

accrual basis of accounting Records revenues when they are earned and records expenses when they are incurred.

	Cash basis	Accrual basis
Record revenues when:	Cash is received	Revenue is earned
Record expenses when:	Cash is paid	Expense is incurred

To illustrate the difference between the cash and accrual bases, suppose that a neighbour leaves town for the months of December and January and asks you to collect her mail and newspapers. Before she leaves, she pays you $100. Suppose further that you agree to pay a friend $40 to do the work, but you pay him at the end of January after the work is completed. Income for December

Alamy Stock Photo/Sam Stephenson

When a retailer like Bunnings sells a gift card, it records an increase in cash and an increase in a liability. It records revenue (and reduces the liability) when the customer uses the card

and January under each basis would be calculated as outlined in the following.

Under the cash basis, December revenues are $100 because you received $100 during the month. Likewise, December expenses are $0 because you paid nothing during the month. As a result, December profit is $100. For January, you received no money but paid your friend $40, so revenues are $0, and expenses are $40. Therefore, January's loss is $40.

Under the accrual basis, revenue for December is $50 because you earned half of the $100 during December. And, even though you don't pay your friend until January, he provided half of the agreed labour in December, so December expenses are $20. As a result, December profit is $30. Because the exact same circumstances occur in January, profit for January is also $30.

	Cash basis			Accrual basis		
	December	January	Total	December	January	Total
Revenues	$100	$ 0	$100	$50	$50	$100
– Expense	0	40	40	20	20	40
Profit (Loss)	$100	$(40)	$ 60	$30	$30	$ 60

The comparative income statements (or statements of comprehensive income) show that although each basis results in the same $60 of cumulative profit, monthly profit or loss varies considerably. The cash-based statement reports that you generated a $100 profit one month and a $40 loss the next, while the accrual-based statement reports that you generated $30 in profits each month. Given that your activities were exactly the same each month, accrual-based income of $30 each month makes more sense than a $100 profit and a $40 loss. Even though both bases result in the same total $60 profit over the two months, the accrual basis provides a better representation of income for each month. As a result, the accrual basis is required by Generally Accepted Accounting Principles (GAAP) and specifically by the Accounting Standard AASB 15 Revenue from Contracts with Customers.

REPORTING ACCRUAL- AND CASH-BASED INCOME

Because GAAP require the accrual basis, income statements report accrual-based profits or losses. However, cash basis information is also useful in understanding the financial condition of a company. A company that generates accrual income but never generates cash is a company that will soon fail. As a result, cash-based income is reported on the cash from operations section of a cash flow statement. Recall from Chapter 1 that the operating activities section calculates and reports the cash generated from operating the business. Cash generated from operations is the same as cash-based income.

CSL ANALYSIS

In Appendix B, in CSL's Notes to the Financial Statements, look at Note 2: Revenue and Expenses. How can you tell from this note that CSL uses the accrual basis of accounting?

Analysis:

Under the heading 'Recognition and measurement of revenue' the note states: 'The Group recognises revenue when the amount of revenue can be reliably measured and it is probable that the future economic benefits will flow to the group'. Further, 'Sales are recognised when the significant risks and rewards of ownership of the goods have passed to the buyer'. More specifically, 'Finance revenue: Income from cash deposits is recognised as it accrues'.[1]

To illustrate, consider the reconciliation of profits after tax to cash flow from operations for CSL. It uses the direct method of reporting operating cash flows in the cash flow statement (see the CSL 2017 Annual Report in Appendix B) while in the reconciliation the difference between *net cash from operating activities* (cash profits of $1246.6 million) and *profits after income tax* (accrual profits of $1337.4 million) is almost $91 million. In the previous year the figure was almost $64 million. Cash basis income is less than accrual basis income due primarily to increases in inventory of $389 million and increases in net tax assets (unimportant at this stage) of $111 million. The reconciliation of Profits After Tax to Cash Flow from Operations in CSL's 2017 Annual Report (see Appendix B or download full report online) also shows depreciation of $279 million and increases trade and other payables of $154 million, offsetting the increases in inventory and tax assets. There are a number of other smaller items that contribute to cash from operations being less than profit after tax.

LO2 ADJUSTING JOURNAL ENTRIES

To ensure that revenues and expenses are properly recorded under an accrual basis, accounting information systems use **adjusting journal entries**. These are entries made in the general journal to record revenues that have been earned but not recorded, and expenses that have been incurred but not recorded (and the corresponding updating of assets and liabilities). The process of recording and posting adjusting entries is the fourth step in the accounting cycle and occurs at the end of each accounting period after the trial balance is prepared. After adjusting entries are journalised and posted, an 'adjusted' trial balance is then prepared, from which financial statements are generated.

adjusting journal entries Entries made in the general journal to record revenues that have been earned but not recorded and expenses that have been incurred but not recorded.

While adjusting entries can vary significantly across companies, they all arise because the exchange of cash does not always coincide with the earning of a revenue or incurrence of an expense. For example, sometimes cash is received *before* a revenue is earned while at other times cash is received *after* a revenue is earned. Likewise, sometimes cash is paid *before* an expense is incurred while at other times cash is paid *after* an expense is incurred. These four basic scenarios are the reasons that adjusting journal entries are necessary. Each scenario is listed in the following table and is discussed further in the following sections.

Classification of scenario	Adjusting entry
1 Cash is received before revenue. (An insurance company receives the cash at the beginning of the policy)	Deferred revenue is earned
2 Cash is received after revenue. (The phone company receives cash after the customer has made calls and accessed the internet)	Accrued revenue is earned
3 Cash is paid before expense. (The tenant pays rent to the property owner for the coming month's rent)	Deferred expense is incurred
4 Cash is paid after expense. (Electricity may be used for three months before the bill is received and then paid)	Accrued expense is incurred

SCENARIO 1: DEFERRED REVENUE

Companies sometimes receive cash before they earn the revenue; for example, airlines receive your money before you fly. When a company receives cash before it provides the service, it has a *deferred* revenue (sometimes known as revenue received in advance or unearned revenue). The term *deferred* is used because at the time of cash receipt, the company has not yet provided the promised service and therefore cannot record a revenue in its accounting system. Instead, it must record a liability. Recording the revenue must be deferred until the revenue is earned.

Subscription revenue

To illustrate a deferred revenue adjustment, suppose that a company sells 12-month subscriptions to its monthly magazine. On 1 October, the company receives a total of $120 for 12 subscriptions. To record this transaction, the company would record the following entry in its general journal:

1 Oct.	Cash		120		
	Unearned Subscription Revenue				120
	(To record cash received for future magazines)				
	Assets	=	Liabilities	+	Equity
	+120		+120		

This entry first increases the Cash account by the amount received. And, because the company now has an obligation to its customers to deliver the magazines, the entry also increases a liability account called Unearned Subscription Revenue. As a result, both assets and liabilities are increasing. The entry would then be posted to the relevant T-accounts as follows:

Cash		Unearned Subscription Revenue		Subscription Revenue	
120			120		0
120			120		0

Suppose further, that the company prepares financial statements at the end of each month. As of 31 October, the company has provided one month of magazines and has therefore earned one month of revenue, or $10 ($120/12 months). Because the accounting system does not yet reflect this earned revenue, the following adjusting journal entry should be made on 31 October:

31 Oct.	Unearned Subscription Revenue		10		
	Subscription Revenue				10
	(To record revenue earned during October)				
	Assets	=	Liabilities	+	Equity
			–10		+10

This entry increases the Subscription Revenue account by the amount earned during the month and decreases the liability account Unearned Subscription Revenue by the same amount. As a result, liabilities are decreasing and equity is increasing. The entry would be posted to the relevant T-accounts as follows:

Cash		Unearned Subscription Revenue		Subscription Revenue	
120			120		0
		10			10
120			110		10

After posting, the Subscription Revenue T-account reflects the $10 earned in the current period while the Unearned Subscription Revenue T-account reflects the remaining $110 to be earned over the next 11 months. These two accounts have been *adjusted* so that they properly reflect revenues earned during October and liabilities owed on 31 October. The Cash account is not affected by the adjusting journal entry. Cash was exchanged and recorded on 1 October.

General rule

When a company receives cash before it provides a service, the company should always increase a liability account for the amount received. As the company provides the service, the liability account is adjusted down (decreased) and the related revenue account is adjusted up (increased). So, the adjusting journal entry for this scenario should always be a reduction to a liability account and an increase to a revenue account, as shown in Exhibit 4.1.

Exception to the general rule

What if the money received was, for some reason, credited to Revenue rather than the liability Unearned Revenue? The necessary adjustment at the end of the period would need to be totally different, but the balances after adjustment in both the revenue account and the liability account would be exactly the same as above.

To illustrate the same situation, accept that the credit was made to the revenue account (this may not be the desirable way to record the transaction, however it is important to your understanding of adjusting entries). To record this transaction (the other way), the company would record the following entry in its general journal:

1 Oct.	Cash	120	
	Subscription Revenue		120
	(To record cash received for future magazines)		

Assets	=	Liabilities	+	Equity
+120		+120		

This entry first increases the Cash account by the amount received (as before). Because the company recorded it as a revenue (it may have believed the revenue would be soon earned), the entry has also increased the revenue account called Subscription Revenue. As a result, both Assets and Revenue (Equity) are increasing. The entry would then be posted to the relevant T-accounts as follows:

Cash		Unearned Subscription Revenue		Subscription Revenue	
120					120
120					120

The company prepares financial statements at the end of each month. As of 31 October, the company has provided only one magazine and has therefore earned only 1/12 of the revenue, or $10 ($120/12 months), as before. Because the accounting system reflects all the revenue being earned in the month of October, the revenue needs to be decreased and the liability increased, and the following adjusting journal entry should be made on 31 October:

31 Oct.	Subscription Revenue	110	
	Unearned Subscription Revenue		110
	(To record revenue earned during October)		

Assets	=	Liabilities	+	Equity
		+110		–110

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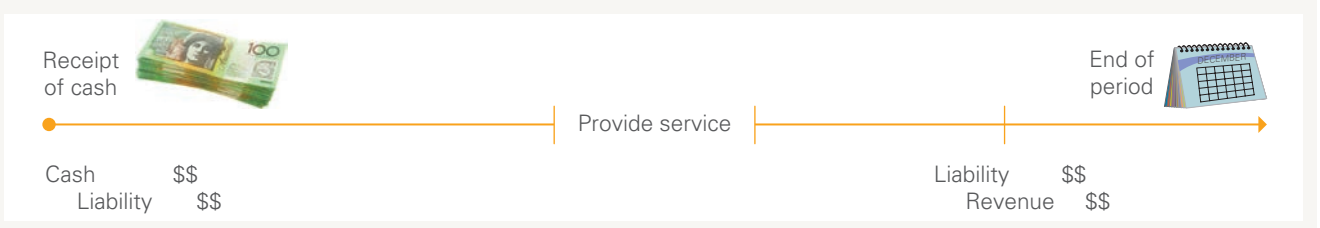

EXHIBIT 4.1 Entries in a deferred revenue scenario

This entry decreases the Subscription Revenue account by the amount not yet earned ($110) and increases the liability account Unearned Subscription Revenue by the same amount. As a result, liabilities are increasing and revenue is decreasing. The entry would be posted to the relevant T-accounts as follows:

Cash		Unearned Subscription Revenue		Subscription Revenue	
120					120
			110	110	
120			110		10

After posting, the Subscription Revenue T-account reflects the $10 earned in the current period while the Unearned Subscription Revenue T-account reflects the remaining $110 to be earned in the future (or to be returned to the customer if the magazines are not provided). These two accounts have been *adjusted* so that they properly reflect revenues earned during October and liabilities owed on 31 October. Again, the Cash account is not affected by the adjusting journal entry. Note that we end up with the same balances in the accounts regardless of how the transaction was originally recorded, the adjusting entries 'fix them up'.

SCENARIO 2: ACCRUED REVENUE

Companies often provide a service and then collect the cash. When a company earns a revenue before it receives cash, it has an *accrued revenue*. The term 'accrue' means to accumulate or increase. An accrued revenue is another name for a receivable.

Service revenue

To illustrate an accrued revenue adjustment, suppose that an accounting firm agrees to provide a service to a client for a $1000 fee. The firm completes its work on 23 September, bills the client on 10 October and receives payment on 21 October.

Suppose further that the accounting firm prepares its own financial statements at the end of each month, which in this case is 30 September.

Because the accrual basis requires that revenues be recorded in the period in which they are earned, the accounting firm must record the $1000 of revenue on 30 September with the following adjusting journal entry:

30 Sept.	Accounts Receivable	1 000	
	Service Revenue		1 000
	(To record revenue earned during September)		

Assets	=	Liabilities	+	Equity
+1 000				+1 000

The entry increases the Accounts Receivable account for the amount that the client owes the firm and increases the Service Revenue account for the amount that the firm has earned. As a result, both assets and equity are increasing. The preceding entry would be posted to the relevant T-accounts as follows:

Cash		Accounts Receivable		Service Revenue	
0		1 000			1 000
0		1 000			1 000

After posting, the Service Revenue T-account reflects the $1000 earned in the current period while the Accounts Receivable T-account reflects the $1000 of expected cash receipts from the client. These two accounts have been adjusted so that they properly reflect revenues earned during September and receivables held on 30 September.

MAKING IT REAL

GIFT CARDS

Although gift cards have existed for many years, their ever-growing popularity in recent times is causing some accounting issues for retailers due to the need to estimate when a customer's card is 'no longer expected to be redeemed' (i.e. when the revenue can be recognised because the card is unlikely to be used to purchase goods).

Many people would assume that retailers record revenue with each gift card purchased. However, the transfer of goods (inventory) is required for revenue to be recognised. Therefore, gift card sales represent a deferred revenue, which is a liability. Revenue is not generated until the gift card is redeemed. For retail companies like Bunnings (Wesfarmers), it states in its Notes to the Financial Statements in Recognition and Measurement of Revenue:

> Revenue from the sale of gift cards is recognised when the card is redeemed and the customers purchase goods by using the card, or when the customer card is no longer expected to be redeemed. At 30 June 2017, $217 million of revenue is deferred in relation to gift cards.[2]

Gift cards are not only good when you have no idea what to buy someone, but they are also great for the company issuing them

When the customer pays cash on 21 October, the following entry is made:

21 Sept.	Cash	1 000	
	Accounts Receivable		1 000
	(To record receipt of cash)		

Assets	=	Liabilities	+	Equity
+1 000				
–1 000				

This entry increases the Cash account and decreases the Accounts Receivable account for the amount collected. As a result, although specific asset accounts are changing, total assets remain unchanged. No revenue is recorded because it was recorded in the prior period when it was earned. The entry would be posted to the relevant T-accounts as follows:

Cash		Accounts Receivable	
0		1 000	
1 000			1 000
1 000		0	

General rule

When a company earns a revenue before it receives cash, the company should increase a receivable account (asset) and a revenue account for the amount earned. In other words, the receivable account should be adjusted up (increased) and the revenue account should also be adjusted up (increased). When the company collects the receivable, the receivable account is decreased and the cash account is increased. So, the adjusting journal entry for this scenario will be an increase to an asset account and an increase to a revenue account, as shown in Exhibit 4.2.

SCENARIO 3: DEFERRED EXPENSE

Companies often pay cash before they incur an expense. You need look no further than your own personal expenses to find numerous examples of payments made before you use the service. One example is rent. You pay rent for a period (possibly a month or only a week) in advance and are then able to occupy the accommodation.

When a company pays for a resource before it uses or consumes it, the company has a *deferred expense*. We use the term *deferred* because at the time of cash payment for the resource, the company has yet to use or consume the resource it is acquiring and therefore cannot record an expense in the accounting system. Instead, it records an asset. Recording of the expense must be *deferred* until the expense is incurred. You should note that a *deferred expense* is nothing more than an asset – a resource to be used.

Insurance expense

To illustrate a deferred expense adjustment, suppose that on 1 March, a company purchases a 12-month insurance policy for $3600. To record this transaction, the company would record the following entry in its general journal:

1 Mar.	Prepaid Insurance	3 600	
	Cash		3 600
	(To record purchase of insurance)		

Assets	=	Liabilities	+	Equity
+3 600				
–3 600				

This entry increases the asset account Prepaid Insurance to reflect the amount of insurance bought and decreases the Cash account for the same. Since both of these accounts are assets, this entry does not change total assets. The entry would then be posted to the relevant T-accounts as follows. For illustration purposes, assume that the Cash account has a $10 000 balance prior to the entry:

Cash		Prepaid Insurance		Insurance Expense	
10 000				0	
	3 600	3 600			
6 400		3 600		0	

Suppose further that the company prepares financial statements at the end of April. As of 30 April, the company has been covered for two months and has therefore

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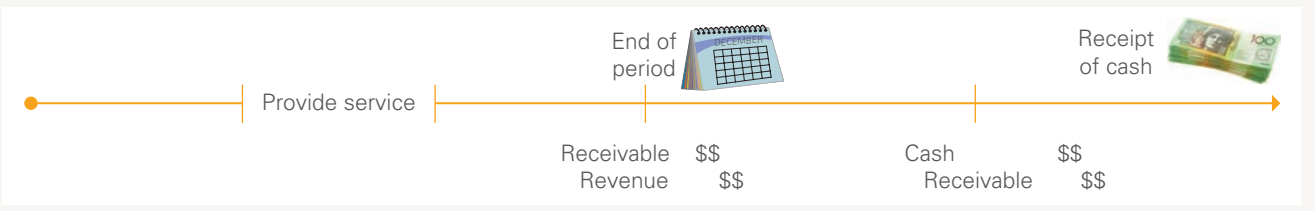

EXHIBIT 4.2 Entries in an accrued revenue scenario

consumed two months of insurance, or $600 ([$3600 ÷ 12] x 2 months). Because the accounting system does not yet reflect this expense, the following adjusting journal entry should be made on 30 April:

30 Apr.	Insurance Expense	600	
	Prepaid Insurance		600
	(To record expense incurred during March)		

Assets	=	Liabilities	+	Equity
–600				–600

This entry increases the Insurance Expense account by the amount consumed during the two months and decreases the asset account Prepaid Insurance by the same amount. As a result, both assets and equity are decreasing. The entry would be posted to the relevant T-accounts as follows:

Cash	
10 000	
	3600
6400	

Prepaid Insurance	
3600	
	600
3000	

Insurance Expense	
0	
600	
600	

After posting, the Insurance Expense T-account reflects the $600 of insurance that was consumed in the current period while the Prepaid Insurance T-account reflects the remaining $3000 of insurance to be consumed over the next 10 months. These two accounts have been adjusted so that they properly reflect expenses incurred during March and April and unexpired assets on 30 April. The Cash account is not affected by the adjusting journal entry. Cash was exchanged and recorded on 1 March.

If the purchase of insurance was originally (incorrectly) recorded as an expense, then the adjusting entry would be needed to increase the asset Prepaid Insurance by $3000 and reduce the expense Insurance Expense by $3000. Such an adjustment would result in the same outcome, with Insurance Expense for the months of March and April of $600 and an asset Prepaid Insurance at the end of April of $3000. Again, no cash is involved in the adjustment.

Depreciation expense

Another example of an expense where cash is paid before the expense is incurred, is depreciation. Depreciation is the process of spreading over their useful lives the cost of non-current assets such as equipment and buildings. For example, suppose that on 1 July, a company purchases film studio equipment for $40 000. This transaction would be recorded into the accounting system as follows:

1 July	Equipment	40 000	
	Cash		40 000
	(To record purchase of film studio equipment)		

Assets	=	Liabilities	+	Equity
–40 000				
+40 000				

This entry increases the asset account Equipment to reflect the cost of the equipment and decreases the Cash account for the same. Since both of these accounts are assets, this entry does not change total assets. The entry would then be posted to the relevant T-accounts as follows. We will assume that the Cash account has a $70 000 balance prior to the entry:

Cash	
70 000	
	40 000
30 000	

Equipment	
40 000	
40 000	

Depreciation Expense	
0	
0	

Suppose further that the company prepares financial statements at the end of the financial year, 30 June the following year. As of 30 June, the company has used the equipment for one year and should therefore record some amount of expense associated with the use of the studio equipment. If we assume for simplicity that the amount of expense to be recognised in the financial year is $10 000, the following adjusting journal entry should be made on 30 June:

30 June	Depreciation Expense	10 000	
	Accumulated Depreciation		10 000
	(To record expense incurred the financial year)		

Assets	=	Liabilities	+	Equity
–10 000				–10 000

This entry increases the Depreciation Expense account by the amount of expense allocated to the current year. However, instead of decreasing the Equipment account directly, the entry increases Accumulated Depreciation. We discuss accumulated depreciation in detail in Chapter 8, but for now you should know that the account is a contra-asset account that accumulates depreciation expense to date and is subtracted from the Equipment account to yield the net balance of the asset. As a result of the entry, both assets and equity are decreasing. Equity is decreasing because the company recorded an expense. Assets are decreasing because the net balance of Equipment and Accumulated Depreciation at the end of June is now $30 000 ($40 000 – $10 000). The entry would be posted to the relevant T-accounts as follows:

Equipment		Accumulated Depreciation		Depreciation Expense	
40 000			0	0	0
			10 000	10 000	
40 000			10 000	10 000	

The Depreciation Expense and Accumulated Depreciation accounts have been *adjusted* so that they properly reflect the $10 000 of expenses incurred during the financial year and the $30 000 of net unexpired balance of Equipment on 30 June.

General rule

When a company pays cash before it incurs an expense, the company should always increase an asset account for the amount paid. As the company consumes the asset, the asset account is adjusted down (decreased) and the related expense account is adjusted up (increased). Depending on the type of asset, either the actual asset account will be decreased or a related contra-asset account will be increased (which is a decrease in total assets). So, the adjusting journal entry for this scenario will always be a reduction to an asset account and an increase to an expense account, as shown in Exhibit 4.3.

SCENARIO 4: ACCRUED EXPENSE

Companies often incur expenses and pay for them later. A good example is employee salaries. Most companies pay their employees after the employees have provided labour for the company. When this occurs, the company has an *accrued expense*. An accrued expense is another name for a liability.

Salaries expense

To illustrate an accrued expense adjustment, suppose that a company's daily payroll is $1000. The company pays its employees via direct deposit every Saturday for the work the employees have provided to the end of Friday. Suppose further that the company prepares its financial statements on 30 November, which is a Friday.

Because the accrual basis requires that expenses be recorded in the period in which they are incurred, the company must record the $5000 of expense on 30 November with the following adjusting journal entry:

30 Nov.	Salaries Expense	5 000	
	Salaries Payable		5 000
	(To record salaries incurred during April)		

Assets	=	Liabilities	+	Equity
		+5 000		–5 000

The preceding entry increases the Salaries Expense account for the $5000 of salaries incurred for the week and increases the Salaries Payable account for the same since it owes the employees those salaries. As a result, liabilities are increasing and equity is decreasing. The preceding entry would be posted to the relevant T-accounts as follows:

Cash		Salary Payable		Salaries Expense	
8 000					
			5 000	5 000	
8 000			5 000	5 000	

After posting, the Salaries Expense T-account reflects the $5000 incurred in the current period while the Salaries Payable T-account reflects the $5000 owed to employees on 30 November. These two accounts have been adjusted so that they properly reflect expenses incurred during November and the payable owed on 30 November.

The Cash account is not affected by the adjusting journal entry. Cash, which has an $8000 balance for illustrative purposes, will be paid on Saturday 1 December. When the company pays its employees, the following entry would be made:

1 Dec.	Salaries Payable	5 000	
	Cash		5 000
	(To record payment of cash)		

Assets	=	Liabilities	+	Equity
–5 000		–5 000		

The entry decreases the Cash account for the $5000 paid to employees and decreases the Salaries Payable account by the same $5000. No expense is recorded because it was recorded in the prior period when the expense was incurred. As a result, both assets and liabilities are decreasing. The entry would be posted to the relevant T-accounts as follows:

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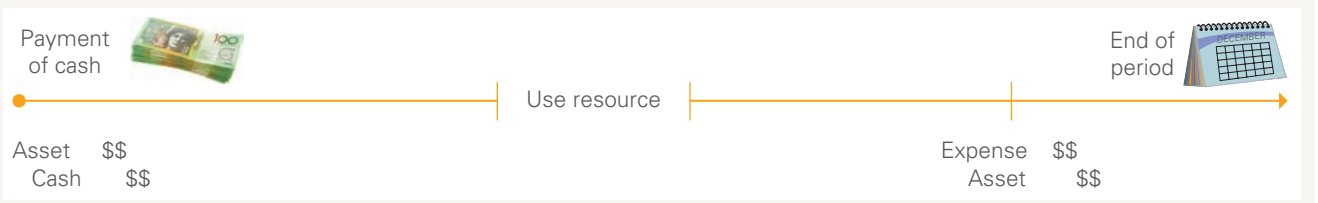

EXHIBIT 4.3 Entries for a deferred expense scenario

Cash	
8 000	
	5 000
3 000	

Salaries Payable	
	5 000
5 000	
	0

Interest expense

Interest is another example of incurring an expense before cash is paid. For example, suppose that a company borrows $100 000 on 1 November. The annual interest rate on the loan is 6 per cent and interest is payable on the first day of each month. Suppose further that the company prepares its financial statements on 30 November.

As of 30 November, the company has used the borrowed money for one month, so it has incurred one month's worth of interest. To calculate the amount of interest, we simply multiply the principal amount ($100 000) by the annual interest rate (6 per cent) and by the relevant number of periods (1 month out of 12, or 1/12). So, interest for the month of November is:

Principal × annual rate × time = $100 000 × 0.06 × 1/12 = $500

Therefore, the following adjusting journal entry should be made on 30 November:

30 Nov.	Interest Expense	500	
	Interest Payable		500
	(To record interest incurred during November)		

Assets	=	Liabilities	+	Equity
		+500		–500

The preceding entry increases the Interest Expense account for the $500 of interest for November and increases the Interest Payable account for the same. As a result, liabilities are increasing and equity is decreasing. The preceding entry would be posted to the relevant T-accounts as follows:

Cash	
1 100	
1 100	

Interest Payable	
	500
	500

Interest Expense	
500	
500	

After posting, the Interest Expense T-account reflects the $500 incurred in the current period and the Interest Payable T-account reflects the $500 owed to the bank on 30 November. These two accounts have been adjusted so that they properly reflect expenses incurred during November and the payables owed on 30 November.

The Cash account is not affected by the adjusting journal entry. Cash, which has a $1100 balance for illustrative purposes, will be paid on 1 December. On that date, the following entry would be made:

1 Dec.	Interest Payable	500	
	Cash		500
	(To record payment of cash)		

Assets	=	Liabilities	+	Equity
–500		–500		

The preceding entry decreases the Cash account for the $500 paid to the bank and decreases the Interest Payable account by the same $500. As a result, both assets and liabilities are decreasing. The entry would be posted to the relevant T-accounts as follows:

Cash	
1 100	
	500
600	

Interest Payable	
	500
500	
	0

General rule

When a company incurs an expense before it pays cash, the company should always increase a payable account and an expense account for the amount incurred. In other words, the payable account should be adjusted up (increased) and the expense account should also be adjusted up (increased). When the company pays the liability, the liability account is reduced and the cash account is decreased. So, the adjusting journal entry for this scenario will always be an increase to a liability account and an increase to an expense account, as shown in Exhibit 4.4.

Check out the animated summary on Adjusting Entries APPLY THIS

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EXHIBIT 4.4 Entries in an accrued expense scenario

Scenario	Classification	Entry before end of period	Adjusting entry at end of period	Entry after end of period
Cash is received before revenue is earned	Deferred revenue	Cash $$ Liability $$	Liability $$ Revenue $$	
Cash is received after revenue is earned	Accrued revenue		Receivable $$ Revenue $$	Cash $$ Receivable $$
Cash is paid before expense is incurred	Deferred expense	Prepaid Asset $$ Cash $$	Expense $$ Prepaid Asset $$	
Cash is paid after expense is incurred	Accrued expense		Expense $$ Payable $$	Payable $$ Cash $$

EXHIBIT 4.5 Summary of adjusting journal entry scenarios

SUMMARY OF ADJUSTING JOURNAL ENTRIES

Exhibit 4.5 summarises the four scenarios that give rise to adjusting journal entries and the characteristics of the relevant entries. As you review this exhibit, consider the following generalisations of all adjusting entries:

- The purpose of adjusting entries is to record revenues that have been earned but not recorded and expenses that have been incurred but not recorded.
- Every adjusting journal entry will affect at least one revenue or one expense account. In addition, every adjusting journal entry will affect at least one asset or liability account. This means that every adjusting entry will affect at least one account from the income statement and one account from the balance sheet.
- Adjusting journal entries arise because the timing of revenue and expense recognition differs from the exchange of cash. Therefore, cash will never be increased or decreased in an adjusting entry.

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LO3 COMPREHENSIVE EXAMPLE: ADJUSTING JOURNAL ENTRIES

To illustrate the process of making adjusting journal entries from a trial balance and then preparing an adjusted trial balance, the Video Memories example from Chapter 3 will be continued. As a result of the transactions entered into by Video Memories during its first month of operations, the following unadjusted trial balance was prepared at 31 May (this is taken from Chapter 3). Notice that it is an unadjusted trial balance because adjusting entries have not yet been made.

Video Memories
Unadjusted trial balance
31 May

	Debit	Credit
Cash	$ 8250	
Supplies	1000	
Equipment	18000	
Unearned Revenue		$ 2000
Notes Payable		9000
Ordinary Shares		15000
Service Revenue		5000
Advertising Expense	250	
Salaries Expense	2000	
Dividends	1500	
Totals	$31000	$31000

In addition to these accounts and balances, the following information was available on 31 May:

1. On 31 May, Video Memories filmed the retirement reception for the customer who paid $2000 on 10 May (see Transaction #4 in Chapter 3).
2. On 31 May, Video Memories filmed the first night of a two-night local play. The second night will be filmed on 1 June, at which time Video Memories will bill the customer.
3. The local play customer has agreed to pay Video Memories $1500 for each night.
4. After a physical count, Video Memories determined that it had $650 of supplies remaining.
5. The interest rate for the note payable is 6 per cent (per annum).
6. Video Memories estimates that depreciation for May on its two cameras totals $600.

Given this information, the adjusting entries that follow can be prepared.

JOURNALISING AND POSTING ADJUSTING ENTRIES

Adjustment 1: Deferred revenue

Video Memories has now filmed the retirement reception, so it no longer has a liability to the customer; it has a revenue instead. However, the trial balance still shows the $2000 liability. Thus, the adjusting entry required to adjust the liability down and the revenue up is as follows:

31 May	Unearned Revenue	2000	
	Service Revenue		2000
	(To record revenue earned)		

Assets	=	Liabilities	+	Equity
		–2000		+2000

The entry would be posted to the relevant T-accounts as follows:

Unearned Revenue	
	2000
2000	
	0

Service Revenue	
	5000
	2000
	7000

Adjustment 2: Accrued revenue

Video Memories filmed one night of a local play. Therefore, it has earned revenue for one night, $1500. The trial balance does not reflect this because Video Memories has not issued a bill, so the adjusting journal entry to adjust receivables and revenues up is as follows:

31 May	Accounts Receivable	1500	
	Service Revenue		1500
	(To record revenue earned)		

Assets	=	Liabilities	+	Equity
+1500				+1500

Getty Images/AFP/LEON NEAL

Earning revenue is not always a burden

The entry would be posted to the relevant T-accounts as follows:

Accounts Receivable	
0	
1500	
1500	

Service Revenue	
	5000
	2000
	1500
	8500

Adjustment 3: Deferred expense

Video Memories has $650 in supplies on hand. However, the trial balance shows $1000 in the Supplies account, which is the amount that Video Memories originally purchased. Therefore, Video Memories must have used $350 of supplies ($1000 – $650). To adjust the Supplies account down from $1000 to $650 and to record the $350 in expense, the following adjusting journal entry is required.

31 May	Supplies Expense	350	
	Supplies		350
	(To record expense incurred)		

Assets	=	Liabilities	+	Equity
–350				–350

The entry would be posted to the relevant T-accounts as follows:

Supplies	
1000	
	350
650	

Supplies Expense	
0	
350	
350	

Adjustment 4: Accrued expense

Video Memories must pay interest on the notes payable at a 6 per cent annual rate (we have assumed the loan was obtained at the beginning of May). Therefore, after one month, Video Memories has incurred $45 of interest expense ($9000 × 6% × 1/12). This expense and the related obligation are not reflected in the trial balance because they have not yet been recorded. To record them, the following adjusting entry is required:

31 May	Interest Expense	45	
	Interest Payable		45
	(To record expense incurred)		

Assets	=	Liabilities	+	Equity
		+45		–45

The entry would be posted to the relevant T-accounts as follows:

Interest Payable		Interest Expense	
	0	0	
	45	45	
	45	45	

Adjustment 5: Deferred expense

Video Memories determines that depreciation on its cameras should be $600 for the month of May. To record this depreciation, the following adjusting entry is required.

31 May	Depreciation Expense	600	
	Accumulated Depreciation		600
	(To record expense incurred)		

Assets	=	Liabilities	+	Equity
–600				–600

The entry would be posted to the relevant T-accounts as follows:

Equipment		Depreciation Expense		Accumulated Depreciation	
18 000		0			0
		600			600
18 000		600			600

PREPARING AN ADJUSTED TRIAL BALANCE

Once all of the preceding adjusting entries are journalised and posted to the ledger, an adjusted trial balance can be prepared. Like the previous trial balance, the adjusted trial balance simply lists all balances from the ledger. Since the ledger now reflects several adjustments, so does the adjusted trial balance.

The following is the adjusted trial balance for Video Memories on 31 May. The accounts that were either created or adjusted by the adjusting entries are highlighted. The other accounts, such as cash, have not changed from the unadjusted trial balance presented earlier.

Video Memories Adjusted trial balance 31 May		
	Debit	**Credit**
Cash	$ 8 250	
Accounts Receivable	1 500	
Supplies	650	
Equipment	18 000	
Accumulated Depreciation		$ 600
Unearned Revenue		0
Interest Payable		45
Notes Payable		9 000
Contributed Equity		15 000
Service Revenue	8 500	
Supplies Expense	350	
Interest Expense	45	
Depreciation Expense	600	
Advertising Expense	250	
Salaries Expense	2 000	
Dividends	1 500	
Totals	$33 145	$33 145

PREPARING FINANCIAL STATEMENTS

Once all revenues and expenses are recorded and an adjusted trial balance is prepared, financial statements can be generated. Recall from Chapter 1 that the income statement should be prepared first. Using the adjusted revenue and expense account balances from the adjusted trial balance, Video Memories' income statement for the month of May would appear as follows:

Video Memories Income statement for the month ending 31 May		
Revenues		$8 500
Expenses		
Supplies Expense	$ 350	
Interest Expense	45	
Depreciation Expense	600	
Advertising Expense	250	
Salaries Expense	2 000	
Total Expenses		3 245
Profit		$5 255

Note the profit figure is $2505 higher than shown in Chapter 3. This is due entirely to the adjusting entries updating the revenue and expense figures.

With profits calculated, Video Memories' retained earnings part of the statement of changes in equity (or the statement of *changes* in retained earnings) can be prepared. Recall that the statement of retained earnings takes the beginning balance in Retained Earnings, adds profits and subtracts dividends to yield the current balance in Retained Earnings. Video Memories' 31 May adjusted trial balance shows no balance in beginning Retained Earnings and a $1500 balance in Dividends. Therefore, Video Memories' statement of retained earnings for the month of May would appear as follows:

Video Memories Statement of changes in retained earnings for the month ending 31 May	
Retained Earnings, 1 May	$ 0
Add: Profits	5255
Less: Dividends	(1500)
Retained Earnings, 31 May	$ 3755

With retained earnings calculated, Video Memories' balance sheet can be prepared. Video Memories' 31 May adjusted trial balance shows several balance sheet accounts, starting with Cash and continuing through Ordinary Shares. These accounts, along with the amount of retained earnings from the May statement of retained earnings, should be included on the balance sheet. Therefore, Video Memories' 31 May balance sheet would appear as follows:

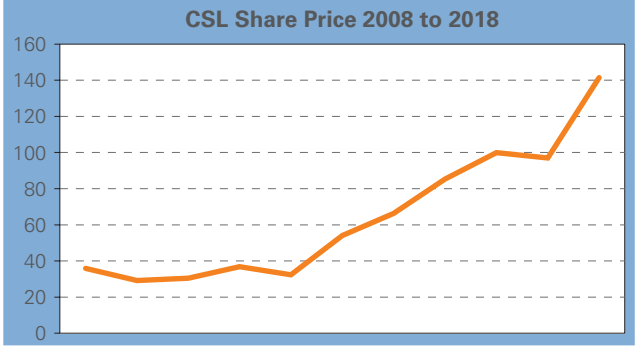
Video Memories Balance sheet at 31 May		
Cash		$ 8250
Accounts Receivable		1500
Supplies		650
Equipment	$18000	
Less: Accumulated Depreciation	600	17400
Total Assets		$27800
Interest Payable	$ 45	
Notes Payable	9000	
Total Liabilities		$ 9045
Contributed Equity	$15000	
Retained Earnings	3755	
Total Shareholders' Equity		18755
Total Liabilities and Shareholders' Equity		$27800

MAKING IT REAL

EVALUATING STRATEGY

To determine if any strategy is successful or not it is necessary to be able to accurately measure performance after the implementation of the strategy, consistent with the measure before. For example, after an athlete has undertaken a training regime can he or she swim/run faster, jump higher or lift greater weights? For someone on a diet, has he or she lost or put on weight according to their plan? There is no point measuring weight when holding onto something or with weights in your pockets, when you originally weighed yourself under different circumstances. Adjusting entries allow the 'financial weight' of a business to be measured as accurately as possible.

In 2008 CSL reported net profit after tax of $701, increasing to $1311 in 2013 and $1739 in 2017 (all in millions of Australian dollars) CSL had flat profits after the Global Financial Crisis but increased after 2010. We can judge the success of its strategy by looking at profits (measured as accurately as the judgements associated with adjusting entries permit). Of course we have no way of knowing what would have happened if a different strategy was implemented, but from the Excel graph below it appears investors (shareholders) see similar improvement since 2010. However, the share price is only part of the story, it does not show the $11.23 of dividends paid out over the 10 years.



Download the Enrichment Modules for further practice

APPLY THIS

LO4 CLOSING PROCESS

After financial statements are prepared, companies conduct the closing process. The **closing process** is when all revenue, expense and dividend account balances are transferred to the Retained Earnings account. This transfer is necessary for three reasons.

closing process The process of transferring all revenue, expense and dividend account balances to the Retained Earnings account.

First, revenue, expense and dividend accounts are **temporary accounts**, meaning that they accumulate balances only for the current accounting period. After the period ends and financial statements are prepared, all temporary accounts must be reset to zero for the start of the next period.

temporary accounts Accounts that accumulate balances only for the current period.

Second, the transfer updates the Retained Earnings account to its correct end-of-period balance. In the preceding example, the balance in Retained Earnings is generated from the statement of retained earnings, not the adjusted trial balance. The closing process is the mechanism that updates the actual Retained Earnings account balance in the ledger.

Third, the closing entries leave the revenue, expense and dividend accounts with zero balances to commence the next accounting period and any amount now entered in these temporary accounts relates to the new accounting period.

closing entries Entries made in the journal and posted to the ledger that eliminate the balances in all temporary accounts and transfer those balances to the Retained Earnings account.

The closing process is accomplished with several entries. **Closing entries**, which are made in the journal and posted to the ledger, eliminate the balances in all temporary accounts and transfer those balances to the Retained Earnings account. Usually, one entry is made for revenues, one for all the expenses and a final entry for dividends. To illustrate, the temporary accounts from Video Memories' adjusted trial balance are shown in the following partial adjusted trial balance:

Video Memories Partial adjusted trial balance 31 May	Debit	Credit
Service Revenue		$8 500
Supplies Expense	$ 350	
Interest Expense	45	
Depreciation Expense	600	
Advertising Expense	250	
Salaries Expense	2 000	
Dividends	1 500	

Video Memories has one revenue account with an $8500 credit balance. To eliminate that balance and transfer it to the Retained Earnings account, the following closing entry is required:

31 May	Service Revenue	8 500	
	Retained Earnings		8 500
	(To close revenue account)		

In this entry, the revenue balance is eliminated while the Retained Earnings account is increased.

Expense and dividend accounts are closed in a similar fashion. To eliminate those balances and transfer them to Retained Earnings, the following closing entries are required:

31 May	Retained Earnings	3 245	
	Supplies Expense		350
	Interest Expense		45
	Depreciation Expense		600
	Advertising Expense		250
	Salaries Expense		2 000
	(To close the expense accounts)		
31 May	Retained Earnings	1 500	
	Dividends		1 500
	(To close the dividends account)		

In the first entry, all expense accounts are eliminated and the Retained Earnings account is decreased by the total expenses. In the second entry, the dividends account is eliminated and the Retained Earnings account is decreased by the same amount.

All three closing entries would be posted to the appropriate T-accounts as follows:

Retained Earnings

	8 500
3 245	
1 500	
	3 755

Supplies Expense

350	
	350
0	

Interest Expense

45	
	45
0	

Depreciation Expense

600	
	600
0	

Advertising Expense

250	
	250
0	

Salaries Expense

2 000	
	2 000
0	

Service Revenue

	8 500
8 500	
	0

Dividends

1 500	
	1 500
0	

Notice that after the closing entries are posted, all revenue, expense and dividend accounts have zero balances as desired. They are now ready to begin the next reporting period. Also, Retained Earnings has a $3755 credit balance. This is the balance reported on Video Memories' statement of retained earnings and balance sheet. In other words, the Retained Earnings account now has the correct balance at the end of the period.

As a final check that all accounts have been properly closed, a new trial balance is prepared. Appropriately called a post-closing trial balance, it contains all account balances for the beginning of the next accounting period. Video Memories' post-closing trial balance is as follows:

Video Memories Post-closing trial balance 31 May		
Cash	$ 8 250	
Accounts Receivable	1 500	
Supplies	650	
Equipment	18 000	
Accumulated Depreciation		$ 600
Interest Payable		45
Notes Payable		9 000
Ordinary Shares		15 000
Retained Earnings		3 755
Totals	$28 400	$28 400

Getty Images/AFP/Peter Parks

Closing entries and preparing a post-closing trial balance are the last things accountants do before celebrating the new financial year

LO5 THE ACCOUNTING CYCLE: A SUMMARY

This and the previous chapter covered the accounting cycle. The **accounting cycle** is the sequence of steps in which an accounting information system captures, processes and reports a company's accounting transactions during a period. Chapter 3 demonstrated the first three steps: how to record journal entries in the journal, post the information to the ledger and prepare a trial balance. This chapter demonstrated the two major processes that occur at the end of the period: adjusting and closing. The adjusting process includes the recording and posting of adjusting entries, and the preparation of an adjusted trial balance, from which financial statements are prepared. The closing process includes the recording and posting of closing entries, and the preparation of a post-closing trial balance. Once closing is completed, the accounting information system is prepared to begin the next period. Exhibit 4.6 summarises these steps.

accounting cycle The sequence of steps in which an accounting information system captures, processes and reports a company's accounting transactions during a period.

1 Journalise and post accounting transactions
2 Prepare a trial balance
3 Journalise and post adjusting entries
4 Prepare an adjusted trial balance
5 Prepare financial statements
6 Journalise and post closing entries
7 Prepare a post-closing trial balance

EXHIBIT 4.6 The accounting cycle

APPLY THIS
Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Cash and accrual basis

LO1

During 2017, Supreme Media Company earned $77 500 in revenue. At year-end, only $58 500 of that revenue had been collected. Not only this, Supreme Media incurred $39 600 of expenses of which only $35 000 had been paid.

REQUIRED

Determine profit or loss (total comprehensive income) for the year under (a) the cash basis of accounting and (b) the accrual basis of accounting.

2 Adjusting journal entries

LO2, 3

Consider the following incomplete adjusting journal entries:

1	(a)	5 600	
	Accumulated Depreciation		5 600
2	Interest Expense	8 500	
	(b)		8 500
3	Accounts Receivable	17 000	
	(c)		17 000
4	(d)	6 750	
	Subscription Revenue		6 750

REQUIRED

Identify the likely account(s) that would complete each adjusting journal entry (a) to (d).

3 Adjusting journal entries

LO2

Consider the four entries in the preceding exercise.

REQUIRED

Identify each entry as an accrued expense, an accrued revenue, a deferred expense or a deferred revenue.

4 Adjusting journal entry – expense

LO2, 3

Muscle Man Ltd pays its one-year insurance policy of $29 000 on 1 October. The insurance policy covers all claims in the next 12 months. The company is preparing its financial statements on 31 December.

REQUIRED

a Determine whether the expense is deferred or accrued expense and explain why.

b Prepare the journal entries that Muscle Man would make during October (receipt of cash) and on 31 December.

5 Adjusting journal entry – revenue

LO2, 3

Leopard Legal agrees to prepare and represent Ali in court for a speeding fine. The firm charges a flat fee of $250 per hour and always completes the service before billing the client. The firm completes the service on 16 April and bills Ali on 1 March, with the bill amounting to 20 hours. Leopard Legal prepares financial statements at the end of each month.

REQUIRED

a Prepare any adjusting journal entry necessary for Leopard Legal on 30 April.

b Explain if this situation is a deferred or accrued revenue.

c Show the T-accounts with the adjusting journal entry posted to them.

6 Adjusting journal entry – expense

LO2, 3

On 1 March, Mustafa borrows $62 000 from Northern Lights Bank on a short-term loan. Interest is paid after three months and annual interest rates are 6 per cent.

REQUIRED

a Record the adjusting journal entry necessary on 1 May.

b Post the 1 May journal entry to the relevant ledger T-accounts.

7 Adjusting journal entry errors

LO2, 3

Natalie, a first-year intern at an investment bank, believes that she may have made errors in her adjusting entries. She has asked you for advice and reveals the following accounting records:

a Depreciation expense on a car was not recorded.

b Revenue was recorded for the current year when the job will be completed next year.

c Commission from customer service operators has been overlooked.

REQUIRED

Determine the likely accounts that are affected by each error and whether those accounts are understated or overstated as a result of the error.

8 Calculate expenses and revenues

LO2, 3

The current and prior-year balance sheet of NCA show the following account balances:

	Current year	Prior year
Supplies	$4 000	$6 500
Unearned Revenue	8 400	8 000

During the current year, NCA purchased $13 300 of supplies and received $8700 of cash for services to be performed later.

REQUIRED

Using ledger accounts, determine NCA's supplies expense and service revenue for the current year.

9 Adjusting journal entries

LO2, 3

Christina Industries provides the following selected information from its trial balance and adjusted trial balance at 31 October:

Christina Industries trial balance 31 October				
	Unadjusted		Adjusted	
	Debit	Credit	Debit	Credit
Accounts Receivable	$6 910		$9 240	
Supplies	3 400		2 200	
Service Revenue		$17 480		$19 810
Supplies Expense	5 320		6 520	

REQUIRED

Prepare the adjusting journal entries that Christina Industries must have made at 31 October.

10 Prepare financial statements from trial balance

LO3

The adjusted trial balance for Mark Boxing Bros is as follows:

Mark Boxing Bros adjusted trial balance 30 June		
	Debit	Credit
Cash	$3 500	
Accounts Receivable	400	
Supplies	1 500	
Accounts Payable		$ 650
Salaries Payable		1 900
Retained Earnings		1 600
Service Revenue		5 450
Salaries Expense	3 700	
Supplies Expense	500	
Total	$9 600	$9 600

REQUIRED

Prepare Mark's income statement and statement of retained earnings for the month of June and his balance sheet at 30 June.

11 Closing entries

LO4

Patrick Lawn and Order generates and records $45 000 of revenues and $36 000 of expenses during the month. It also pays and records $1500 in dividends for the month.

REQUIRED

Prepare Patrick's closing entries for the month and determine the net change in retained earnings because of those entries.

12 Adjusting and closing process

LO3, 4, 5

Consider the following accounts: Cash, Accounts Receivable, Accounts Payable, Retained Earnings, Service Revenue, and Supplies Expense.

REQUIRED

Determine which accounts fall into the following categories:

a Accounts that can be adjusted and closed.

b Accounts that can be adjusted but not closed.

c Accounts that are not normally adjusted or closed.

13 Adjusting journal entries

LO2, 3

In its first year of operations, Savina Sweeties entered into the following transactions, among others:

i 1 January: Bought equipment, $90 000.

ii 31 February: Prepaid one year's rent, $30 000.

iii 1 June: Took out a one-year loan from the bank at an annual interest rate of 5 per cent, $25 000.

iv 1 August: Received payment for goods not yet rendered, $15 000.

v 1 September: Paid for salaries expense, $3000.

On 31 December, Savina has earned $5000 of the $15 000 in transaction (iv) and has incurred but not recorded $800 of electricity and $500 of salaries expense. Savina prepares adjusting entries on an annual basis.

REQUIRED

Prepare journal entries for transactions (i) to (v) and any adjusting journal entries needed at 31 December. Assume that the equipment depreciates $10 000 annually.

14 Adjusting journal entries

LO2, 3

Marshall Company's annual accounting period ends on 30 June 2019. Marshall makes adjusting journal entries semi-annually, and the following information applies to all necessary adjusting journal entries at 30 June 2019:

a Marshall carries the following two insurance policies:

Policy	Purchase date	Policy length	Cost at purchase date
i	1 July 2017	5 years	$50 000
ii	1 July 2018	2 years	$20 000

b At 1 January 2019, office supplies totalled $1800. In the past six months, additional supplies of $2700 were purchased, and a count revealed $2150 available supplies at 30 June 2019.

c Marshall owns one building:

Cost	Useful life	Annual depreciation
$150 000	25	$6 000

d Marshall decides to rent out a portion of its building. On 1 June 2019, Marshall received a prepayment of $5700 for rent for the months of June, July and August.

e The Marshall staff consists of seven employees. Each employee earns a total of $1200 a week and is paid each Monday for the previous week's work. 30 June 2019, falls on Thursday.

REQUIRED

Prepare all necessary adjusting entries at 30 June 2019.

15 Adjusting journal entries

LO2, 3

Tammy, a first-year accountant at Violinda, has asked you to review the following items for potential errors. Violinda has a 31 December year-end.

- **i** Did not adjust the Prepaid Insurance account for the $7700 of insurance that expired during the year.
- **ii** Recorded a full year of accrued interest on a $20 000, 10 per cent note payable that was entered into on 1 July (6 months ago). Interest is payable each 1 July.
- **iii** Did not record $10 000 of depreciation on an office building.
- **iv** Recorded revenues of $16 500 when payment was received for a job that will be completed next year.
- **v** Recorded $900 of electricity expense for December even though Violinda will not pay the bill until January of next year.
- **vi** Fees due from customers amounting to $4050 are not included in the accounts.

REQUIRED

Determine if Tammy made any errors in the six items. For those in which an error was made, prepare the entry that Tammy should have made. What was the net effect of Tammy's errors on the income of Violinda?

16 Closing process

LO4

A partial adjusted trial balance for Sebastian Empanadas is shown as follows:

Sebastian Empanadas Partial adjusted trial balance 30 June		
	Debit	**Credit**
Retained Earnings		$17 150
Sales Revenue		30 500
Advertising Expense	$ 1 200	
Depreciation Expense	10 750	
Interest Expense	560	
Salaries Expense	5 000	
Supplies Expense	2 500	
Utilities Expense	2 080	
Dividends	1 000	

REQUIRED

a Prepare Sebastian Empanadas' income statement and statement of retained earnings for the month of June.

b Prepare the appropriate closing entries at 30 June.

c What is the purpose of 'closing the books' at the end of an accounting period?

17 Match terms and definitions

LO1, 2, 3, 4

The following is a list of various accounting terms and definitions:

- **i** Accrued expense
- **ii** Accrued revenue
- **iii** Deferred revenue
- **iv** Adjusting journal entries
- **v** Cash basis of accounting
- **vi** Deferred expense
- **vii** Accrual basis of accounting
- **viii** Closing process
- **ix** The final step in the accounting cycle whereby all revenue, expense and dividend account balances are transferred to the Retained Earnings account.

REQUIRED

Match accounting terms (i) to (ix) with the appropriate definition below:

a Cash is received before revenue is earned.

b Cash is paid before expense is incurred.

c Expense is incurred before cash is paid.

d Revenues are recorded only when cash is received, and expenses are recorded only when cash is paid.

e Entries made into the general journal at the end of an accounting period that record previously unrecorded revenues or expenses.

f Revenues are recorded only when they are earned, and expenses are recorded only when they are incurred.

g Revenue is earned before cash is received.

PROBLEMS

18 Cash and accrual income

LO1, 2

Golden Gloria Time Ltd keeps records under the cash basis of accounting rather than the accrual basis. Gloria's 2020 income statement and additional data from 2019 and 2020 are as follows:

Golden Gloria Time Ltd Cash-Basis Income statement for the year ending 31 December 2020	
Revenues	$54 000
Expenses	35 000
Profit	$19 000

Additional information:

	31 December 2019	31 December 2020
Accrued Revenues	6 000	8 000
Deferred Revenues	13 000	4 500
Accrued Expenses	5 000	4 000
Deferred Expenses	10 000	9 500

All accrued revenues and expenses as of 31 December 2019 were collected and paid, in 2020. All deferred revenues and expenses as of 31 December 2019 were earned and used, in 2020.

REQUIRED

Convert revenues and expenses from the cash basis to the accrual basis and recalculate income. Briefly explain why each adjustment is made.

19 Adjusting entries and trial balance

LO2, 3

The unadjusted trial balance of Amy Tran Spa is shown as follows:

Amy Tran Spa Unadjusted trial balance 30 August		
	Debit	Credit
Cash	$ 4 300	
Supplies	2 250	
Equipment	18 000	
Accumulated Depreciation	2 400	
Unearned Revenue		$ 1 500
Notes Payable		10 000
Contributed Capital		10 000
Service Revenue		4 000
Advertising Expense	650	
Depreciation Expense	1 200	
Interest Expense	400	
Salaries Expense	600	
Dividends	500	
Totals	$27 900	$27 900

Additional information:

- **i** on 30 August, Amy completed a service for which it had received payment in August, $1500
- **ii** on 30 August, Amy determined that she had earned but not yet billed (invoiced) revenues of $500
- **iii** monthly depreciation on Amy's equipment is $150
- **iv** the interest rate on the promissory note is 6 per cent
- **v** a count of the supplies revealed $500 of supplies remaining on 30 August
- **vi** received an advertising bill to be paid next month of $400
- **vii** assume the trial balance was last adjusted on 31 July.

REQUIRED

Prepare all necessary adjusting entries for the month of September and prepare an adjusted trial balance as of 30 August.

20 Adjusting entries and closing entries

LO2, 3, 4

The unadjusted and adjusted trial balances of Lee Enterprises are as follows:

Lee Enterprises Trial balance 30 June				
	Unadjusted		Adjusted	
	Debit	Credit	Debit	Credit
Cash	$ 3 500		$ 3 500	
Accounts Receivable	8 250		10 750	
Prepaid Insurance	4 600		3 400	
Supplies	600		200	
Buildings	165 000		165 000	
Land	75 000		75 000	
Accumulated Depreciation		$ 15 000		$ 31 500
Accounts Payable		9 950		11 000
Salaries Payable		0		1 800
Unearned Revenue		12 050		10 050
Notes Payable		50 000		50 000
Contributed Capital		100 000		100 000
Retained Earnings		34 600		34 600
Service Revenue		48 550		53 050
Advertising Expense	5 600		5 600	
Depreciation Expense			16 500	
Insurance Expense			1 200	
Salaries Expense	7 600		9 400	
Supplies Expense			400	
Electricity Expense			1 050	
Totals	$270 150	$270 150	$292 000	$292 000

REQUIRED

a Compare the two trial balances and recreate all adjusting journal entries that were made at 30 June.

b What is the net effect of the adjusting journal entries on total income (profit or loss)?

21 Adjusting entries and financial statements

LO2, 3

The 30 June unadjusted trial balance of Ly & Thai Tutoring appears as follows:

Ly & Thai Tutoring Unadjusted trial balance 30 June		
	Debit	**Credit**
Cash	$ 6900	
Accounts Receivable	4500	
Prepaid Rent	6300	
Supplies	2250	
Equipment	18000	
Accumulated Depreciation		$ 900
Unearned Revenue		1500
Notes Payable		10000
Contributed Capital		8000
Retained Earnings, 1 April		12200
Service Revenue		11200
Advertising Expense	650	
Depreciation Expense	900	
Interest Expense	150	
Rent Expense	2100	
Salaries Expense	1700	
Dividends	350	
Totals	$43800	$43800

Additional Information:

- **i** rent expires (is used up) at a rate of $800 per month
- **ii** monthly depreciation on equipment is $600
- **iii** interest on the 6 per cent promissory note is paid biannually on 1 July and 1 January
- **iv** performed services for which payment was received in April of $800
- **v** received electricity bill for $600 to be paid next month
- **vi** services to customers earned $2000 during June but was unrecorded at 30 June
- **vii** supplies on hand totalled $1000 at 30 June
- **viii** owed employees for salaries totalling $900 for the last week of June to be paid in July
- **ix** Ly & Thai Tutoring prepares adjusting entries each quarter. Adjustments were last made on 31 March.

REQUIRED

a Prepare all adjusting journal entries for the quarter ending 30 June.

b Post journal entries to T-accounts using totals on the unadjusted trial balance as the opening balances.

c Prepare an adjusted trial balance as of 30 June.

d Prepare an income statement and a statement of retained earnings for the three months ending 30 June.

e Prepare a classified balance sheet as at 30 June.

22 The accounting cycle

LO2, 3, 4, 5

Johnvo Photography was founded on 1 April and entered into the following transactions:

- 1st Issued shares to shareholders in exchange for $100000 cash.
- 1st Purchased a camera (equipment) for $65000.
- 1st Purchased supplies for $2000.
- 1st Purchased a one-year insurance policy to be consumed evenly over the next period, to be paid next month – $3700
- 1st Took out a loan from First Bank for $100000.
- 6th Hired two new employees on salary of $4000 a month each.
- 6th Received prepayment for a contracted job to be performed in May – $22500.
- 8th Billed customers for services provided – $42000.
- 12th Paid to have an ad placed on website during April – $7000.
- 18th Billed customers for services provided – $34000.
- 24th Paid dividends to shareholders – $5000.
- 30th Prepaid the next six months of rent starting with May – $18000.

Additional information:

- **i** April depreciation for the delivery van is $1085
- **ii** Interest on the loan from the bank is paid annually at a rate of 6 per cent
- **iii** Prepaid insurance has expired
- **iv** Employees' salaries earned during April but to be paid in May.

REQUIRED

a Journalise the transactions for the month of April.

b Post the journal entries to the general ledger using T-accounts.

c Prepare a trial balance as of 30 April.

d Prepare all necessary adjusting journal entries and post the entries to the appropriate T-accounts.

e Prepare an adjusted trial balance as of 30 April.

f Prepare an income statement and a statement of retained earnings for the month of April. Also prepare a classified balance sheet as of 30 April.

g Prepare all closing entries for the temporary accounts and post the entries to the appropriate T-accounts.

h Prepare a post-closing trial balance as of 30 April.

23 Locate and understand accounting information

Access the latest annual report for Qantas (perform an internet search for 'Qantas Annual Report')

REQUIRED

Review the first note to the financial statements and answer the following questions:

a When does Qantas recognise expenses from frequent flyer points? Where does it report 'redemption revenue'? Is this an example of a deferred or accrued revenue?

b When does Qantas recognise passenger and freight revenues?

c When does Qantas recognise revenues from members' fees?

d How does Qantas recognise employee benefits?

24 Communication activity

You are the chief financial officer of a top-tier firm and the date is 30 June. You recently asked the new accountant to prepare the initial draft of the financial statements for your review. However, when you received the draft, you quickly noticed that no adjusting journal entries were made.

REQUIRED

Write a short memo explaining the importance of adjusting entries and the potential misstatements that can result from their exclusion.

25 Communication activity

You are studying for your mid-term accounting exam with your friend, Andrew. He is struggling and says, 'I can never understand why adjusting entries are so important; you just debit/credit cash, right?'

REQUIRED

Explain the importance of adjusting entries using accounting concepts and address why the cash account is never involved in any adjusting journal entries.

26 Ethics and adjusting entries

Mohammad's Kebabs is a leading server of halal food. During the current year, it was on target to have record increased revenues and profits. However, towards the end of the current year, it was found that a quantity of the food was not halal certified, which resulted in some lawsuits and a product recall of Mohammad Kebab's Kebab line. Richard Yalda the CEO recently approached Sadek Ahmed the chief accountant, about the inevitable losses next year and asked Sadek to defer all possible revenue until next year and to accrue all possible expenses to the current year. 'We have so much revenue to spare this year,' Richard said, 'but next year, we will need all the help we can get'.

REQUIRED

a What ethical issues are involved in this scenario?

b If Richard gets his way, what accounting principles would be violated?

c Some may say that Richard is simply managing his earnings like he manages all other aspects of the business. What is your opinion of 'earnings management' of this kind?

27 Ethics and adjusting entries

You are the service manager with a major company. When you sell a service, the customer pays cash and you provide the service. At the end of each year, you are required to estimate how much of each outstanding service contract has been earned. At year-end, you have $1 million of outstanding contracts. You estimate that you have earned somewhere between 45 per cent and 55 per cent of those contracts.

REQUIRED

Under the following independent conditions, identify the amount of outstanding contracts that you would report earned. Explain why you would report those amounts.

a Your compensation is based on performance and you are $550 000 short of your quota before your estimate.

b Your compensation is based on performance and you are $450 000 short of your quota before your estimate.

c Your compensation is based on your group's performance, and while you have met your quota before your estimate, the group needs $600 000 to meet the group quota.

5

Cash and internal controls

This chapter examines the concepts of internal control and how those concepts affect the accounting for cash. Internal control is a company-wide process that seeks to improve a company's operations and financial reporting and to protect its assets. There are few assets that are more prone to theft than cash, so internal control is extremely relevant and important to the accounting for cash.

This chapter begins with the role and overall concepts of internal control and then examines two control activities relating to cash: bank reconciliations and petty cash funds. The chapter concludes with how cash is reported and how a company's cash position can be analysed.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Identify the role of internal control in a business.
2. Describe five components of internal control.
3. Understand two methods of internal control over cash – bank reconciliations and petty cash funds.
4. Appreciate the reporting of cash and cash equivalents.
5. Analyse cash through the calculation and interpretation of horizontal, vertical and ratio analyses and free cash flow.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

LO1 INTERNAL CONTROL

A report prepared by forensic accounting firm Warfield & Associates, *Employee fraud in Australian financial institutions*, found Australian bank workers have taken from the employer over $200 million in the past decade, with gambling addiction being given as the primary reason.[1] Other cases, like the nearly $20 million taken over a two-year period by an accountant at (former) retailer Clive Peters, illustrate the importance of good controls over the asset cash. The accountant was sentenced to eight years in prison.

In recent years, there have been numerous widely publicised accounting frauds. Major corporations such as HIH Insurance in Australia and Enron in the US failed as a result of fraudulent activity. Many began to question the reliability and integrity of financial reporting of publicly listed companies.

Faced with this crisis, the Australian Government passed the *Corporate Law Economic Reform Program (Audit Reform and Corporate Disclosure) Act* (CLERP 9) in July 2004. The act sought to restore public confidence in financial reporting by strengthening auditor independence and enhancing financial reporting. At the heart of auditing and financial reporting is internal control.

In its broadest sense, **internal control** is the process that a company's management uses to help the company meet its operational and financial reporting objectives. More specifically, internal control is the system of policies and procedures that a business puts in place to provide reasonable assurances that:

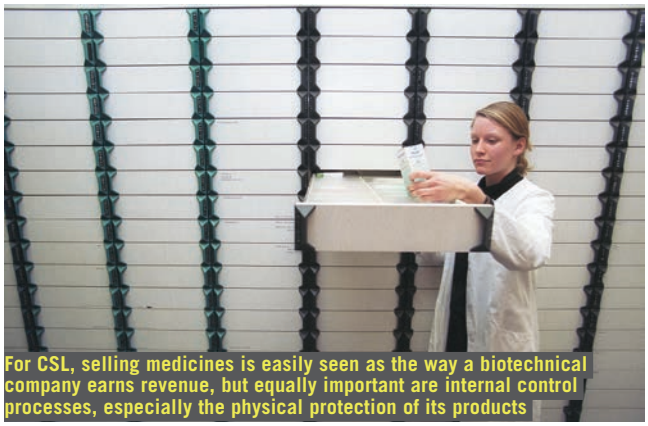
internal control The system of policies and procedures used in a company to promote efficient and effective operations, reliable financial reporting and compliance with laws and regulations.

Check out the video summary for Chapter 5

- the company's operations are effective and efficient
- the company's financial reporting is reliable
- the company is complying with applicable laws and regulations.

All companies have systems of internal control. The only question is how strong or weak those systems are.

Getty Images/Ulrich Baumgarten



For CSL, selling medicines is easily seen as the way a biotechnical company earns revenue, but equally important are internal control processes, especially the physical protection of its products

Recognising that internal control affects a company's success or failure, the *Sarbanes-Oxley Act* of 2002 in the United States contained several new requirements for publicly traded companies regarding internal control. One of the most important requirements was that corporations include in their annual reports to shareholders an *internal control report*. To illustrate management's responsibility for internal control, Exhibit 5.1 contains an excerpt from the *Institute of Chartered Accountants in Australia Limited* (now known as Chartered Accountants Australia and New Zealand) non-financial information assurance report. A similar statement is also contained in the independent auditor's report on the financial information. You can see from the audit report that the Institute's management is responsible for its internal control.

The Responsibility of Management for the Report

The management of the Institute is responsible for the preparation and presentation of the non-financial information in accordance with the subject matter and criteria set out in the basis of preparation on page 43 of the annual report. This responsibility includes establishing and maintaining internal controls relevant to the preparation and presentation of the non-financial information in the annual report that is free from material misstatement, whether due to fraud or error; selecting and applying specific principles, methodologies, policies and data sources used to prepare and present the information; and reporting targets that are reasonable, when appropriate.

Ernst & Young

Meredith Scott

Partner

Sydney 30 August 2011

EXHIBIT 5.1 Limited assurance report ICAA

In 1992 the Committee of Sponsoring Organizations (COSO) of the Treadway Commission released a report called *Internal control – integrated framework*. The report was the culmination of the committee's exhaustive research and deliberation on the elements of sound internal control. The committee's objective was to provide a common understanding of internal control – a framework for implementing good internal control practices. Its success is clear. The framework has become the standard for understanding what good internal control looks like in an organisation, and it is the basis for the discussion in this chapter.

Review this content with the e-lecture APPLY THIS

LO2 COMPONENTS OF INTERNAL CONTROL

The broad purpose of internal control is to help management achieve effective and efficient operations, reliable financial reporting and compliance with laws and regulations. *Internal control – integrated framework* states that good internal control consists of the following five interrelated components:

- control environment
- risk assessment
- control activities
- information and communication
- monitoring.

CONTROL ENVIRONMENT

The **control environment** is the foundation for all other components of internal control. It is the atmosphere in which the members of an organisation conduct their activities and carry out their responsibilities. The control environment is often called the 'tone at the top' because it reflects the overall control consciousness of an organisation.

control environment The atmosphere in which the members of an organisation conduct their activities and carry out their responsibilities.

Many factors affect an organisation's control environment. One of the most important is the overall integrity and ethical values of personnel. These attributes translate into standards of behaviour that can permeate throughout an organisation's operations. Other factors include management's philosophy and operating style, the assignment of authority and responsibility, and the general structure of an organisation. Each of these factors contributes to the overall corporate culture within which internal control operates. Without a sound control environment the remaining elements of internal control suffer.

CSL ANALYSIS

Look at the report of the independent auditor accompanying CSL's financial statements in Appendix B. What was the auditor's opinion regarding the effectiveness of CSL's internal control?

Analysis:

In Australia, unlike the United States, the auditor does not express an opinion on the adequacy of the internal control system. The auditor only states:

> The directors of the company are responsible for the preparation of the financial report … and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free of material misstatement, whether due to fraud or error.[2]

RISK ASSESSMENT

risk assessment The identification and analysis of the risks that threaten the achievement of organisational objectives.

All organisations face a variety of risks that threaten the achievement of the objectives. **Risk assessment** refers to the identification and analysis of these risks, with the goal of effectively managing them. Because business conditions change over time, risk assessment is an ongoing activity for any organisation.

Risks in any organisation can arise from both external and internal sources. External sources might include new competitors, changing customer expectations or even natural catastrophes. Internal sources might include inadequate workforce training, errors in financial reporting of activities or theft of assets by employees.

Once an organisation identifies its risks they can be analysed with the following general process:

1. Estimate the significance of a risk.
2. Assess the likelihood of the risk occurring.
3. Consider what actions should be taken to manage the risk.

In CSL's 2017 Annual Report ten risks are listed (e.g. healthcare industry risk, manufacturing and supply risk, market practice risk, to name a few) along with Key risk management for each.[3]

Minor risks are those with a lower likelihood of occurrence that generally do not warrant serious concern. For example, the risk of a meteorite destroying a company's warehouse can likely be ignored. In contrast, significant risks with higher likelihood demand considerable attention. For example, the risk of an employee stealing cash requires more attention. That attention comes in the form of control activities.

CONTROL ACTIVITIES

control activities The policies and procedures established to address the risks that threaten the achievement of organisational objectives.

Control activities are the policies and procedures that management establishes to address the risks that might prevent the organisation from achieving its objectives. Although specific control activities vary widely across organisations, they generally fall into one of several categories:

- establishing responsibility
- maintaining adequate documentation
- segregation of duties
- physical security
- independent verification.

Establishing responsibility

A critical factor in good internal control is establishing responsibility for the performance of a given task. When responsibility is clear, two benefits arise. First, the employee knows that they will be held accountable for completion of the task. Second, management knows who to consult if the task is not completed satisfactorily.

A good example is a retailer's cashiers. Each cashier is assigned sole responsibility over a specific cash drawer. No other cashier has access to or responsibility for that drawer. If a drawer is returned to the office short of cash, management knows exactly which cashier to speak to. As a result, cashiers are motivated to perform their tasks well, and the risk of theft or error is reduced.

Maintaining adequate documentation

Accounting information is useful only when it is reliable, which means that it must be free from error. Control activities are necessary in all organisations to promote error-free accounting records. Consider the sale of a company's inventory as an example. Good control practices would require that the sale be documented on a sales invoice, preferably sequentially numbered so that the sale will neither be lost nor recorded twice. The invoice might also require the employee's password (or card swipe) to establish responsibility for the sale, and it will have multiple copies to be sent electronically throughout the organisation for proper fulfilment and recording of the sale.

Segregation of duties

Segregation of duties is a technique that limits one person's control over a particular task or area of a company. Often called separation of duties, it is accomplished by spreading responsibility among multiple employees so that one employee's work can serve as a check against another's work. For example, consider the process of ordering, receiving and paying for inventory. If one employee handles all three tasks, there is greater risk of error and possibly theft of assets. However, if these three tasks are handled

by different employees, errors by one employee can be caught by another employee. Moreover, unless the employees work unethically together (collude), company assets are more protected against theft.

Physical security

Good internal control includes an effort to safeguard company assets and records. Most of these safeguarding controls are meant to prevent the loss of assets. Examples include secured facilities, fire and alarm systems, computer passwords and encryption, video monitors and door sensors that signal when product is inappropriately taken from a store. This is particularly important for a biotechnical company where the product often has restrictions on availability to the general public. Other controls are meant to detect the loss of assets. An example is the periodic counting of inventory for comparison to accounting records. Significant discrepancies can then be investigated.

Independent verification

Independent verification is the process of reviewing and reconciling information within an organisation. This is particularly useful when reconciling an asset balance with the accounting records for that asset. An example would be a bank reconciliation, where the bank's cash balance and the company's cash balance are reconciled. Often, the most effective verifications are conducted on a surprise basis and are conducted by individuals who have no connection to the process or the employee being verified. Internal audit divisions of organisations commonly perform such verifications.

INFORMATION AND COMMUNICATION

Information and communication is another element of sound internal control. **Information and communication** refers to the need for the open flow of relevant information throughout an organisation. Information must be captured and communicated in a form and a timeframe that enables employees to complete their responsibilities. This requires information systems that produce relevant and reliable reports. It also requires both upward and downward lines of communication. Management must communicate with employees, and employees with management.

information and communication
Required for the open flow of relevant information throughout an organisation.

MONITORING

Monitoring refers to the assessment of the quality of an organisation's internal control. Monitoring can be accomplished in two ways. The first is through ongoing activities. For example, in their recurring daily responsibilities, supervisors can check for evidence that a control activity is functioning properly. They can also ask employees if they understand the controls in place and if those controls are being completed. The second is through a separate evaluation. In both ways, the purpose of monitoring is to continuously improve internal control.

monitoring
The assessment of the quality of an organisation's internal control.

LIMITATIONS OF INTERNAL CONTROL

Regardless of how well internal control is designed within an organisation, it can provide only *reasonable* assurances that a company is meeting its objectives. Internal control systems are limited in their effectiveness because of the human element and cost–benefit analysis.

The *human element* refers to the fact that internal controls are often based on human judgement and action. Despite our best efforts, we all make mistakes at times and internal control cannot eliminate them all. Furthermore, employees can deliberately circumvent controls for personal gain. Sometimes this will be a manager who overrides the control activities in place. Other times this will be multiple employees working together to circumvent (get around) existing controls. Such collusion among employees can be very effective at defeating a company's internal controls.

Cost–benefit analysis refers to the cost of implementing a control activity versus the benefit that the control provides. For example, a company could install retina-scanning security systems for its warehouses to decrease the risk of theft. However, the cost of the installation may far outweigh the marginal advantage that retina-scanning security provides over normal lock-and-key security. Further, retina-scanning may be seen as too personally intrusive, and a non-biotechnical physical access system such as a staff card may be the compromise. A record of each card tapped is recorded but without the added security of knowing a lost or borrowed card is being used.

LO3 CASH CONTROLS

The best asset to use in demonstrating internal control is cash. Cash is a highly desired asset. It is easily concealed, taken and converted into other assets with only a small chance of detection. As a result, companies normally institute many controls to safeguard their cash and to report it properly. Electronic transfer of cash, either physically by cards or online have their own controls: passwords, PIN, SMS authorisation code, security questions, etc. Two of these controls are bank reconciliations and petty cash funds. Each is discussed in the following sections.

BANK RECONCILIATIONS

Most businesses keep the majority of their cash in a bank. This in itself is a good control procedure because it limits opportunities for theft – it is clearly more difficult to steal cash when it is locked up in the bank. The use of a bank also provides two sources of opposing record keeping; the liability the bank has to the customer and the asset the customer has at the bank. That is, both the business and the bank keep a record of all cash transactions between them. As a result, a business (company) can compare these records to verify its cash balance. This comparison is called a bank reconciliation.

bank reconciliation
The process of reconciling the differences between the cash balance on a bank statement and the cash balance in a business' records.

A **bank reconciliation** is the process of recognising and noting the differences between the cash balance on a bank statement and the cash balance in a business' records (at its simplest the 'cash' ledger T-account). The purpose of a bank reconciliation is twofold. First, it confirms the accuracy of both the bank's and the business' cash records and updates the business' records. Second, it determines the actual cash balance to be reported on the business' balance sheet. A bank reconciliation is prepared as follows:

1. Reconcile the bank balance to the actual cash balance.
2. Reconcile the business' book balance to the actual cash balance.
3. Adjust the business' book balance to the actual cash balance.

Reconciling the bank balance

The first step in a bank reconciliation is to adjust the cash balance reported on the bank statement to the business' actual cash balance. The bank balance will differ from the actual cash balance and will therefore need adjustment for two main reasons.

AAP Image/Tom Compagnoni

Records of cash are kept by both the business and the bank

The first reason relates to deposits and payments made by the business that are not reflected on the bank statement. For example, a **deposit in transit** is a deposit that has been made by the company but does not appear on the bank statement because it had not cleared the bank as of the statement date. Because the cash is now in the bank, deposits in transit should be added to the bank's cash balance. An **outstanding cheque** is one that has been distributed by the business but does not appear on the bank statement because it had not cleared the bank as of the statement date, often because it has not been deposited by the recipient. Because the cash is no longer in the bank, outstanding cheques should be subtracted from the bank cash balance. As we move to a 'cashless' society these are becoming less common.

deposit in transit
A deposit that has been made by the business but has not cleared the bank as of the statement date.

outstanding cheque
A cheque that has been distributed by the business but has not cleared the bank as of the statement date.

A cheque is an order to a bank to pay a stated sum from the drawer's account, written on a printed form as above

The second reason relates to errors made by the bank. Although bank errors are rare, they do occur and must also be reconciled. An error can result in the need to add to or subtract from the bank balance. For example, suppose that the bank erroneously records a $1450 deposit as $1540; the bank balance is overstated by $90 and should therefore be reduced by $90. In contrast, suppose that the bank records a $100 cheque as $10; in that case, the bank balance is understated by $90 and should be increased $90.

Once all adjustments to the bank balance are made, the adjusted bank balance should equal the actual cash balance to be reported on the statement of financial position.

Reconciling the business book (ledger account) balance

The second step in a bank reconciliation is to adjust the cash balance reported on the business' books to the actual cash balance. The business book balance is likely to differ from the actual cash balance and therefore needs adjustment. There are two main reasons for this. The first reason relates to bank activities that change a business' cash balance but have not been recorded by the business. The bank may notify the business of an addition to the cash balance on the bank statement. Conveniently called credit

memoranda, they arise when the bank collects cash on behalf of the business – often through the collection of a business receivable or interest on a note. (Most deposits in the business' bank accounts have an Electronic Funds Transfer [EFS] Code and these deposits are regularly supplied to the business by the bank and automatically update the business' accounting records for both the amount and the entity paying. It is only deposits not covered by the standard EFS that are included in the bank reconciliation.) These should be added to the business' book balance. A debit memorandum is notification of a subtraction from the cash balance on the bank statement. Common examples are fees charged for banking services and customer cheques returned for insufficient funds. Both of these examples reflect cash that the business no longer has, so they should be subtracted from the business' book balance. With online banking, bank account balances are available at any time. The second reason relates to errors made in the business' cash records. For example, suppose that during the reconciliation a business discovers that it erroneously recorded a cheque it had written for $1000 as only $100. The business' balance is overstated by $900 and should be reduced by $900.

Adjusting the cash balance

Once the bank balance and the business' book balance are reconciled, the business' cash balance must be adjusted to the actual cash balance determined by the reconciliations. Therefore, the third step in a bank reconciliation is to record the journal entries necessary to adjust the business' book balance to the actual cash balance. The journal entries are based on the credit and debit memoranda, and errors identified during the reconciliation of the business' balance.

Check out the animated summary on Bank Reconciliation

BANK RECONCILIATION EXAMPLE

To illustrate a bank reconciliation, suppose that Chapman Enterprises maintains an account with Murray River Bank. At the end of March, Chapman shows a cash balance of $54 567 while Murray River shows a balance of $49 880. The differences result from the following:

1. Deposits of $6450 on 30 March and $1236 on 31 March do not appear on the 31 March bank statement since they had not cleared the bank as of 31 March.
   Resolution: These are deposits in transit. Add them to the bank balance.
2. Cheques written in late March for $589 (Cheque #1987) and $2080 (#1991) do not appear on the 31 March bank statement since they had not cleared the bank as of 31 March (probably yet to be deposited by the recipient).
   Resolution: These are outstanding cheques. Subtract them from the bank balance.
3. The 31 March bank statement shows the collection of a $550 receivable from one of Chapman's customers and a $50 monthly service fee. Chapman had not recorded either of these two items.
   Resolution: The collection is a credit memorandum. Add it to Chapman's cash balance. The fee is a debit memorandum. Subtract it from Chapman's cash balance.
4. The 31 March bank statement shows that a $220 customer cheque was returned to the bank for non-sufficient funds (NSF). This is commonly known as a 'bounced' cheque. Chapman had not recorded this item.
   Resolution: The NSF cheque is a debit memorandum because no cash was received from the customer's cheque that Chapman deposited earlier. Subtract it from Chapman's cash balance.
5. A cheque clearing the bank for $400 was erroneously recorded in Chapman's records at $450. The cheque was written to pay off an open account payable.
   Resolution: Chapman recorded $50 too much for the cheque. Therefore, Chapman's cash is understated by $50. Add the $50 to Chapman's cash balance.

Chapman's resulting bank reconciliation is shown as follows. The top half shows the reconciliation of the bank balance while the bottom half shows the reconciliation of the business' book balance:

Chapman Bank reconciliation 31 March		
Balance per bank statement		$49 880
Add deposits in transit:		
30 March	$6 450	
31 March	1 236	7 686
Deduct outstanding cheques:		
No. 1987	$ 589	
No. 1991	2 080	2 669
Actual cash balance		$54 897
Balance per business records		$54 567
Add:		
Collection of receivable	$ 550	
Error by Chapman	50	600
Deduct:		
Monthly service charge	$ 50	
NSF check	220	270
Actual cash balance		$54 897

Both reconciliations correctly show an actual cash balance of $54 897. To adjust the business' cash balance to that actual balance, the following entries must be made. Note that each of the four entries comes from the four adjustments made in the reconciliation of the book balance to the actual balance.

Entry #1: Collection of the receivable

Chapman updates its cash balance to reflect the bank's collection of the receivable.

31 Mar.	Cash			550	
	Accounts Receivable				550
	(To record the collection of a receivable by the bank)				
	Assets	=	Liabilities	+	Equity
	+550				
	–550				

Entry #2: Correction of error

Chapman corrects the error made when the $400 cheque was recorded for $450. This requires Chapman to add back to both cash and accounts payable.

31 Mar.	Cash			50	
	Accounts Payable				50
	(To correct error)				
	Assets	=	Liabilities	+	Equity
	+50		+50		

Entry #3: Monthly service charge

Chapman records the monthly service charge as an expense. As a result, both assets and equity decrease.

31 Mar.	Service Charge Expense			50	
	Cash				50
	(To record monthly expense for bank account)				
	Assets	=	Liabilities	+	Equity
	–50				–50

Entry #4: Non-sufficient funds cheque

Chapman records the effect of a cheque returned for NSF by reinstating the receivable (the customer still owes the money) and reducing its cash balance. Since the cheque was not valid, the receivable has not yet been collected. Chapman must now try to collect again.

31 Mar.	Accounts Receivable			220	
	Cash				220
	(To reinstate customer receivable)				
	Assets	=	Liabilities	+	Equity
	+220				
	–220				

After these four entries are recorded, the business' cash balance is updated to the actual cash balance.

PETTY CASH FUNDS

Most companies require that all disbursements of cash be made with an authorised electronic transfer or double-signed cheque. This is a basic control activity that allows a business to better monitor its cash outflows. However, there are many instances when only a minor amount of cash is needed and the process of writing a cheque is burdensome or a cheque is not accepted. Examples would include postage for small mailings and the purchase of miscellaneous office supplies. To handle such cases, a business may establish a petty cash fund.

A **petty cash fund** is an amount of cash kept on hand to pay for minor expenditures. While the size and scope of a petty cash fund will vary across businesses, its operation will involve the following three activities:

- establishing the fund
- making payments from the fund
- replenishing the fund.

petty cash fund
An amount of cash kept on hand to pay for minor expenditures.

Establishing the fund

A petty cash fund is established by writing a cheque for the amount of the fund, cashing the cheque and placing the cash under the care of an employee designated as custodian. A journal entry is then made to record the establishment of the fund.

To illustrate, suppose that on 1 May, The Valley School (Valley) cashes a $100 cheque to establish a petty cash fund and gives the cash to the custodian Thu Tran. On this date, Valley would record the following entry.

1 May	Petty Cash			100	
	Cash				100
	(To establish $100 petty cash fund)				
	Assets	=	Liabilities	+	Equity
	+100				
	–100				

The entry increases Petty Cash and decreases Cash. Notice that there is no change in total assets. Valley has simply designated $100 to be used in a petty cash fund. Valley still has its cash. It has not yet disbursed any cash outside of the business.

Making payments from the fund

After the fund is established, the cash is used to pay for qualifying expenditures. Payments are usually made in one of two ways: cash can be taken from the fund to make payment or employees can seek reimbursement from the

fund for payments they have personally made. In either case, the custodian should collect receipts and authorisations for the use of any cash. As payments are made from petty cash, no journal entries are made. Journal entries are recorded only when the fund is replenished.

iStock.com/hidesy

Cash, petty or otherwise, is a vulnerable asset of any business and needs protecting

Replenishing the fund

As the cash in the fund decreases, the fund must be replenished. To do so, the remaining cash in the fund is counted and the business cashes a cheque for the amount that brings the total cash in the fund back to the original balance. The receipts in the fund are then used as documentation for recording expenses.

To illustrate, suppose that on 31 May, Tran examines the petty cash fund and prepares the following report.

The Valley School Petty cash fund replenishment report	
Petty cash fund	$100
Less: cash remaining in the fund	15
Cash requested to replenish fund	$ 85
Receipts in the fund:	
Postage	$ 25
Office supplies	47
Miscellaneous	13
Total receipts	$ 85

The report shows that the fund needs $85 to be fully replenished. It also shows that there are receipts totalling $85. As a result, Tran would cash a cheque for $85 to replenish the fund and record expenses as follows:

31 May	Postage Expense	25	
	Supplies Expense	47	
	Miscellaneous Expense	13	
	Cash		85
	(To replenish petty cash fund and record various expenses)		

Assets	=	Liabilities	+	Equity
–85				–25
				–47
				–13

The entry increases the three expense accounts related to the expenditures and decreases the Cash account for the amount of the cheque. Because Valley is recording the expenses resulting from fund use, the entry reduces both assets and equity. This same type of entry would be repeated each time the fund is replenished.

Cash over and short

When a petty cash fund is replenished, the amount of cash needed for replenishment should equal the total amount of receipts. However, this will not always be the case. Sometimes, the custodian will not obtain all receipts or will give incorrect change, resulting in a discrepancy between the cash needed for replenishment and the amount of receipts. In such cases, the discrepancy is charged to an account called Cash Over and Short. Cash Over and Short is a temporary account that can have either a debit or credit balance, depending on the situation. A debit balance increases expenses while a credit balance decreases expenses.

Many businesses have done away with petty cash and require employees to spend their own money and seek electronic reimbursement. In some cases employees are issued with a business credit card and are required to justify and receive authorisation for any purchases after they are made. Business credit cards cannot prevent unauthorised expenditure, but it can easily be detected and the employee held to account.

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LO4 REPORTING CASH AND CASH EQUIVALENTS

cash A medium of exchange.

At its most basic level, **cash** is a medium of exchange. A general rule is that something is cash if you can deposit it into a bank and readily use it to pay someone. A credit card is not cash although you can use it to buy goods and services; it is access to a pre-arranged loan. A debit card is a means of accessing cash and along with EFT has almost completely replaced cheques.

In addition to these forms of cash, companies often hold investments that are so much like cash that they are deemed to be equivalent to cash. A **cash equivalent** is any investment that is readily convertible into a known amount of cash and may be limited to investments that have a maturity of a few months. Cash equivalents are so much like cash that they are combined with cash for reporting purposes. In its annual report CSL states:

cash equivalent
Any investment that is readily convertible into cash.

> Cash and cash equivalents are held for the purpose of meeting short term cash commitments rather than for investment or other purposes. They are made up of:
> - Cash on hand.
> - At call deposits with banks or financial institutions.
> - Investments in money market instruments with original maturities of six months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.[4]

Cash and cash equivalents are reported on the balance sheet usually as the first current asset.

CSL ANALYSIS

CSL's balance sheet in Appendix B reports Cash and Cash Equivalents of $844.5 million in 2017. What has happened to the balance over the previous 52 weeks?

Analysis:
CSL's Cash and Cash Equivalents have increased from $556.6 million in 2016 to $884.5 million in 2017; a substantial increase of almost $328 million or almost 60 per cent.

Alamy Stock Photo/CB_AusMoney

Most cash is held in bank deposits, not notes and coins

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Download the Enrichment Modules for further practice

LO5 ANALYSING CASH

A company's management of cash is critical to its success. If a company does not have enough cash, it can quickly run into major problems. The following sections examine the cash position of CSL. The examination will require the cash balance from the company's balance sheet and various items from its cash flow statement.

HORIZONTAL AND VERTICAL ANALYSES

A good place to start the analysis of any asset account is horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance less the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account for an analysis of cash is total assets. These calculations are summarised as follows:

KEY FORMULA 5.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

KEY FORMULA 5.2 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Cash}}{\text{Total Assets}}$$

Given CSL's information in Appendix B, horizontal and vertical analyses of cash result in the following:

Horizontal analysis	
Cash and Cash Equivalents increase 2016 to 2017	$328m or 59% increase

Vertical analysis		
	2017	2016
Cash and Cash Equivalents	9.7%	7.4%

The horizontal analysis shows that CSL's cash increased significantly, by over $328 million in 2016–17, which equals a 59 per cent increase over the prior year. The vertical analysis shows that cash made up less than 10 per cent of total assets in 2017. This was a smaller increase than the percentage increase from the prior year, because total assets increased over 20 per cent for the year.

While the preceding analysis shows that CSL's cash increased during 2017, it does not indicate how cash increased. To find this out, investors and creditors can look at the information on the company's cash flow statement. Recall from Chapter 1 that the cash flow statement classifies a company's cash inflows and outflows into three main categories: operating activities, investing activities and financing activities.

Operating activities include those transactions necessary to run the business. This would include selling a product, paying employees and advertising. According to Exhibit 5.2, CSL generated almost $1250 million in cash from operations during 2017, which is over five per cent more than in 2016.

Investing activities include the buying and selling of revenue-generating assets. CSL reports a net cash outflow of over $860 billion from investing activities in 2017. The majority of that outflow was to pay for property, plant and equipment.

Financing activities include the raising and repayment of capital through debt and equity. During 2017, CSL both repaid loans ($581m) and borrowed ($1381m) for an $800 million increase in borrowings. The majority of the net outflow from financing activities was to pay dividends (over $600m). From the bottom of the cash flow statement you can see cash over the period increased by $280 million. CSL does not tell us why it increased its cash holdings, it even states that 'liquidity and refinancing risks are not significant'[5], this may be due to the large cash holdings.

FREE CASH FLOW

A company needs to generate enough cash to pay its bills. It also needs to generate enough to maintain its operating assets and to reward its shareholders with dividends. If a company can generate more cash than it needs for these commitments, it is generating free cash flow.

free cash flow The excess cash a company generates beyond what it needs to invest in productive capacity and pay dividends to shareholders.

Free cash flow is the excess cash a company generates beyond what it needs to invest in productive capacity and pay dividends to shareholders. That is, free cash flow is a measure of a company's ability to generate cash for expansion, for other forms of improved operations or for increased returns to shareholders. While free cash flow can be defined in many ways, the most straightforward definition is as follows:

KEY FORMULA 5.3 FREE CASH FLOW

Cash Flows from Operating Activities
– Capital Expenditures
– Dividends
= Free Cash Flow

The analysis starts with cash flows from operating activities, which is a measure of a company's ability to generate cash from its current operations. Capital expenditures refers to the amount a company spends on property, plant and equipment (CSL would include intangible assets as the business is based as much on intellectual property as buildings and equipment) during the year, or for a large diverse business such as CSL the net cash flow from investing activity. Dividends are payments to shareholders during the year. For CSL this also includes payments for share buy-backs (these are discussed in Chapter 11). Each of these items is found on the cash flow statement.

CSL ANALYSIS

Using CSL's financial statements in Appendix B, explain why Cash and Cash Equivalents as reported in the balance sheet is the same as the closing figure reported in the cash flow statement.

Analysis:

The cash figure in the balance sheet is obtained from the balance in the Cash ledger account. The cash figure in the cash flow statement comes from the same information used to record the journal entries that were posted to the Cash ledger account. Cash received from customers would have been the result of (mostly) cash collected from debtors (accounts receivable). The payments to creditors (accounts payable), employees etc., are recorded as a credit to cash. The cash flow statement shows the detail of the transactions involving cash and concludes with the closing balance. The balance sheet shows only the final cash balance.

From the information in Exhibit 5.2, CSL's free cash flow for 2017 and 2016 is calculated as follows (rounded to the closest $ million):

Free cash flow		
	2017	2016
Cash Flows from Operating Activities	$ 1 247	$ 1 179
Less: Capital Expenditure (investing activities)	(863)	(810)
Less: Dividends and share buy-backs	(916)	(1 227)
Equals: Free Cash Flow	($ 532)	$ (858)

As a growing business CSL may be expected to increase its cash. The balance sheet shows an increase of almost $287.7 million during the year ($555.3m to $843.0m), yet there is negative free cash flow. From the cash flow statement (financing activities) it can be seen proceeds from borrowings (debt) was greater than repayment of borrowings by about $800m ($1381m – $581m), $847 million in 2017. The cash flow statement shows the shortfall in free cash flows and the increase in cash came from borrowings.

CSL Limited Consolidated statement of cash flows for the year ended 30 June 2017		
	2017 US$m	**2018 US$m**
Cash flows from Operating Activities		
Receipts from customers (inclusive of GST)	6 749.2	5 982.7
Payments to suppliers and employees (inclusive of GST)	(4 946.9)	(4 417.0)
	1 802.3	1 565.7
Income taxes paid	(468.3)	(326.2)
Interest received	6.7	14.1
Borrowing costs	(94.1)	(75.0)
Net cash inflow from operating activities	1 246.6	1 178.6
Cash flows from Investing Activities		
Proceeds from sale of property, plant and equipment	0.1	0.1
Payments for property, plant and equipment	(689.1)	(495.1)
Payments for intangible assets	(171.5)	(70.6)
Payments for business acquisitions (Net of cash acquired)	–	(244.6)
(Payments)/receipts from other financial assets	(2.4)	0.1
Net cash outflow from investing activities	(862.9)	(810.1)
Cash flows from Financing Activities		
Proceeds from issue of shares	12.7	17.4
Dividends paid	(601.4)	(579.0)
Proceeds from borrowings	1 381.4	1 564.3
Repayments of borrowings	(581.3)	(716.9)
Payment for shares bought back	(314.9)	(648.2)
Net cash outflow from financing activities	(103.5)	(362.4)
Net increase in cash and cash equivalents	280.2	6.1
Cash and cash equivalents at the beginning of the financial year	555.3	555.5
Exchange rate variations on foreign cash and cash equivalent balances	7.5	(6.3)
Cash and cash equivalents at the end of the financial year	843.0	555.3

EXHIBIT 5.2 CSL's 2017 consolidated statement of cash flows

The consolidated statement of cash flows should be read in conjunction with the accompanying notes.

CSL, *Annual Report* 2017, p. 84. ©2017 CSL Limited. Reproduced with permission.

MAKING IT REAL

CASH ON HAND (OR IN THE SHOE BOX UNDER THE BED)

Cash on hand is critical to any successful business. Without available cash, a company cannot pay its bills and obligations.

Companies may hold onto their cash as long as possible. These companies need their cash to finance their day-to-day operations and many are more focused on arranging to pay their obligations as late as possible (just like individuals who will usually wait to pay their credit card until it is due).

Large companies are in the prime position to take advantage of smaller businesses to maximise their cash on hand. Large companies often represent a large percentage of sales for smaller businesses, therefore these small businesses may be forced to accept delayed payment to maintain a supplier relationship with their large customers. At the same time, these large companies may require payment from their customers in a timely manner or the customers may face collection litigation. This appearance of a double standard is possible because of the wide-reaching resources and market dominance some large companies possess.

Most retail companies buy on credit and sell for cash. A comparison of their accounts receivable and their accounts payable emphasises this.

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Cash is critical to any successful business

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EXERCISES

1 Internal control

LO2

Consider the following independent scenarios:

i A company installs electronic sensors and camera surveillance to mitigate the risk of theft.

ii A company creates customer invoices to be used for verification.

REQUIRED

Which element of internal control does each of the above scenarios best relate to?

2 Match terms and definitions

LO2

The following is a list of the components of internal controls:

i Control environment

ii Risk assessment

iii Control activities

iv Information and communication

v Monitoring.

REQUIRED

Match each internal control at (i) to (v) with the appropriate definition below:

a The policies and procedures established to address the risks that threaten the achievement of organisational objectives.

b The assessment of the quality of an organisation's internal control.

c The atmosphere in which the members of an organisation conduct their activities and carry out their responsibility.

d The identification and analysis of the risks that threaten the achievement of organisational objectives.

e A requirement for the open flow of relevant information throughout an organisation.

3 Internal control activities

LO1, 2

Garcia Company has the following internal control procedures:

i An internal auditor reconciles the bank statement each month.

ii The manager is required to authorise purchases before they are made by employees.

iii A pre-numbered shipping document is used for each shipment to customers.

iv The employee who writes cheques cannot make entries in the general ledger.

v The company stores inventory in a room that is monitored by cameras.

REQUIRED

For each item, identify the internal control principle that is being followed.

4 Bank reconciliation items

LO3

The following items may or may not be relevant to a company's bank reconciliation:

i The company recorded a deposit as $400, but it correctly cleared the bank for $350.

ii A cheque recorded for $800 is shown on the bank statement as an $800 reduction to the cash balance.

iii The bank statement shows a $20 monthly service fee.

iv A $2750 deposit made by the company is not reflected on the bank statement.

v Payment received from a customer is reflected on the bank statement but not on the company's books.

REQUIRED

Identify whether each item is (a) an addition to or subtraction from the book balance, (b) an addition to or subtraction from the bank balance or (c) not included on a bank reconciliation.

5 Petty cash

LO3

On 1 June, JEA Rosario Branch established a petty cash fund for $300. On 30 June, the fund's custodian prepares a report showing $96.20 in cash remaining and receipts of $46.55 for postage, $86.50 for office supplies and $70.75 for miscellaneous items. The custodian presents the report to the head office accountant, who replenishes the fund.

REQUIRED

Prepare all necessary journal entries for the month of June.

6 Calculate free cash flow

LO5

During the year, a company had cash flow from operations of $240 000. During the year the company also bought a new piece of equipment for $70 000, and $30 000 of dividends were paid.

REQUIRED

What is the company's free cash flow for the year?

7 Evaluate cash

LO5

Estay Engineering strives to keep a 'consistent' amount of cash on hand. Its latest balance sheet provides the following information:

Cash and cash equivalents, current year	$ 4 965
Cash and cash equivalents, prior year	5 012
Total assets, current year	70 350
Total assets, prior year	67 864

REQUIRED

Using horizontal and vertical analyses, determine whether Estay is maintaining a 'consistent' amount of cash. Round percentages to one decimal point (i.e. 9.4%).

8 Reporting cash and cash equivalents

LO4

The following is a list of items that may or may not be included in the cash and cash equivalents total on the balance sheet:

i undeposited cheque from a customer
ii petty cash on hand
iii ordinary shares of BHP
iv interest collected from savings at Westpac Bank
v one-month Commonwealth Government Bonds
vi certificate of deposit maturing in 45 days
vii certificate of deposit that matures in 120 days
viii cash in cheque account
ix a customer's cheque returned by the bank and marked non-sufficient funds.

REQUIRED

For each of the stated items, indicate whether the item should be included or excluded from the cash and cash equivalents total.

9 Internal control activities

LO1, 2

Maria's Boutique uses the following control procedures:

i The employee who works the register reconciles cash to receipts at the end of the day.
ii Employees know that the internal auditor will perform a bank reconciliation at the end of each month.
iii Cheques are not pre-numbered because the purchasing manager must approve payments before cheques are signed.
iv A cashier lets another employee work his assigned register while he helps a customer.
v Petty cash is kept in a back room but is not monitored during the day.
vi The company's accountant records the receipt of cash and cheques and makes deposits at the bank.

REQUIRED

Identify the problem with each internal control procedure.

10 Bank reconciliation items

LO2

Araya's Wraps is preparing a bank reconciliation for the month of March and needs help with the following items:

i A customer's $95 cheque was deposited on 31 March but does not appear on the bank statement.
ii A cheque clearing for $60 was recorded by Araya's Wraps for $84.
iii The bank statement shows a $50 non-sufficient funds cheque.
iv A service charge of $45 was reported on the bank statement.
v The bank statement shows that the bank collected $105 of interest on Araya's Wraps' behalf.
vi A charge of $25 for internet banking was reported on the bank statement.
vii A $75 cheque written on 31 March does not appear on the bank statement.

REQUIRED

Identify whether each item is (a) an addition to the book balance, (b) a deduction from the book balance, (c) an addition to the bank balance or (d) a deduction from the bank balance.

11 Bank reconciliation items

LO3

Consider the following two independent situations:

i A company's 30 April bank reconciliation shows deposits in transit of $4000. The company's books indicate deposits of $24 200 for the month of May, but the bank statement indicates deposits of $22 250 for May.
ii A company's 30 April bank reconciliation indicates outstanding cheques of $4500. The company's books indicate disbursements of $18 450 for the month of May, but the bank statement shows $20 400 of disbursements for May.

REQUIRED

a For situation (i), determine deposits in transit at 28 May
b For situation (ii), determine outstanding cheques at 28 May.

12 Prepare bank reconciliation

LO3

Juan Company's 30 June bank statement shows a balance of $19 250. Juan's books show a 30 June cash balance of $18 100. Juan also has the following information:

i deposits in transit as of 30 June, $2500
ii outstanding cheques as of 30 June, $3900
iii $150 service charge reported on the bank statement
iv non-sufficient funds cheque returned with bank statement, $2500
v interest on note receivable collected by the bank, $1800.

REQUIRED

Prepare Juan's bank reconciliation as of 30 June and prepare any necessary journal entries resulting from the reconciliation. What is the actual cash balance that should be reported on the 30 June balance sheet?

13 Prepare bank reconciliation

LO3

Noemi Company's 30 September bank statement shows a balance of $53 810. Noemi's 30 September cash balance is $45 800. Noemi also has the following information:

i deposits made but not appearing on the September bank statement, $5500
ii cheque written but not appearing on the September bank statement, $12 200
iii one cheque written for the purchase of supplies was erroneously recorded for $890 but appears on the bank statement as $980
iv monthly service charges listed on the bank statement are $230. Noemi had already recorded the effect of $130 of those charges
v a customer payment for a $1500 receivable was collected by the bank but not yet recorded by Noemi.

REQUIRED

Prepare Noemi's bank reconciliation as of 30 September and also prepare any necessary journal entries resulting from the reconciliation.

14 Bank reconciliation items

LO3

A company makes the following journal entries after preparing a bank reconciliation:

i	Cash	920	
	Accounts Payable		920
ii	Cash	900	
	Accounts Receivable		900
iii	Service Charge Expense	20	
	Cash		20

REQUIRED

Explain the likely circumstance behind each of the entries.

15 Petty cash

LO3

On 1 September, Saul's Consultants establishes a petty cash fund for $350. On 30 September, the fund's custodian prepares a report showing $180 in cash remaining and receipts of $54.75 for miscellaneous items, $56.25 for postage and $61 for supplies. The custodian presents the report to the company accountant, who replenishes the fund.

REQUIRED

Prepare all necessary journal entries for the month of September.

16 Petty cash

LO3

On 1 January, Melissa Co. establishes a petty cash fund in the amount of $750. On 31 January, the fund is replenished. Before replenishment, there was $278.25 remaining in the petty cash drawer and the following receipts:

- **i** parking fees – $125.25
- **ii** postage – $71
- **iii** office supplies – $222
- **iv** miscellaneous expenses – $52.

REQUIRED

Prepare all journal entries necessary to record the establishment and replenishment of the fund.

17 Evaluate cash

LO5

In a recent annual report, Nicole's Nursery reported the following account balances (in millions):

Cash and cash equivalents, current year	$ 1 753
Cash and cash equivalents, prior year	957
Total assets, current year	71 253
Cash flows from operating activities	8 653
Capital expenditures	1 834
Dividends	1 588

REQUIRED

a Prepare horizontal and vertical analyses of Nicole's Nursery's cash balance. Round percentages to one decimal point (e.g. 8.2%).

b Calculate free cash flow.

c Interpret the results of your calculations.

PROBLEMS

18 Prepare bank reconciliation

Rolo Hardware Company's bank statement for the month of April and its general ledger cash account at the end of April are as follows:

Bank Statement				
Date	**Disbursements**	**Deposits**	**Other**	**Balance**
1 April				$8 250
3	# 300 $1 220			7 030
4		$2 100		9 130
6	# 303 365			8 765
9	# 304 840			7 925
15	# 302 900			7 025
16	# 307 1 400			5 625
18	# 305 2 000			3 625
18		3 500		7 125
19	# 308 1 620			5 505
22	# 309 150			5 355
25		2 220		7 575
26	# 311 355			7 220
27	# 312 3 650			3 570
28		5 100		8 670
30			$100	8 770
30			130	8 640

Cash				
1 April	Balance	9 130	5 April # 301	790
17 April		3 500	6 April # 302	900
24 April		2 220	6 April # 303	365
27 April		5 100	8 April # 304	840
30 April		1 750	11 April # 305	2 000
			15 April # 306	1 180
			16 April # 307	1 400
			18 April # 308	1 260
			20 April # 309	150
			22 April # 310	560
			23 April # 311	355
			26 April # 312	3 650

Other information: Rolo had one deposit in transit of $2100 and one outstanding cheque (#300) of $1220 at 31 March. All cancelled cheque amounts agree with the bank statement.

REQUIRED

a Identify all deposits in transit and outstanding cheques at 30 April.

b Prepare a bank reconciliation for the month of April.

c Prepare all journal entries required by Rolo at 30 April. Assume any debit memorandum is a service charge, any credit memorandum is a collection of an account receivable, and any error relates to an account payable.

19 Evaluate cash

In their recent annual reports, Jasmine and Daniela reported the following account balances:

	Jasmine	Daniela
Cash and cash equivalents, 30/06/17	$ 1 880	1 427
Cash and cash equivalents, 30/06/16	2 087	1 086
Total assets	26 275	62 169
Cash flows from operating activities	3 744	4 779
Capital expenditures	1 014	2 005
Dividends	541	479

REQUIRED

For both companies, calculate and interpret (a) horizontal and vertical analyses of cash balance and (b) free cash flow. How do the cash positions compare? Round percentages to one decimal point (e.g. 8.2%).

CASES

20 Research and analysis

Access the latest copy of CSL's annual report by doing an internet search for 'CSL Annual Report' (annual reports are made public around the beginning of October each year).

REQUIRED

a Conduct horizontal and vertical analyses of CSL Limited's (ASX: CSL) cash balance. Round percentages to one decimal point (e.g. 8.2%).

b Examine the company's statement of cash flows and determine the major ways in which the company has been using its cash in the past two years.

c Based on your answers above, write a paragraph explaining your opinion of CSL Limited's (ASX: CSL) cash position. Use your answers as supporting facts.

21 Written communication

You partner with a friend of yours, Vladimir, start up a cosplaying clothing retailer business. You plan on implementing the internal controls that you have learnt from university, but your friend is worried about its effectiveness. Vladimir wonders what internal controls there are and what happens if they do not work.

REQUIRED

Explain the types of internal control that can be used and address the issue of the limitation of internal control.

22 Written communication

You are the owner of Simple Vintage, an indie retail business close to the university. You have a store manager who supervises employees. Most employees are part-time university students and your manager is having a difficult time getting the employees to follow internal control procedures. Most of the employees think that the procedures are a waste of time and that they don't relate to the main purpose of the business, which is to 'sell stuff'.

REQUIRED

Prepare a memo that can be given to incoming employees explaining to them the importance of the control environment in general and control activities specifically.

6

Receivables

This chapter examines the accounting for receivables. Specifically, the chapter focuses on how companies account for the recording, the collection and the non-collection of accounts receivable. After a discussion of how to analyse a company's receivable position, the chapter concludes with the accounting for a second type of receivable – a note receivable.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the recording and reporting of receivables.
2. Compare the methods used to account for uncollectible receivables.
3. Contrast the methods for estimating bad debt expense.
4. Evaluate accounts receivable through the calculation and interpretation of horizontal, vertical and ratio analyses.
5. Understand the accounting for notes receivable.

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LO1 RECORDING AND REPORTING ACCOUNTS RECEIVABLE

A receivable represents a company's claim on the assets of another entity. The most common type of receivable is an account receivable. An **account receivable** is an amount owed by a customer who has purchased the company's product or service. Sometimes these receivables are referred to as debtors or trade receivables because they arise from the trade of the company.

account receivable
An amount owed by a customer who has purchased the company's product or service.

Check out the video summary for Chapter 6 APPLY THIS

RECORDING ACCOUNTS RECEIVABLE

Receivables are recorded at the time of the sale. To illustrate, suppose that on 4 June, Howard Limited sells $1000 of product to a customer on account. Howard would record the revenue and receivable arising from the sale with the following entry. Note that this example ignores the effects on Howard's inventory and cost of goods sold. These will be covered in Chapter 7.

4 Jun.	Accounts Receivable			1 000	
	Sales				1 000
	(To record sale on account)				
	Assets	=	Liabilities	+	Equity
	+1 000				+1 000

Both assets and equity (revenue) increase because of this sale. When Howard collects the receivable, it will increase its cash and eliminate the receivable.

In some cases, a customer will return a product instead of paying for it, and this affects the Accounts Receivable balance. To illustrate, suppose that on 6 June the customer returns a $150 product because it is faulty. Howard would record the return with the following entry.

6 Jun.	Sales Returns and Allowances			150	
	Accounts Receivable				150
	(To record sales return)				
	Assets	=	Liabilities	+	Equity
	–150				–150

Sanitarium Health & Wellbeing. Reprinted with permission

Companies like Sanitarium (the manufacturer of Weet-Bix and Up & Go) commonly sell their products on account. Unfortunately, the receivables that are created are not always collected

Again, the example focuses only on the effect on receivables and ignores the effects on inventory and cost of goods sold.

The entry decreases Accounts Receivable for the sales price of the product. However, instead of decreasing the Sales account directly, the entry increases Sales Returns and Allowances. Sales Returns and Allowances is a contra-revenue account, meaning that its balance is subtracted from Sales when calculating a company's net sales. Companies use this account to maintain a record of returns each period. Like the Sales account, Sales Returns and Allowances is a temporary account, the balance is closed (zeroed out) at the end of each period (see 'LO4 Closing process', Chapter 4.)

In addition to returns, companies sometimes provide discounts to customers if they pay within a certain time period. For example, sales are commonly made with terms 2/70, n/30, meaning that customers can receive a 2 per cent discount if they pay within 7 days of the invoice. To illustrate, suppose that Howard grants terms of 2/7, n/30. On 10 June the customer pays the remaining $850 bill. By qualifying for a 2 per cent discount, the customer saves $17 ($850 × 2%) and pays only $833. Howard would record the receipt of payment as follows:

10 Jun.	Cash			833	
	Sales Discounts			17	
	Accounts Receivable				850
	(To record payment)				
	Assets	=	Liabilities	+	Equity
	+833				–17
	–850				

The entry increases Cash for the $833 payment and decreases Accounts Receivable for the full $850 balance. The difference, which equals the discount of $17 for timely payment, goes into the Sales Discounts account. Like Sales Returns and Allowances, the Sales Discounts account is a contra-revenue account that is subtracted from sales when calculating net sales. Companies use this account to maintain a record of discounts each period. It is a temporary account whose balance is closed at the end of each period. Some may treat sales discount as a 'financial expense' as it might be seen as a way of receiving cash earlier than would happen if there was no incentive for customers to pay quickly.

REPORTING ACCOUNTS RECEIVABLE

Because accounts receivables are expected to be collected within a month (or two), they are classified and reported as current assets. However, companies do not normally collect all their receivables because customers do not always pay their bills. Among other reasons, customers have financial hardships, relocate without paying or simply refuse to pay. As a result, companies must follow the principle of prudence and report their accounts receivable at net realisable value.

Net realisable value is the amount of cash that a company expects to collect from its total or gross accounts receivable balance. It is calculated by subtracting from gross receivables the amount that a company does not expect to collect. For example, a company that has $2000 of gross receivables but does not expect to collect $50 of them has receivables with a net realisable value of $1950. The amount that a company does not expect to collect goes by many names: provision for impairment loss, allowance for bad debts, allowance for doubtful debts, and provision for bad and doubtful debts. Here we use an 'Allowance' account as 'Provisions' may be confused with 'Equity' accounts. How companies estimate and record the allowance will be examined later in the chapter.

net realisable value The amount of cash that a company expects to collect from its total accounts receivable.

CSL ANALYSIS

Look at CSL's balance sheet in Appendix B. Can you tell whether the company's receivables are reported at net realisable value?

Analysis:

CSL's simply reports: 'Trade and other receivables'. The Accounts Receivable paragraph in Note 15 states:

> Trade and other receivables are initially recorded at fair value and are generally due for settlement within 30 to 60 days from date of invoice. Collectability is regularly reviewed at an operating unit level. Debts which are

known to be uncollectible are written off when identified. A provision for impairment loss is recognised when there is objective evidence that all amounts due may not be fully recovered.[1]

Note 15 shows in 2017 Trade receivables were $978.6 million Less: Provision for impairment loss $22.6 million. (In 2016 the figures were $958.8 million and $31.1 million).

Therefore, receivables are stated at net realisable value with an improvement (lowering) in the Provision in 2017.

To illustrate the reporting of receivables, consider the following receivables balances from CPA Australia's *Annual Report 2016*:[2]

	2016 $'000s	2015 $'000s
Current		
Trade and other receivables	2 425	7 804
Less allowance for doubtful debts	(24)	(102)
	2 401	7 702

The consolidated entity has recognised an allowance for doubtful debts of 100 per cent against all receivables over 90 days except for those debtors/members who at balance date have committed to pay. Historical experience has been that receivables that are past due beyond 90 days are difficult to recover.

In contrast, Chartered Accountants Australia and New Zealand, in its *Financial Report 2017*, 'Trade and other receivables', lists:[3]

	2017 $'000s	2016 $'000s
Current		
Trade receivables (a)	12 363	14 253
Allowance for impairment loss	(622)	(658)
	11 741	13 595

Trade receivables are recognised and carried at the original invoice amount less an allowance for impairment. We regularly review the collectability of trade receivables, and apply an impairment provision when there is evidence that the Group won't be able to collect. When we identify individual debts that are uncollectible, we write them off.

(a) Trade receivables are non-interest bearing and are generally on 30-day terms. A provision for impairment of $622 000 (2016: $658 000) has been raised to cover expected uncollectible debtors. The Group does not hold any collateral over these balances.

APPLY THIS

Check out the animated summary on Accounts Receivable

LO2 UNCOLLECTIBLE RECEIVABLES

As stated in the previous section, most companies are unable to collect all their accounts receivable. Losses from the inability to collect accounts receivable are recorded in the accounting system as **bad debt expense**.

bad debt expense
The expense resulting from the inability to collect all accounts receivable.

Because uncollectible accounts are a normal part of any business, bad debt expense is considered a normal operating expense. It is included in the calculation of net profits or losses but is usually combined with other operating expenses on the profit and loss statement. Thus, you will rarely find a company's bad debt expense listed separately. If you do, it is likely bad news because the amount was large enough to warrant individual reporting.

There are two methods to account for bad debt expense: the direct write-off method and the allowance method. Each method is discussed in the following sections.

MAKING IT REAL

COLLECTING RECEIVABLES

Businesses often need to offer credit to compete, but they then need to collect their receivables without alienating customers and obtaining a reputation for being a difficult supplier.

Waster (waster.com.au) bills around $80 000 per month, with each bill averaging $150. Co-founder Aodhan MacCath-mhaoil explains their strategy for combatting the possible negative effects of collecting receivables: 'Throughout this process we seek to be friendly and helpful as we want the customer to continue with us. This process is effective, though we have had incidences [sic] where we have not been paid' … 'We offer an ongoing service, so if a debt builds up for a few months, it can really start to snowball. Cash flow and collecting payments is vital for us'.[5]

DIRECT WRITE-OFF METHOD

Under the **direct write-off method**, bad debt expense is recorded when a company determines that a receivable is uncollectible and removes it from its records. The receivable is eliminated or 'written off' the company's accounting records, and bad debt expense is recorded for the amount of the receivable.

direct write-off method
Method in which bad debt expense is recorded when a company determines that a receivable is uncollectible and removes it from its records.

To illustrate, suppose that Chan makes a $4000 credit sale during October 2019 to Baron. In April 2020, Chan determines that it will be unable to collect from Baron. Chan would make the following entries to reflect this activity:

Oct. 2019	Accounts Receivable			4 000	
	Sales				4 000
	(To record sale on account)				
	Assets	=	Liabilities	+	Equity
	+4 000				–4 000
Apr. 2020	Bad Debt Expense			4 000	
	Accounts Receivable				4 000
	(To record bad debt expense and write off receivable)				
	Assets	=	Liabilities	+	Equity
	+4 000				–4 000

The first entry records the account receivable created from the sale. Both assets and equity increase as a result. The second entry increases Bad Debt Expense to reflect the loss incurred from the inability to collect from Baron. It also decreases Accounts Receivable to remove the receivable from Chan's records. As a result of this write-off, both assets and equity decrease. All write-offs under the direct method will result in the same basic entry. The only difference will be the dollar amount.

The major advantage of the direct write-off method is its simplicity. When an account is deemed uncollectible, it is written off and an expense is recorded. The major disadvantage is that it can violate the matching principle. The matching principle requires that expenses be matched as closely as possible to the period in which the related revenues are recognised. In the preceding example, the revenue is recorded in 2019, but the expense is recorded in 2020. Assuming that Chan prepares financial statements at the end of December, the expense is not recorded in the same year as the revenue.

Because the direct method violates the matching principle, generally accepted accounting principles prohibit its use. The only exception to this prohibition is when bad debt expense is immaterial to the company. For most companies, though, bad debt expense is material, so they must use the allowance method.

Using the direct method would have also overvalued Chan's asset. Accounts receivable at 31 December 2019 is in breach of the prudence concept; another reason for using the allowance method.

ALLOWANCE METHOD

While the direct write-off method accounts for uncollectible receivables with one entry, the **allowance method** splits the accounting into two entries – one to record an estimate of bad debt expense and another to write off receivables when they become uncollectible. Both entries are described in the following sections.

allowance method
Method in which companies use two entries to account for bad debt expense – one to estimate the expense and a second to write off receivables.

Recording bad debt expense

The purpose of the allowance method is to match the expense from uncollectible receivables to the period in which those receivables were created. To achieve this purpose, a company must record bad debt expense at the end of each accounting period. However, at the end of the period, the company does not yet know which receivables will be uncollectible.

Because of this inability to know which specific receivables will turn out to be uncollectible, the allowance method requires a company to set up an 'allowance' for uncollectible receivables when recording bad debt expense. That is, instead of writing off specific receivables at year-end, a company increases a contra-asset account called Allowance for Doubtful (Bad) Debts or Allowance for Impairment Loss. The **allowance for doubtful debts** represents the dollar amount of receivables that a company believes will ultimately be uncollectible. As described earlier, its balance is subtracted from gross receivables to yield the receivables' net realisable value.

allowance for doubtful debts
The dollar amount of receivables that a company believes will ultimately be uncollectible.

To illustrate, suppose that Duncan Sports makes credit sales of $800 000 during 2019. Based on experience, Duncan estimates that $16 000 of these sales will not be collected. Duncan would therefore make the following entries to record this activity:

During 2019	Accounts Receivable			800 000	
	Sales				800 000
	(To record sales on account)				
	Assets	=	Liabilities	+	Equity
	+800 000				+800 000

End of 2019	Bad Debt Expense			16 000	
	Allowance for Doubtful Debts				16 000
	(To record bad debt expense)				
	Assets	=	Liabilities	+	Equity
	–16 000				–16 000

The first entry increases Accounts Receivable and Sales for the credit sales during the year. This increases both assets and equity. The second entry increases both Bad Debt Expense and Allowance for Doubtful Debts by $16 000. This effectively matches the expense of future uncollectible receivables to 2019 sales. It also reduces Duncan's net realisable value of receivables by $16 000 because it is now allowing for $16 000 of those receivables to be uncollectible. As a result, both assets and equity decrease.

The same basic entry will be recorded each time bad debt expense is estimated under the allowance method. The only difference will be the amount of the estimate, which will depend on circumstances and the estimation method a company uses. Methods of estimating bad debt expense are covered later in the chapter.

Recording a write-off

Regardless of the method used to account for uncollectible receivables, a company must write off a receivable when it is deemed to be uncollectible. Under the direct write-off method, the company records bad debt expense at the time of the write-off. However, under the allowance method, bad debt expense has already been estimated and

recorded and an allowance balance created for uncollectible receivables. Therefore, instead of increasing bad debt expense at the time of the write-off, the company reduces the balance in the allowance account.

To illustrate, suppose that Duncan Sports determines in 2020 that a $5000 receivable from William Johnson is uncollectible and decides to write it off the books. Duncan would make the following entry:

2020	Allowance for Doubtful Debts			5000	
	Accounts Receivable				5000
	(To record write-off)				
	Assets	=	Liabilities	+	Equity
	–5000				
	+5000				

The entry decreases Accounts Receivable and decreases an equal amount of Allowance for Doubtful Debts. Note that the entry has no effect on total assets or profit or loss. More specifically, the entry has no effect on Duncan's net realisable value of receivables. This is because both the asset account and the contra-asset account are decreasing by the same amount, thereby offsetting one another. Duncan now knows that Johnson will not pay, but Duncan had already allowed for that possibility. Therefore, Duncan's expected cash receipts are unchanged. This will be the case for all write-offs under the allowance method.

Recording the recovery of a write-off

Occasionally, a company will collect a receivable that it had previously written off. For example, suppose that Johnson pays his bill in full later during 2020. When this payment occurs, the following two entries are made:

2020	Accounts Receivable			5000	
	Allowance for Doubtful Debts				5000
	(To reverse the original write-off)				
	Cash			5000	
	Accounts Receivable				5000
	(To collect the receivable)				
	Assets	=	Liabilities	+	Equity
	+5000				
	–5000				

The first entry simply reverses the original entry writing off the receivable. The second entry records the collection of cash and the reduction of the receivable. Notice that once again there is no effect on total assets by either of these two entries.

MAKING IT REAL

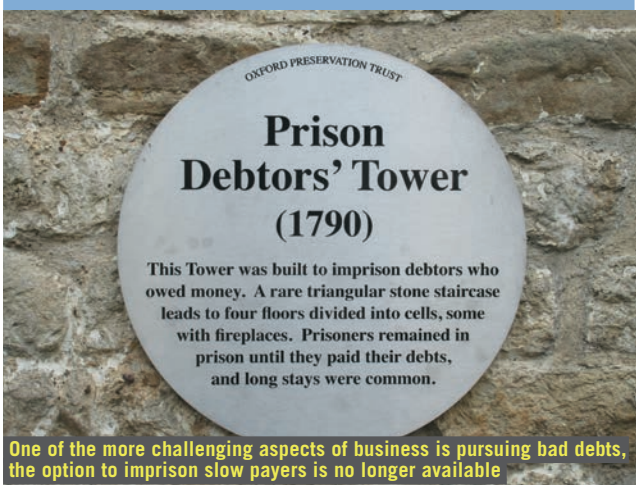
COLLECTING DEBTS

Most companies have a good idea of how long it takes them to collect their receivables. However, sometimes shocks to the economy can cause significant delays in collections. Take the Global Financial Crisis during which customer payments slowed significantly. This reduced cash flow is especially damaging to small businesses that might not have sufficient cash on hand to pay their own suppliers. This turns into a never-ending cycle where buyers and sellers are both past due on their bills and reduces the cash flow to the entire economy.

To combat this, companies are forced to alter their collections policies. Traditionally, buyers with delinquent accounts would have their credit slashed or cancelled. Now, companies are considering alternative approaches which do not place undue pressure on the customer in the hope of maintaining an agreeable relationship. The bottom line is that delayed collection of accounts receivable affects both the business and the customer. Longer collection cycles mean that businesses have a diminished cash flow and have to struggle to make do with less cash on hand. Without timely collections, many businesses are put in a situation where they might face delinquency with their own vendors or even bankruptcy from lack of liquidity.

You can get a copy of your credit report for free from a credit reporting body (CRB) in all of the following circumstances:

- if you have applied for, and been refused credit, within the past 90 days
- where your request for access relates to a decision by a CRB or a credit provider to correct information included in your credit report, and
- once a year (not counting the above circumstances).[5]



One of the more challenging aspects of business is pursuing bad debts, the option to imprison slow payers is no longer available

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LO3 ESTIMATING BAD DEBT EXPENSE

The previous section demonstrated how to record bad debt expense under the allowance method. This section demonstrates how to estimate the amount of bad debt expense to be recorded.

When estimating bad debt expense, companies may use one of two different approaches:

- percentage-of-sales approach
- percentage-of-receivables approach.

Both approaches use information such as past experience, industry norms or trends and current customer credit ratings to make the estimate as accurate as possible. Each approach is discussed in the following sections.

PERCENTAGE-OF-SALES APPROACH

percentage-of-sales approach
Method that estimates bad debt expense as a percentage of sales.

Under the **percentage-of-sales approach**, bad debt expense is a function of a company's sales. It is calculated by multiplying sales for the period by some percentage set by the company. For example, suppose a company with $250 000 of sales in 2019 estimates that it will not collect 4 per cent of those sales. The estimate for bad debt expense at the end of 2019 would be $10 000 ($250 000 × 4%). The entry to record the estimate is shown below.

End of 2019	Bad Debt Expense			10 000	
	Allowance for Doubtful Debts				10 000
	(To record bad debt expense)				
	Assets	=	Liabilities	+	Equity
	–10 000				–10 000

The advantages of this approach are its simplicity and the fact that it results in very good matching. Bad debt expense for a period is primarily a function of sales for that period. The main disadvantage is that no consideration is given to the resulting balance in the Allowance for Doubtful Debts account. It is simply the existing balance plus the current estimate. Since the allowance account is used to calculate net realisable value, the percentage-of-sales approach results in a less meaningful net realisable value of receivables.

PERCENTAGE-OF-RECEIVABLES APPROACH

percentage-of-receivables approach
Method that estimates bad debt expense as a percentage of receivables.

Under the **percentage-of-receivables approach**, bad debt expense is a function of a company's receivables balance. It is calculated in two steps. The first step is to calculate what the balance in the Allowance for Bad Debts account should be. This is accomplished by multiplying accounts receivable by a percentage set by the company. The second step is to adjust the allowance account to that calculated balance. The amount of the adjustment is bad debt expense for the period.

To illustrate, suppose that a company has a receivables balance of $24 000 at the end of 2019. Based on past experience, the company expects that 2 per cent of its receivables balance will be uncollectible. As a result, the balance in the allowance account at year-end should be 2 per cent of receivables, or a $480 credit balance ($24 000 × 2%). The next step is to make the adjustment.

Since the allowance method for bad debts relies on estimates, a company's allowance balance prior to adjustment can have either a debit or credit balance. A debit balance means that the company has experienced greater write-offs during the year than expected. A credit balance indicates that write-offs have been less than expected. Whether the balance is a debit or credit does not require a company to correct its bad debt expense from the prior year. However, it does affect the adjustment for the current year.

To illustrate, assume that the allowance account has a $100 credit balance prior to adjustment. To get the balance to a $480 credit requires a $380 credit entry. Therefore, bad debt expense for the period is $380. This is illustrated as follows:

Allowance for Bad Debts		
	100	Existing balance
	380	Adjustment required = Bad Debt Expense
	480	Desired balance ($24 000 × 2%)

End of 2019	Bad Debt Expense			380	
	Allowance for Doubtful Debts				380
	(To record bad debt expense)				
	Assets	=	Liabilities	+	Equity
	–380				–380

In contrast, assume that the allowance account has a $50 debit balance prior to adjustment. In that case, the necessary adjustment is a $530 credit entry. Therefore, bad debt expense for the period is $530. This is illustrated as follows:

Allowance for Bad Debts		
50		Existing balance
	530	Adjustment required = Bad Debt Expense
	480	Desired balance ($24 000 × 2%)

End of 2019	Bad Debt Expense		530	
	Allowance for Doubtful Debts			530
	(To record bad debt expense)			
	Assets	= Liabilities	+	Equity
	–530			–530

The major advantage of the percentage-of-receivables approach is that it results in a very meaningful net realisable value. This is because the allowance account is determined as a set percentage of receivables. The disadvantage is that it does not match expenses as well as the percentage-of-sales approach. This is because the adjustment necessary is a function of both the set percentage and a company's prior experience with write-offs. As a result, current expenses are affected by prior-year experiences.

Ageing of accounts receivable

Many companies use a more refined version of the percentage-of-receivables approach. Recognising that receivables become less collectible as they get older, companies often prepare ageing schedules for their receivables. An **ageing schedule** is a listing and summation of accounts receivable by their ages. Normally, receivables that are outstanding for 30 days or less are considered current and are grouped together. Receivables outstanding longer than 30 days are considered past due and are grouped together in 30-day increments. Companies then apply increasing uncollectible percentages to older receivables.

ageing schedule
A listing of accounts receivable by their ages.

To illustrate, suppose that SC Works prepares an ageing schedule at the end of 2019 as shown in Exhibit 6.1. SC Works reports $66 000 of receivables and breaks them into 'current' and several categories of 'past due'. Each category is assigned an expected percentage of uncollectible receivables that rises as the age of the receivables increases. The necessary allowance balance is then calculated by summing the totals from each category.

You may remember from our earlier example from CPA Australia's *Annual Report 2016*, where it was stated that 'historical experience has been that receivables that are past due beyond 90 days are difficult to recover'.

Assuming that SC Works has a credit balance of $870 in the allowance account prior to recording bad debt expense, the company would make the following entry to record bad debt expense.

Allowance for Bad Debts		
	870	Existing balance
	3 187	Adjustment required = Bad Debt Expense
	4 057	Desired balance

End of 2019	Bad Debt Expense		3 187	
	Allowance for Doubtful Debts			3 187
	(To record bad debt expense)			
	Assets	= Liabilities	+	Equity
	–3 187			–3 187

As you can see, the entry to record bad debt expense is the same as previously described. The difference is that an ageing schedule provides a more accurate estimate of the allowance for doubtful debts and therefore a better estimate of bad debt expense. But an ageing schedule has another benefit. It is a good internal control activity.

Recall from Chapter 5 that control activities are one of the five elements of a good internal control system. They are procedures put in place to assist companies in operating and reporting efficiently and effectively. Keeping track of receivables and their ages helps meet these objectives. For example, an ageing schedule provides the information a company needs to pursue its receivables effectively. It also provides information for future credit decisions. A company may hesitate to provide credit to customers who have past due receivables.

	Number of days past due					
Customer	**Current**	**1–30**	**31–60**	**61–90**	**Over 90**	**Total**
Ma Manufacturing			$4 100			$ 4 100
Chen Company					$2 400	2 400
WAG, Limited				$2 750		2 750
Others	44 450	10 400	1 000	1 200	300	57 350
Totals	44 450	10 400	5 100	3 950	2 700	66 600
* % Uncollectible	1%	3%	15%	30%	50%	
Allowance Balance	$ 445	$ 312	$ 765	$1 185	$1 350	$ 4 057

EXHIBIT 6.1 Ageing schedule of accounts receivable – SC Works

* The percentages will depend on the business' past experience, their credit policy and current economic conditions.

LO4 ANALYSING ACCOUNTS RECEIVABLE

Any investor, creditor, or manager of a company should be interested in how well a company manages its accounts receivable. Because a receivable is an uncollected sale, the main question that should be asked of a company is how well it collects its receivables. In general, better collection means better management of receivables.

Non-financial companies usually do not disclose bad debts expense because it is immaterial as part of total expenses. However, in 2017 CPA Australia provided more insight into its receivables. The analysis requires information from the 'statement of financial position' (balance sheet) and 'statement of profit and loss and other comprehensive income' and the notes to the accounts.[6]

HORIZONTAL AND VERTICAL ANALYSES

A good place to start the analysis of accounts receivable is with horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance less the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account is total assets for financial position and net sales or total revenues for statement of income accounts. These calculations are summarised as follows:

KEY FORMULA 6.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

KEY FORMULA 6.2 VERTICAL ANALYSIS

$$\text{Percentage} = \text{For the balance sheet} = \frac{\text{Account Balance}}{\text{Total Assets}} \quad \text{or} \quad \text{For the income statement} = \frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$$

Source	Accounts	2017 $000	2018 $000
Statement of Profit and Loss	Revenue	176 374	175 672
	Amount written off as uncollectible (Note 7)	0	38
Statement of Financial Position	Trade and Other Receivables	2 451	2 474
	Total Assets	207 315	195 390

EXHIBIT 6.2 Account balances from the CPA Australia's Integrated Report 2017

Source: CPA Australia, 2017, Integrated Report 2017, https://www.cpaaustralia.com.au.

Given the CPA's financial information in Exhibit 6.2, horizontal and vertical analyses of accounts receivable and sales result in the calculations below. Note that the net realisable value of receivables, as reported on the statement of financial position, is used in the calculations.

Horizontal analysis		
	Dollar change	Percentage change
Trade and Other Receivables	$\frac{2\,451}{-2\,474} = (23)$	$\frac{(23)}{-2\,474} = 1\%$
Revenue	$\frac{-176\,374}{175\,672} = 702$	$\frac{702}{175\,672} = 0.4\%$
Vertical analysis		
	2017	2016
Trade and Other Receivables	$\frac{2\,451}{207\,315} = 1.2\%$	$\frac{2\,474}{195\,390} = 1.3\%$
Bad Debts Expense	$\frac{0}{176\,374} = 0.0\%$	$\frac{38}{175\,672} = 0.02\%$

Source: CPA Australia, 2017, Integrated Report 2017, https://www.cpaaustralia.com.au/.

The calculations show a small decrease in the CPA's receivables. Horizontal analysis shows that CPA's receivables balance decreased by only $23 000, or 1 per cent, in 2017. Horizontal analysis of sales shows growth in sales of under $1 million, or less than half of 1 per cent, during the year, so it does not appear that receivables are lower because of sales, which were higher. But the change in the numbers is very small and limited conclusions can be drawn. Vertical analysis also shows that receivables as a percentage of assets were lower, 1.3 per cent in 2016 to 1.2 per cent in 2017. Bad debts appear not to be a problem for the CPA even in 2016 they still make up less than $1 for every $4600 of revenue!

RECEIVABLES TURNOVER RATIO

The preceding analysis indicates that the CPA appears to be managing its receivables very well. Another means to assess the management of receivables is to calculate a company's

receivables turnover ratio
A comparison of credit sales to receivables that measures a company's ability to generate and collect receivables.

receivables turnover ratio. The **receivables turnover ratio** compares a company's credit sales during a period to its average receivables balance during that period. It is calculated as follows:

CPA Australia's Integrated Report 2017

KEY FORMULA 6.3 RECEIVABLES TURNOVER RATIO

$$\text{Receivables Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Receivables}}$$

Where average receivables is:

Beginning Receivables + Ending Receivables/2

Because the ratio divides credit sales during a period by the average receivables balance during the period, it indicates how many times during a period a company generates and collects receivables. In general, companies want this ratio to be higher rather than lower because a higher ratio indicates that the company collects, or turns over, its receivables faster.

For most reporting entities (financial statements are publicly available) it is not possible to calculate receivables turnover because the percentage of sales made on credit is unknown. For CSL most sales are probably made on credit. For CSL, if we assumed all operating revenue was on credit, the figure is likely to be overstated:

$$\frac{6922.8}{(1107.2 + 1170.4)/2} = 6.08 \text{ times}$$

The 6.08 ratio indicates CSL's 2017 sales were just over six times its average receivables balance. In other words, the company was able to generate and collect its receivables balance over six times in 2017, every sixty days.

Beyond the issue of not knowing how many sales are on credit, the receivables turnover ratio is sometimes difficult to interpret, so it is often converted into the days-in-receivables ratio. The **days-in-receivables** (ratio) divides the receivables turnover ratio into 365 days to express, in days, how long it takes a company to generate and collect its receivables. Thus, the days-in-receivables is calculated as follows:

days-in-receivables
A conversion of the receivables turnover ratio that expresses a company's ability to generate and collect receivables in days.

KEY FORMULA 6.4 DAYS-IN-RECEIVABLES

$$\text{Days-in-Receivables Ratio} = \frac{365}{\text{Receivables Turnover Ratio}}$$

$$\frac{365}{6.08} = 60.03 \text{ days}$$

A ratio of 60.03 indicates that it takes CSL about sixty days between selling an item and collecting the receivable. Although we do not know, if we assume 50 per cent of CSL's sales were on credit, then its days-in-receivables would be 120 days. Whether this is good or bad requires some comparison, looking at the prior year as well as similar businesses. But caution would still be needed because some businesses attract customers by advertising 'easy credit', obviously expecting higher bad debts and slower receivable turnover, and possibly compensating by selling at higher prices than competitors not offering such generous buy-now-pay-later conditions. Because governments are notoriously slow payers, CSL may be prepared to wait six months for some governments to pay.

ALLOWANCE RATIO

One additional ratio that is useful in analysing a company's management of receivables is the allowance ratio. The **allowance ratio** compares the allowance account to gross accounts receivable to determine the percentage of receivables that are expected to be uncollectible in the future. It is calculated as follows:

allowance ratio
A comparison of the allowance account to receivables that measures the percentage of receivables that are expected to be uncollectible in the future.

KEY FORMULA 6.5 ALLOWANCE RATIO

$$\text{Allowance Ratio} = \frac{\text{Average for Doubtful Debts}}{\text{Gross Receivables}}$$

Where gross accounts receivable is:

Net Account Receivables + Allowance for Doubtful Debts

A higher ratio indicates that a company expects more receivables to be uncollectible. In general, a company would want this ratio to be as low as possible. The CSL allowance (provision) ratio for 2016 and 2017 is calculated as follows from the information in its balance sheet and Note 15 trade receivables. This shows a marked improvement in 2017.

2017		2016	
22.6 / 1170.4	= 1.9%	31.1 / (1107.2)	= 2.8%

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LO5 NOTES RECEIVABLE

An account receivable is an amount owed by a customer who has purchased the company's product or service. Sometimes, because of a customer's poor credit rating or because of the size of the transaction, a company will enter into a more formal agreement with the customer beyond a normal account receivable. This is often accomplished through a **promissory note**, which is a written promise to pay a specific sum of money on demand or at some specific date in the future. Promissory notes can be used to formalise a receivable or to loan money to another entity. In most cases, promissory notes require the payment of both principal *and* interest. The company that will receive the principal and interest is called the *payee*. The customer or borrower who will pay the interest and principal is called the *maker* of the note. We focus on accounting for the payee.

promissory note
A written promise to pay a specific sum of money on demand or at some specific date in the future.

CSL ANALYSIS

Using CSL's financial statements in Appendix B, calculate and interpret (1) horizontal analysis and (2) vertical analyses of accounts receivable and sales.

Analysis:

1 Horizontal analysis

Accounts Receivable (Trade and other receivables):

($1170.4 – $1107.2) / $1107.2 = 5.7%

Sales Revenue:

($6515.8 – $5909.5) / $5909.5 = 10.2%

2 Vertical analysis

Accounts Receivable (2017):

$1170.4 / $9122.7 = 12.8%

Sales Revenue (as a percentage of Total operating revenue):

$6615.8 / $6922.8 = 95.6%

The 5.7 per cent horizontal analysis indicates that receivables increased during the year by almost 6 per cent. With an increase in sales of over 10 per cent, an increase in receivables would be expected, and probably an even bigger increase. The 12.8 per cent vertical analysis indicates that a high proportion of CSL's assets are in the form of receivables. If you read all of its annual report this would be expected given CSL's major customers are governments and large medical companies. Finally, CSL makes the vast majority of its revenue from the sale of goods; some comes from royalties and licence fees.

When a company accepts a promissory note, it has a note receivable. Like other assets, a note receivable is reported on the balance sheet. However, its classification depends on its terms. If the note is due within a year, it is classified as a current asset. Otherwise, it is a non-current asset.

Accounting for a note receivable usually requires entries to record the following:

- issuance of the note
- interest earned on the note
- collection of the note.

To illustrate, suppose that on 1 November 2018, Tata Industries sells industrial robots to Zjax for $184 000. Tata accepts a six-month, 6 per cent promissory note from Zjax for payment. The note stipulates that Tata will receive both principal and interest from Zjax on 30 April 2019.

RECORDING THE NOTE

A note receivable is recorded at its face value, which is $184 000 in this example. Therefore, Tata would record the sale of the robots and the resulting **note receivable** as follows:

note receivable
An asset created when a company accepts a promissory note.

1 Nov. 2018	Note Receivable	184 000	
	Sales		184 000
	(To record sale in exchange for a promissory note)		

Assets	=	Liabilities	+	Equity
+184 000				+184 000

In this entry, Tata increases the Note Receivable account to reflect the receipt of the promissory note and increases Sales to reflect the earning of revenue. As a result, both assets and equity increase. As in previous examples in this chapter, the effects on inventory and cost of goods sold are ignored.

RECORDING INTEREST

Most promissory notes require that the maker pay interest to the payee. The amount of interest is a function of the principal or face value of the note, the annual interest rate and the length of time the note is outstanding. The calculation is as follows:

In this example, Tata's note receivable is outstanding for only six months. As a result, interest of 6 per cent will be charged for six of the twelve months of the year.


Alamy Stock Photo/Gam Phakathunya

I, robot

KEY FORMULA 6.6 INTEREST EARNED

Interest Earned = Principal × Annual Rate of Interest × Time Outstanding

Therefore, interest over the life of the note is $5520, calculated as follows:

Interest = Principal × Annual rate of interest × Time outstanding
= $184 000 × 0.06 × 6/12 months
= $5520

According to the calculation, Tata will receive $5520 of interest at the maturity of the note. However, the revenue recognition principle requires companies to record interest revenue when it is earned, even if cash will not be received until later. Assuming that Tata has a financial year-end prior to the maturity of the note, it must make an adjusting journal entry to record interest earned during the year. Recall from Chapter 4 that such an entry is an accrual adjusting entry.

To illustrate, suppose that Tata prepares financial statements on 31 December. Tata has not yet received any interest payment from Zjax because payment is not required until 30 April 2019. However, Tata has earned two months of interest, calculated as follows:

Interest earned = Principal × Annual rate of interest × Time outstanding
= $184 000 × 0.06 × 2/12 months
= $1840

On 31 December Tata would record this interest revenue as follows:

31 Dec. 2018	Interest Receivable		1 840		
	Interest Revenue				1 840
	(To record interest earned on note)				
	Assets	=	Liabilities	+	Equity
	+1 840				+1 840

This entry increases Interest Receivable to reflect the additional receivable Tata now has from Zjax. Tata will report this receivable on its balance sheet until the interest is paid in April 2019. The entry also increases Interest Revenue to reflect the inflow of assets attributable to the year 2019. As a result, both assets and equity increase.

COLLECTING THE NOTE

The collection of a note receivable is much like the collection of an account receivable. When a note is collected, the note receivable is decreased and cash is increased. However, when a note receivable requires interest to be paid, the collection of the note often includes the collection of interest as well. This is the case for Tata.

On 30 April 2019, Tata collects cash and interest from Zjax. The total interest over the six months Tata held the note is $5520. The principal is $184 000. Therefore, Tata receives $189 520 in cash, recorded as follows:

30 April 2019	Cash		189 520		
	Interest Receivable				1 840
	Note Receivable				184 000
	Interest Revenue				3 680
	(To record collection of note)				
	Assets	=	Liabilities	+	Equity
	+189 520				+3 680
	−184 000				
	−1 840				

This entry has four parts. First, the entry increases Cash for the amount of cash collected by Tata. Second, it decreases Interest Receivable to eliminate the asset that was created by the 31 December adjusting entry. Third, the entry decreases Note Receivable by its principal value because the note has been collected and is no longer outstanding. Finally, the entry increases Interest Revenue for the four months of interest (January through April) earned in the current period ($184 000 × 6% × 4/12). This interest revenue will be reported on Tata's 2019 statement of comprehensive income. The result of the entry is a net increase to assets of $3680 and an increase to equity of $3680. If this seems low to you, remember that equity was increased substantially when the sale was made and the note created. When Tata collects the note, it is simply exchanging one asset for another. The net $3680 increase to assets and equity results from the interest earned during the three months of the current year.

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Recording accounts receivable

LO1

On 4 March, Cole Company sells office supplies to a customer for $60 000. Terms of the sale are 1/15, n/30. On 10 March, the customer returns $6000 of the goods. The customer pays on 15 March.

REQUIRED

Prepare all journal entries to record the sale, its return and the collection of the receivable. Ignore any effects on inventory or cost of goods sold.

2 Recording sales returns

LO1

On 5 March, Monica's Cooking Company sells inventory to a customer for $3000. On 13 March, the customer returns $750 of merchandise. The accountant recorded the return with the following entry:

13 March	Sales	750	
	Accounts Payable		750

REQUIRED

Prepare the entry the accountant should have made when the merchandise was returned on 13 March and explain why the accountant's entry was incorrect. Ignore any effect on cost of goods sold or inventory.

3 Reporting accounts receivable

LO1

The following records the receipt of cash from a debtor within the discount period:

Cash	2 425	
Sales Discounts	75	
Accounts Receivable		2 500

REQUIRED

Explain why the customer has paid only $2425 yet has their debt reduced by the full $2500?

4 Direct write-off method

LO2

Masters sells $7500 of goods to Johnson during January. In April, Masters determines that it will be unable to collect the receivable from Johnson.

REQUIRED

Prepare the journal entries to record the sale and the bad debt expense if Masters uses the direct write-off method. Ignore any effect on cost of goods sold or inventory.

5 Recording bad debt expense

LO2

While reviewing outstanding accounts receivables, Frankie determines that a receivable of $5000 is now uncollectible.

REQUIRED

Journalise the entry to record bad debt expense assuming Frankie uses the direct write-off method. Why might the direct write-off method be used? What are the limitations of the direct write-off method on the balance sheet and income statement.

6 Estimating bad debt expense

LO3

A company uses the percentage-of-sales approach to estimate bad debts. Sales for the year were $750 000 and gross profit was $450 000. The company estimates that 5 per cent of sales are uncollectible.

REQUIRED

What is the company's estimated bad debt expense for the year? Would your answer change if the company was able to increase its gross profit from its sales?

7 Allowance method

LO2, 3

Le uses the allowance method to account for bad debt expense. Le makes credit sales of $170 000 during the year. At year end, Le estimates that $9000 of those sales will not be collected. The next year, Le determines that a $2500 receivable is uncollectible and should be written off.

REQUIRED

Prepare the journal entries to record the credit sales, bad debt expense and the write-off of uncollectible accounts.

8 Estimating bad debt expense

LO3

Rachel's Clothing Company has a receivables balance of $105 000 at the end of the year. Based on past history, Rachel estimates that it will not collect 2 per cent of its receivables balance. Prior to any year-end adjustment, the balance in the allowance account was $200 debit.

REQUIRED

a Prepare the journal entry to record bad debt expense for the year. Show your calculation of bad debt expense in T-account form.

b Assume that the balance in the allowance account was a $100 credit instead of the $200 debit. What is bad debt expense in this situation? Show your calculation in T-account form.

9 Horizontal and vertical analyses

LO4

The following information pertains to Lara Limited:

	2020	2019
Net sales	$350 000	$342 000
Net accounts receivable	189 000	197 000
Bad debt expense	8 200	7 000
Total assets	410 000	425 000

REQUIRED

Prepare horizontal analyses of all four accounts and vertical analysis for bad debts expense and net accounts receivables. Round percentages to one decimal point (e.g. 23.9%).

10 Analysing receivables

LO4

The following information pertains to Thirroul Theme Parks:

Credit sales	$900 000
Net accounts receivable, beginning	63 000
Net accounts receivable, ending	54 000
Allowance for doubtful debts, ending	5 000

REQUIRED

Calculate Thirroul's receivables turnover ratio, days-in-receivables ratio and allowance ratio.

11 Effects of recording bad debt expense

LO2, 3, 4

You are the company secretary and shareholders are asking about how some of the accounting methods have impacted the figures in the financial statements. The chairwoman has passed you a note during the annual meeting asking you to fill out the information below so she can explain the effect of the allowance method:

	Net income	Amount in accounts receivable account	Amount of accounts receivables reported on the financial statements	Receivables turnover ratio
Effect of bad debt expense entry				

REQUIRED

Fill out the grid with increase, decrease or no effect.

12 Accounting for notes receivable

LO6

On 1 March, Abby Actuarial accepted from Nguyen Networks a six month, 8 per cent, $120 000 note receivable and $30 000 in cash, in payment for professional services. The note and interest were paid at maturity on 1 September. Abby has a 30 June year end.

REQUIRED

Prepare all journal entries Abby would make to properly account for the service and note.

13 Uncollectible receivables

LO2

Le Ma reported the following information in its latest annual report:

Allowance for bad debts, beginning balance	$5 325
Bad debt expense for the year	975
Accounts receivable written off during the year	795

REQUIRED

Determine which method of accounting for bad debts Le Ma uses, record all journal entries associated with the allowance account for the year, and determine the ending balance in the allowance account.

14 Uncollectible receivables

LO2, 3

At 31 December, Duong Designers had gross accounts receivable of $346 000. Historically, Duong's Designers has estimated bad debt expense as 3 per cent of gross receivables.

REQUIRED

a Calculate bad debt expense for the year, assuming that the allowance account currently has a credit balance of $5000. Again, calculate the expense assuming a debit balance of $1200.

b Assume that on 29 December an account receivable of $1000 was deemed uncollectible and written off. Prepare the journal entry to record this event. What effect does this have on (i) profit or loss this financial year (ii) the net realisable value of receivables?

15 Ageing schedule for accounts receivable

LO3

Outdoor Living has the following accounts receivable at year end, broken down by age:

Age	Amount
Current	$150 000
One month overdue	40 000
Two months overdue	18 000
Three months overdue	8 000
Four months overdue	11 000

Prior experience has shown that the company will probably collect 95 per cent of its current receivables. Furthermore, the collection percentage will fall by 10 per cent (85%, 75% etc.) for each additional month an account receivable remains outstanding past its due date.

REQUIRED

Develop an estimate of Outdoor Living's allowance account balance and prepare the journal entry for bad debt expense, assuming first the allowance has an existing $4000 credit balance and second $1000 debit balance.

16 Recording notes receivable

LO5

On 1 April, Choi Corporation accepted cash of $15 000 and a six month, 6 per cent, $85 000 interest-bearing note from Palaza, Inc., as settlement of an account receivable. Choi has a fiscal year end of 30 June, and Palaza paid the principal and the interest at maturity.

REQUIRED

Identify the note's maker and payee and prepare all appropriate journal entries from the acceptance of the note to the maturity date for the payee.

17 Interest on notes receivable

LO5

Consider the following independent scenarios:

i On 1 September last year, a company accepted a $20 000, 8 per cent, six-month note receivable.

ii On 15 December last year, a company accepted a $15 000, 10 per cent, four-month note receivable.

iii On 1 March this year, a company accepts a $10 000, 5 per cent, eight-month note receivable.

REQUIRED

Assuming a 30 June (this year) financial year-end, calculate current-year interest revenue for each of the above.

PROBLEMS

18 Accounts receivable entries

LO1, 2, 3

During the 2019–20 financial year El-Kheir Electronics entered into the following transactions:

Sales on account	$1 400 000
Collections of credit sales	1 225 000
Write off accounts deemed uncollectible	20 000
Received payments on accounts previously written off	7 500

On its balance sheet for the year ended 30 June 2020, El-Kheir reported gross accounts receivable of $707 000 credit and an allowance account of $43 000 debit.

REQUIRED

Prepare all journal entries to record each of the transactions that occurred in 2019–20 and the journal entry to record bad debt expense at 30 June 2020, assuming that 5 per cent of accounts receivable at 30 June are uncollectible.

19 Comparing methods for uncollectible receivables

LO2, 3

The following data pertains to the operations of Knight Kiters for 2021:

Net credit sales	$925 000
Net operating income (before bad debt expense)	135 000
Write-offs of uncollectible accounts	17 500
Estimated uncollectible percentage of net credit sales	2%

The chartered accountant is trying to decide which method of accounting for bad debts to use. Knight Kiters is attempting to maximise total comprehensive income to meet projected figures. The bad debt expense is material to the company's financial statements.

REQUIRED

a Calculate bad debt expense for 2021 under the direct write-off method and the allowance method.

b Calculate profit or loss under both methods (assume a tax rate of 25 per cent).

c As a reporting entity does Knight Kiters have the option of which method to use under Australian Accounting Standards?

20 Analysing receivables

LO4

The following information was taken from the annual reports of two high-end jewellery retailers:

	Company A	Company B
Net accounts receivable, 2021	$ 584 000	$ 460 000
Net accounts receivable, 2020	505 000	398 000
Net revenues, 2021	2 425 000	2 195 000
Net revenues, 2020	2 200 000	1 500 000

REQUIRED

a Calculate the 2021 receivables turnover ratio for both companies.

b Compare the two companies. Which one is more efficient with its receivables?

c What other methods and factors would you consider when evaluating receivables? What other comparison demonstrates one company's efficiency over the other?

21 Recording notes receivable

LO5

On 15 February, Tran Corporation sold equipment to Adams Corporation on account for $40 000. On 1 November, Tran deemed the account uncollectible and wrote it off. On 31 December, Adams offered Tran a six month, 10 per cent, $40 000 promissory note in payment of its obligation, which Tran accepted. Adams paid the principal and the interest at the maturity date. Tran uses the allowance method for bad debts.

REQUIRED

a Prepare all of Tran's necessary journal entries from the date of the equipment sale to the maturity date of the note. Ignore any effect on inventory or cost of goods sold.

b What would be Tran's motives for offering a promissory note in settlement of such an old debt?

CASES

22 Research and analysis

LO1, 4

Access the latest annual report for Cochlear Limited (ASX: COH) (or a company chosen by your lecturer).

REQUIRED

a Examine the company's statement of comprehensive income and balance sheet and conduct horizontal and vertical analyses of what you consider to be the four most relevant accounts in both statements.

b Examine the company's receivables note. Answer as many of the following as the information provided in the notes to the accounts allows:

- **i** What is the company's current year balance in its allowance for doubtful debts (allowance for impairment loss or similar-named) account?
- **ii** What factors are considered when estimating the balance?
- **iii** How often is the balance reviewed?
- **iv** What likelihood does the company require before it writes off a receivable?
- **v** Why are there receivables 'past due' but not impaired?
- **vi** How does the company assess the risk and/or make estimates/judgements?

c With the gathered information, calculate the company's receivables turnover and days-in-receivables ratios for the current financial year, and the company's allowance ratio for the current and previous financial year. Why should you be careful in interpreting these results (think – do you know sales on credit or just total sales)?

d Based on your answers above, write a paragraph explaining your opinion of the company's receivables position. Use your answers as supporting facts (remember all sales may not be credit sales).

23 Ethics in accounting

LO2, 3

The Cho Corporation is in the process of closing its books for the year. The company has been growing at an unexpected rate. The chief accountant at Cho is currently determining the applicable percentage for the allowance for bad debts and believes it should be based on 3 per cent of net credit sales. The CEO of the company has expressed concerns about achieving future market expectations and approached the chief accountant with a request to increase the allowance for bad debts to 6 per cent of net credit sales with the expectation that the lower net income will decrease the pressure to perform in future years.

REQUIRED

a What factors should be considered when determining the applicable percentage to apply when using the income statement or balance sheet approach?

b Should the chief accountant be concerned with the company's growth rate when determining the allowance for bad debts? Explain.

24 Written communication

LO2, 3

The Chief Financial Officer (CFO) of a manufacturing plant that sells light machinery throughout Australasia is currently training new employees. In today's training session the group is told that total credit sales for the year is $900 million, accounts receivable total $120 million less a $3 million allowance for bad debts, and bad debt expense is $2 million. At the end of the session the group is asked if they understand everything discussed; and all say yes except one trainee who is still somewhat confused about why bad debt expense and the allowance balance differ.

REQUIRED

As one of the trainees who understands the training session, the CFO asks you to research this issue and prepare a presentation explaining the difference to present to the other trainees tomorrow. The presentation should run between three and five minutes and should include some PowerPoint slides.

7

Inventory

This chapter examines the accounting for inventory. In particular, it examines how businesses record their inventory and how they determine the cost of the inventory that is sold. It also examines how inventory can be estimated if needed and how inventory must be adjusted if its market value falls below its cost. The chapter then concludes with an analysis of a business' inventory position. The appendix covers inventory accounting under a periodic (sometimes known as a physical inventory) system.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe inventory and how it is recorded, expensed and reported.
2. Calculate the cost of sales using different inventory costing methods.
3. Understand the profit and loss effects of inventory cost flow assumptions.
4. Demonstrate how inventory can be estimated.
5. Apply the lower-of-cost-and-net-realisable-value rule to inventory.
6. Evaluate inventory through the calculation of horizontal, vertical and ratio analyses.
7. Appendix: record purchases and calculate the cost of sales under a periodic system.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

LO1 RECORDING, EXPENSING AND REPORTING INVENTORY

Inventory is a tangible resource that is held for resale in the normal course of operations. For a retailer, inventory is the stock (merchandise, goods) on the shelves or in the warehouse. For a car dealership the cars are inventory while for most businesses cars are non-current assets. When a business decides to sell a non-current asset, such as a car, it is not considered to be inventory because it was not purchased and held as 'intended for resale'. For a manufacturer, inventory also includes the raw materials and work-in-process related to producing a finished product, which you may study in managerial accounting.

inventory A tangible resource that is held for resale in the normal course of operations.

Check out the video summary for Chapter 7 APPLY THIS

RECORDING INVENTORY

Following the cost principle, inventory is recorded at its acquisition cost. This includes all costs incurred to get the inventory delivered and, if necessary, prepared for resale. Like buying on eBay, we are interested in how much it costs in total (is 'postage' included, will we need to buy batteries separately) not just the 'price'. Cost also includes any reductions granted by the vendor or supplier after purchase. Examples of items affecting the cost of inventory would include, but is not limited to, the following:

- purchase price
- taxes or duties paid
- cost of shipping and transit insurance
- labour required to assemble the product
- returns to, allowances from (including purchase discounts) from the supplier.

While inventory is recorded at cost, how it is recorded in the accounting system depends on the inventory system that a business uses. A **perpetual inventory system** updates the Inventory account each time inventory is bought and sold – that is, perpetually. Therefore, purchases of inventory are

perpetual inventory system Updates the inventory account each time inventory is bought or sold.

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For a retailer, inventory is an important asset, and accounting for it properly affects both the balance sheet and the income statement

periodic (physical) inventory system Updates the inventory account only at the end of an accounting period.

recorded directly into the Inventory account. In contrast, a **periodic (physical) inventory system** updates the inventory account only at the end of an accounting period – that is, periodically. Instead of recording purchases into the inventory account, they are recorded in an account called **Purchases**, which is a temporary account that is closed to Inventory at the end of the period. This chapter will demonstrate inventory accounting under a perpetual system. The periodic system is demonstrated in the appendix to this chapter.

purchases An account used to accumulate the cost of all purchases.

To illustrate the recording of inventory, suppose that Thirroul Takeaway purchases $20 000 of inventory on account (on credit) on 10 October. The purchase would be recorded as follows:

10 Oct.	Inventory			20 000	
	Accounts Payable				20 000
	(To record purchase of inventory)				
	Assets	=	Liabilities	+	Equity
	+20 000		+20 000		

Both assets and liabilities increase as a result of this transaction.

In some cases, a business must pay for the transportation ('postage'). Such additional costs are called **transportation-in** and are added to the overall cost of the inventory. To illustrate, suppose that Thirroul pays a third-party carrier $300 to transport the inventory to its warehouse. Thirroul would record the payment with the following entry:

transportation-in An account that accumulates the transportation costs of obtaining the inventory.

10 Oct.	Inventory			300	
	Cash				300
	(To record transportation-in)				
	Assets	=	Liabilities	+	Equity
	+300				
	–300				

Sometimes, a business will return inventory to the vendor (supplier) or seek some reduction in the cost of the inventory due to defective merchandise (inventory). The former is called a **purchase return**, while the latter is a **purchase allowance**. Both reduce the cost of the inventory purchased.

purchase returns and allowances An account that accumulates the cost of all inventory returned to vendors as well as the cost reductions from vendor allowances.

To illustrate, suppose that on 12 October Thirroul is granted a $1000 reduction in the cost of the goods (inventory) due to blemishes on the inventory. Even though Thirroul keeps the inventory, its cost has decreased due to the purchase allowance. Therefore, Thirroul would reduce the cost of the inventory and the amount payable to the vendor with the following entry:

12 Oct.	Accounts Payable			1 000	
	Inventory				1 000
	(To record purchase allowance granted by vendor)				
	Assets	=	Liabilities	+	Equity
	–1 000		–1 000		

In addition to returns and allowances, companies sometimes receive discounts from vendors if payment is made within a certain time period. Such *purchase discounts* reduce the cost of the inventory. To illustrate, suppose that Thirroul pays its remaining $19 000 bill to the vendor on 15 October, which qualifies Thirroul for a 1 per cent discount. As a result, Thirroul would save $190 ($19 000 × 1%) and pay only $18 810. The entry to record payment would be as follows:

15 Oct.	Accounts Payable			19 000	
	Inventory				190
	Cash				18 810
	(To record payment)				
	Assets	=	Liabilities	+	Equity
	–190		–19 000		
	–18 810				

The entry decreases Accounts Payable for the full $19 000 (since the debt is paid in full) and decreases Cash by the $18 810 paid. The difference is a reduction to Inventory because the purchase discount of $190 has reduced the cost of the inventory. Both assets and liabilities decrease.

In some circumstances the supplier may allow a long period before payment is required. The purchase price could then be considered to contain a financing element and, in accordance with Accounting Standard AASB 102 *Inventories* par. 18,[1] some of the purchase price would be considered an interest expense. Consistent with this treatment, early payments resulting in any purchase discount is considered to be a reduction in inventory, not a revenue or contra expense.

Given the preceding activity, Thirroul's *net purchases* of inventory can be calculated as follows:

Gross purchases	$20 000
Add: Transportation-in	300
Less: Purchase returns and allowances	(1 000)
Less: Purchase discounts	(190)
Net purchases (Inventory balance)	$19 110

EXPENSING INVENTORY

Inventory becomes an expense when it is sold. The account Cost of Sales (COS) or Cost of Goods Sold (COGS) is used to capture the amount of inventory expensed during a period. Like the recording of inventory purchases, the recording of cost of sales depends on a business' inventory system. Under a perpetual system, COS is updated each time inventory is sold – that is, perpetually. Under a periodic system, COS is calculated and recorded only at the end of the period – that is, periodically. Again, this chapter will demonstrate inventory accounting under a perpetual system, with the periodic system demonstrated in the appendix to the chapter.

To illustrate the recording of cost of sales, suppose that on 2 November Thirroul sells inventory that cost them $400, to a customer for $600 cash. Thirroul would record the sale with the following *two* entries:

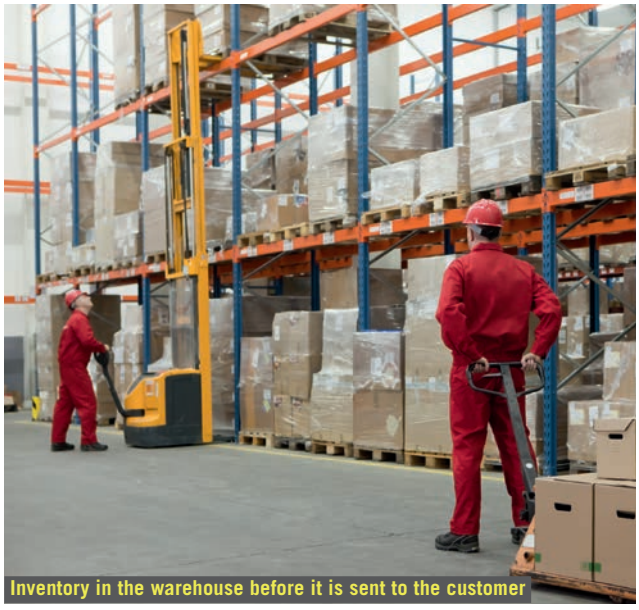
2 Nov.	Cash				600	
	Sales (Revenue)					600
	(To record sale of inventory)					
	Assets	=	Liabilities	+		Equity
	+600					+600

2 Nov.	Cost of Sales				400	
	Inventory					400
	(To record sale of inventory)					
	Assets	=	Liabilities	+		Equity
	–400					–400

The first entry records the effect of the sale on Thirroul's cash and revenues. Both Cash and Sales increase for the amount of the sale. As a result, both assets and equity (revenue) increase by $600 (we could think of this as the 'money' flow).

The second entry records the effect of the sale on Thirroul's inventory and expenses. Cost of Sales increases for the cost of the inventory sold. Inventory decreases for the same amount (we could think of this as the 'goods' flow). As a result, both assets and equity decrease by $400 (remember an expense is a decrease in equity). The net effect of both entries on assets and equity is a $200 increase, which is equal to the gross profit that Thirroul earned on the sale.

In contrast a service business only has a 'money' flow, they do not have the corresponding 'goods' flow.



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Inventory in the warehouse before it is sent to the customer

REPORTING INVENTORY AND COST OF SALES

Inventory is expected to be sold within a year. Therefore, it is reported on the balance sheet as a current asset. Because cost of sales is usually a large and important expense for a retailer or manufacturer, it is normally reported as a separate line item on the income statement just below sales.

To illustrate, examine the balance sheet and income statement for CSL in Appendix B. Inventory is an important asset. CSL reported Inventories of over $2 billion in both 2016 and 2017 – its largest current asset. It also reported over $3 billion in Cost of Sales in both years, its largest expense.

Review this content with the e-lecture

APPLY THIS

LO2 INVENTORY COSTING METHODS

The previous section demonstrated the manner in which inventory and cost of sales are recorded under a perpetual system. When a sale is made, Inventory (asset) is decreased and Cost of Sales (expense) is increased for the cost to the retailer of the inventory that is sold. This section

demonstrates how companies determine the cost of the inventory sold, the 'Cost of Sales'.

CSL ANALYSIS

Look at the financial statements of CSL in Appendix B:

- What name does the company use for its inventory and cost of goods sold?
- Inventory is the company's largest current asset. What is the second largest?
- Cost of sales (COS) is the company's largest expense. What is the second largest?

Analysis:

CSL uses the names 'Inventories' in both the balance sheet in Note 4 and cost of sales in the income statement, (there is no note for cost of sales). In 2017, trade and other receivables was the company's second-largest current asset, less than half the value of inventory. Cost of sales is by far the largest expense while research and development is second largest, but selling and marketing is a close third at about 20 per cent the size of COS.

To determine the cost of inventory sold, companies can use one of the following four inventory costing methods. In Australia, AASB 102 does not permit the use of the third method (LIFO); however, this method is used in other parts of the world, primarily Japan and the US:

- specific identification
- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- moving average.

To illustrate each method, the following example will be used. Suppose that Koala General Store sells goanna oil that it purchases from Bandicoot Manufacturing. During the month of September, Koala experiences the following inventory activity:

		Units	Unit cost	Total
1 Sep.	Beginning inventory	40	$12	$480
4 Sep.	Purchase	60	$13	$780
10 Sep.	Sale	(65)		
15 Sep.	Purchase	30	$14	$420
23 Sep.	Purchase	45	$15	$675
30 Sep.	Sale	(50)		

SPECIFIC IDENTIFICATION

specific identification method Determines cost of sales based on the actual cost of each inventory item sold.

The **specific identification method** determines cost of sales based on the actual cost of each inventory item sold. To use this method, a retailer must know specifically which inventory item is sold and the exact cost of that particular item. As a result, the method is most likely to be used by companies whose inventory is unique; for example, a jewellery store that sells expensive individually designed jewellery.

For illustration purposes, suppose that Koala specifically identifies each of its inventory items and provides the detailed inventory activity as shown in Exhibit 7.1.

Exhibit 7.1 shows that the 10 September sale consisted of 30 $12 units and 35 $13 units for a total cost of $815. The 30 September sale consisted of 10 $12 units, 20 $13 units, 10 $14 units, and 10 $15 units for a total cost of $670. Together, cost of sales for September is $1485 ($815 + $670). The 60 units remaining in ending inventory, as shown in the bottom right corner of Exhibit 7.1, have a cost of $870.

CSL, because of the nature of its product is likely to use specific identification. Each batch of medicine will be able to be identified from manufacturing to customer (i.e. hospital, chemist, doctor) and in many cases consumer ('medicines to patient' as CSL describes its business).

Because most companies cannot track the actual cost of every inventory item that is sold, they cannot use the specific identification method. Instead, they must make an *assumption* about the cost of inventory sold. They can *assume* that the cost of the inventory sold is the cost of the first unit purchased, the last unit purchased or an average of all purchases. Each of these three assumptions is described as follows.

APPLY THIS

Check out the animated summary on Specific Identification

FIRST-IN, FIRST-OUT (FIFO)

first-in, first-out (FIFO) method Calculates cost of sales based on the assumption that the first unit of inventory available for sale is the first unit sold.

The **first-in, first-out (FIFO) method** calculates cost of sales based on the assumption that the first unit of inventory available for sale is the first unit sold. That is, inventory is assumed to be sold in the order that it is purchased. For many companies, the FIFO assumption may match the actual physical flow of their inventory. However, companies are not required to choose the assumption that most closely matches their physical flow. Remember this is an *assumption* because the actual items sold cannot be identified, they could be the oldest, the newest or any combination.

Exhibit 7.2 illustrates the calculation of cost of sales under the FIFO method.

At each sale, the FIFO method requires Koala to assign the costs of the first units purchased (the oldest stock on hand) to cost of sales. On 10 September Koala sold 65 units. It therefore assumes that it sold all 40 units of beginning inventory and 25 of the units in Purchase #1. The total cost of those 65 units was $805.

For the 30 September sale, Koala assumes that it sold the 35 units remaining from Purchase #1 and 15 units of Purchase #2. The total cost of those 50 units was $665.

As a result of these two calculations, cost of sales for September is $1470 ($805 + $665). The 60 units remaining

	Transaction	Inventory purchased			Inventory sold			Inventory on hand		
1 Sep.	Beginning inventory							40	$12	$ 480
4 Sep.	Purchase #1	60	$13	$780				40	$12	$ 480
								60	$13	780
								100		$1 260
10 Sep.	Sell 65 units				30	$12	$360	10	$12	$ 120
					35	$13	455	25	$13	325
					65		$815	35		$ 445
15 Sep.	Purchase #2	30	$14	$420				10	$12	$ 120
								25	$13	325
								30	$14	420
								65		$ 865
23 Sep.	Purchase #3	45	$15	$675				10	$12	$ 120
								25	$13	325
								30	$14	420
								45	$15	675
								110		$1 540
30 Sep.	Sell 50 units				10	$12	$120	0	$12	$ 0
					20	$13	260	5	$13	65
					10	$14	140	20	$14	280
					10	$15	150	35	$15	525
					50		$670	60		$ 870

EXHIBIT 7.1 Calculations for the specific identification method

	Transaction	Inventory purchased			Inventory sold			Inventory on hand		
1 Sep.	Beginning inventory							40	$12	$ 480
4 Sep.	Purchase #1	60	$13	$780				40	$12	$ 480
								60	$13	780
								100		$1 260
10 Sep.	Sell 65 units				40	$12	$480	0	$12	$ 0
					25	$13	325	35	$13	455
					65		$805	35		$ 455
15 Sep.	Purchase #2	30	$14	$420				35	$13	$ 455
								30	$14	420
								65		$ 875
23 Sep.	Purchase #3	45	$15	$675				35	$13	$ 455
								30	$14	420
								45	$15	675
								110		$1 550
30 Sep.	Sell 50 units				35	$13	$455	0	$13	$ 0
					15	$14	210	15	$14	210
					50		$665	45	$15	675
								60		$ 885

EXHIBIT 7.2 Calculations for the FIFO method

in ending inventory, as shown in the bottom right corner of Exhibit 7.2, have a cost of $885.

Remember with FIFO we are not tracking the sale of each item. Because we do not know if we have sold the oldest item in stock or the newest, FIFO is an assumption. Even for items where a retailer may attempt to sell the oldest stock first e.g. milk. Nothing stops a customer taking the newest milk from the back of the fridge; all milk of the same brand, type and size will have the same barcode, regardless of the use-by date. Milk that expires in two days is indistinguishable from the milk expiring in 12 days to the computer program perpetually tracking inventory. The same is likely to apply to refrigerators, each brand and model will have the same barcode whether manufactured last week or last year.

APPLY THIS **Check out the animated summary on FIFO**

LAST-IN, FIRST-OUT (LIFO)

last-in, first-out (LIFO) method Calculates cost of sales based on the assumption that the last unit of inventory available for sale is the first unit sold.

The **last-in, first-out (LIFO) method** calculates cost of sales based on the assumption that the most recent purchases (the newest stock on hand) are sold first. As previously mentioned, while not currently permitted in Australia, this method is used in other parts of the world, primarily Japan and the US. Exhibit 7.3 illustrates the calculations under the LIFO method.

At each sale, the LIFO method requires Koala to assign the costs of the last or most recent units purchased to cost of sales. On 10 September, Koala sold 65 units. It therefore assumes that it sold all 60 units of Purchase #1 and five of the units from beginning inventory. The total cost of those 65 units was $840.

For the 30 September sale, Koala assumes that it sold all 45 units of Purchase #3 and five units of Purchase #2. The total cost of those 50 units was $745.

As a result, cost of sales for September is $1585 ($840 + $745). Ending inventory, as shown in the bottom right corner of Exhibit 7.3, has a cost of $770.

APPLY THIS **Check out the animated summary on LIFO**

MOVING AVERAGE

The **moving average method** calculates cost of sales based on the average unit cost of all inventory *available* for sale. That is, the cost of each inventory item sold is assumed to be the average cost of all inventory available for sale at that time.

moving average method Calculates cost of sales based on the average unit cost of all inventory available for sale.

To calculate cost of sales at each sale date, a retailer must calculate the average unit cost of the inventory available for sale on that date. This calculation is conducted as follows:

KEY FORMULA 7.1 AVERAGE UNIT COST

$$\text{Average Unit Cost} = \frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}}$$

	Transaction	Inventory purchased			Inventory sold			Inventory on hand		
1 Sep.	Beginning inventory							40	$12	$ 480
4 Sep.	Purchase #1	60	$13	$780				40	$12	$ 480
								60	$13	780
								100		$1 260
10 Sep.	Sell 65 units				5	$12	$ 60	35	$12	$ 420
					60	$13	780	0	$13	0
					65		$840	35		$ 420
15 Sep.	Purchase #2	30	$14	$420				35	$12	420
								30	$14	420
								65		$ 840
23 Sep.	Purchase #3	45	$15	$675				35	$12	$ 420
								30	$14	420
								45	$15	675
								110		$1 515
30 Sep.	Sell 50 units				5	$14	$ 70	35	$12	$ 420
								25	$14	350
					45	$15	675	0	$15	0
					50		$745	60		$ 770

EXHIBIT 7.3 Calculations for the LIFO method

	Transaction	Inventory purchased			Inventory sold			Inventory on hand		
1 Sep.	Beginning inventory							40	$12.00	$ 480
4 Sep.	Purchase #1	60	$13	$780				40	$12.00	$ 480
								60	$13.00	780
								100		$1 260
10 Sep.	Sell 65 units				65	$12.60	$819	35	$12.60	$ 441
15 Sep.	Purchase #2	30	$14	$420				35	$12.60	$ 441
								30	$14.00	420
								65		$ 861
23 Sep.	Purchase #3	45	$15	$675				35	$12.60	$ 441
								30	$14.00	420
								45	$15.00	675
								110		$1 536
30 Sep.	Sell 50 units				50	$13.96	$698	60	$13.96	$ 838

EXHIBIT 7.4 Calculations for the moving average method

Once the average unit cost is known, it is multiplied by the units sold to determine cost of sales. Exhibit 7.4 contains Koala's calculations under the moving average method. Note that the average unit cost is rounded to the nearest cent, while inventory sold and inventory on hand is rounded to the nearest dollar.

At the 10 September sale, Koala has 100 units available for sale at a total cost of $1260. Therefore, the average unit cost is $12.60 ($1260/100). Koala uses that unit cost to determine the costs of the inventory sold and the inventory that remains. Having sold 65 units, Koala's cost of sales on 10 September is $819 (65 × $12.60). The cost of the 35 units on hand after the sale is therefore $441 (35 × $12.60).

For the 30 September sale, Koala must recalculate the average unit cost because it has purchased additional units of inventory. This is why the term 'moving average' is used, because the average cost per unit can change during the period as new purchases are made.

At 30 September, Koala has 110 units available for sale at a total cost of $1536. Therefore, the new average unit cost, rounded to the nearest cent, is $13.96 ($1536/110). Having sold 50 units, Koala's cost of sales on 30 September is $698 (50 × $13.96).

As a result of these two calculations, cost of sales for September is $1517 ($819 + $698). Ending inventory, as shown in the bottom right corner of Exhibit 7.4, has an average unit cost of $13.96, for a total cost of $838 (60 × $13.96).

While moving average provides a compromise, giving closing inventory and COS figures between the extremes of FIFO and LIFO, in reality most products cannot be mixed, and the average products are sold or remain. Most products come in their own package, one exception is fruit and vegetables where the customer attempts to select the freshest and best but may end up with some pieces delivered last month and others yesterday.

APPLY THIS
Check out the animated summary on Moving Average

LO3 COMPARING INVENTORY COSTING METHODS

The previous sections show that a business' choice of inventory costing methods affects both its cost of sales and its ending inventory. To summarise these effects, Exhibit 7.5 puts Koala's inventory data in a form known as the cost-of-goods-sold model and compares the results of each of the three cost flow assumptions. The specific identification method is omitted from the comparison because of its infrequent use.

	Units	FIFO	Moving average	LIFO
Beginning inventory	40	$480	$480	$480
Add: Net purchases	135	1 875	1 875	1 875
Cost of goods available for sale	175	$2 355	$2 355	$2 355
Less: Ending inventory	60	885	838	770
Cost of sales	115	$1 470	$1 517	$1 585

EXHIBIT 7.5 Comparison of inventory costing methods

The cost-of-goods-sold model summarises a business' inventory activity during a period by adding purchases to beginning inventory to yield cost of goods available for sale. This represents the total cost of the inventory that could have been sold during the period. That cost is then allocated to either what was sold (cost of sales) or what was not sold (ending inventory).

In Koala's case, it began the month of September with 40 units costing $480 and bought an additional 135 units costing $1875 during the month. So, it could have sold up to 175 units with a total cost of $2355. This is the case regardless of the inventory costing system chosen. However, the cost of the 115 units sold and the 60 units unsold depends on the cost flow assumption.

The FIFO method assigns the costs of the first and, in this case, less expensive units purchased to cost of sales, thereby yielding the lowest cost of sales. It also assigns the costs of the last and more expensive units to ending inventory, thereby yielding the highest ending inventory.

In contrast, the LIFO method assigns the costs of the last and, in this case, more expensive units to cost of sales, resulting in the highest cost of sales. The costs of the first and less expensive units are assigned to ending inventory, resulting in the lowest ending inventory.

The moving average assigns the average costs of all units purchased to cost of sales. Therefore, it yields cost of sales and ending inventory that fall in between the FIFO and LIFO extremes.

When a business experiences rising prices for its inventory, these relative differences will continue. These relationships are summarised as follows:

	Ending inventory	Cost of sales
FIFO yields:	Highest	Lowest
Moving average yields:	Middle	Middle
LIFO yields:	Lowest	Highest

Because of these differences in both the income statement accounts and balance sheet accounts, a reporting entity (a business required to lodge financial statements with the Australian Securities and Investments Commission [ASIC]) must disclose the inventory costing method that it uses.[2] It should use the same method consistently. These requirements allow for meaningful comparisons of inventory activity across different businesses and across different periods within the same business.

In the US, companies can use any of the four costing methods. Some choose the LIFO method because of the resulting tax benefits. In Australia LIFO cannot be used for either financial reporting or tax.

To illustrate, suppose that Koala generated revenues of $5240 from its sale of inventory during September. Suppose further that it incurred $1850 in operating expenses during the month. Exhibit 7.6 contains comparative multi-step statements of income prepared under each inventory costing method.

Comparing the profit before tax under the LIFO and FIFO assumptions (which are the two extremes), you can see that Koala could report $115 less profit if it uses the LIFO method rather than the FIFO method. Generally, the concern with using LIFO is not the lower profits (accountants like prudent accounting methods); it is often the out-of-date value placed on closing inventory.

	FIFO	Moving average	LIFO
Sales	$5 240	$5 240	$5 240
Cost of sales	(1 470)	(1 517)	(1 585)
Gross margin	$3 770	$3 723	$3 655
Operating expenses	(1 850)	(1 850)	(1 850)
Profit before tax	$1 920	$1 873	$1 805

EXHIBIT 7.6 Comparative statements of income

Under a perpetual inventory system, the inventory account is updated each time inventory is bought or sold. However, many businesses take a physical count of inventory at least once a year to confirm that the inventory balance from the accounting system matches the actual inventory on hand. Taking a physical inventory is an example of an internal control procedure discussed in Chapter 5. By counting inventory, a business can determine if it has lost inventory due to theft, damage or errors in accounting.

Newspix/Shannon Morris

A stocktake sale is based on the concept of selling the inventory rather counting it – a stocktake

LO4 ESTIMATING ENDING INVENTORY

A business must sometimes estimate its inventory balance. One example is when inventory is destroyed by fire. Another example is when a business may not be able to rely on its perpetual inventory records, for example if there is high theft or wastage rates. In such cases, a business can estimate its ending inventory with the gross profit (margin) method or **retail method**. Both rely on gross profit margins (the 'mark-up') to determine closing inventory values.

retail method A method of estimating the cost of inventory knowing the selling price and reducing it by the gross profit percentage.

AASB 102 paragraph 22 states:

> The retail method is often used in the retail industry for measuring inventories of large numbers of rapidly changing items with similar margins for which it is impracticable to use other costing methods. The cost of inventory is determined by reducing the sales value of the inventory by the appropriate percentage gross margin. The percentage used takes into consideration inventory that has been marked down to below its original selling price. An average percentage for each retail department is often used.[3]

With the retail method, once ending inventory is counted (stocktake) and the selling price recorded (selling price may be determined from the price docket on the item or from the computer records that provide the cash register with the price to charge the customer when the item is scanned), the total sales value of inventory is reduced by the profit margin. To illustrate, CSL has a gross profit margin of 51.9 per cent in 2017 (gross profit of $3596m/total operating revenue of $6922.8m), and 50.1 per cent in 2016. The COGS is then 48.1 per cent (100% – 51.9%).

To illustrate the gross profit method, assume that Howard Hardware is preparing financial statements and needs to estimate cost of sales and ending inventory. Howard has generated sales of $400 million. In the past, Howard's gross profit percentage has averaged 45 per cent. Assuming that this financial period is similar to prior periods, Howard can estimate that gross profit on current sales is $180 million. All figures are in millions:

Current quarter sales (actual)	$400
Historical gross profit percentage	× 45%
Gross profit (estimated)	$180

Current quarter sales (actual)	$400
Gross profit (estimated)	(180)
Cost of sales (estimated)	$220

Howard can then estimate cost of sales for the period as $220.

Now that Howard has estimated cost of sales, it can calculate its ending inventory by plugging the cost of sales estimate into the cost-of-goods-sold model. Based on past financial reports and purchase records, Howard knows that it starts this period with $200 in inventory and bought $90 of inventory. This means that Howard had $290 in inventory available for sale during the period. With $220 in estimated cost of sales, the cost-of-goods-sold model yields a $70 estimate for ending inventory.

Beginning inventory (actual)	$200
Add: Net purchases (actual)	90
Cost of goods available for sale (actual)	$290
Less: Cost of sales (estimated)	(220)
Ending inventory (estimated)	$ 70

Review this content with the e-lecture

LO5 LOWER-OF-COST-AND-NET REALISABLE VALUE

The cost principle requires that inventory be recorded at its cost. However, because of the principle of prudence, accounting rules require that inventory be reported on the balance sheet at its net realisable value (NRV) if the market value is lower than the inventory's cost. This is sometimes referred to as the **lower-of-cost-and-net-realisable-value (LCNRV) rule**. The LCNRV rule is applied at the end of each accounting period by comparing inventory costs to NRV. According to the accounting standard AASB 102, NRV 'refers to the net amount that an entity expects to realise from the sale of inventory in the ordinary course of business'.[4] When the cost is lower than the NRV, we do not recognise the potential gain, nothing further is done. However, when the NRV is lower than the cost, the business must adjust its inventory down to the lower NRV.

lower-of-cost-and-net-realisable-value (LCNRV) rule
Requires inventory to be reported on the balance sheet at its market value if the market value is lower than the inventory's cost.

To illustrate, suppose that Loyeung Company provides the 30 June inventory information shown in Exhibit 7.7.

Although the gain in item A is greater than the loss in item B, the standard does not allow losses in one inventory item to be offset by gains in another. Only in limited circumstances can similar items of inventory be treated as a group of the same type. For Loyeung the two items of inventory report a net gain of $30, but prudence requires the recognition of the loss, although the item is yet to be sold, but not the potential (unrealised) gain. Therefore, we record the above information as follows:

30 June	Loss on Inventory			120	
	Inventory				120
	(To record loss on inventory item B)				
	Assets	=	Liabilities	+	Equity
	–120				–120

Item	Units	Unit cost	Unit NRV	Total cost	Total NRV	LCNRV	Gain or (Loss)
A	5	$ 40	$ 70	$ 200	$ 350	$ 200	$ 150
B	8	$ 65	$ 50	$ 520	$ 400	$ 400	($ 120)

EXHIBIT 7.7 LCNRV calculation for Loyeung Company as of 30 June

The journal entry increases Loss on Inventory to reflect the loss in value of the inventory and decreases Inventory to adjust the account down to the $600 lower of cost and net realisable value. As a result, both assets and equity decrease. Loyeung's inventory is now ready to be reported on the balance sheet at its more prudent LCNRV.

CSL ANALYSIS

Look at 'Inventories', paragraph 4, in the CSL *Financial Report 2017* (available online). What inventory valuation method does the company use?

Analysis:
The note indicates that the company uses the lower-of-cost-or-net-realisable-value method (cost includes direct materials, labour and an appropriate proportion of variable and fixed overhead (these terms are discussed in detail in the ACCT Managerial book). Net realisable value is the estimated revenue that can be earned from the sale of a product less the estimated cost of both completion and selling.

LO6 EVALUATING A BUSINESS' MANAGEMENT OF INVENTORY

Any investor, creditor or manager of a business should be interested in how well the business manages its inventory. A business manages its inventory by buying and selling efficiently and effectively.

The following sections examine the effectiveness of a retailer – let's call it Araya Accessories Limited – in managing its inventory. The examination will require information from the company's balance sheet and income statement. The required information is found in Exhibit 7.8, excerpted from the *Araya Accessories Annual Report 2019*.

Source	Accounts	2019	2018
Income statement	Net Sales	$62 884	$61 471
	Cost of Sales	44 157	42 929
Balance sheet	Inventory	6 705	6 780
	Total Assets	44 106	44 560

EXHIBIT 7.8 Account balances from Araya Accessories' annual report (all figures in thousands)

HORIZONTAL AND VERTICAL ANALYSES

An easy and useful place to start an examination of inventory is with horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance less the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account is total assets for balance sheet accounts and net sales or total revenues for income statement accounts. These calculations are summarised as follows:

KEY FORMULA 7.2 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar change}}{\text{Prior – year balance}}$$

KEY FORMULA 7.3 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}} \text{ (For the balance sheet)} \quad \text{or} \quad \frac{\text{Account Balance}}{\text{Net Sales or Revenue}} \text{ (For the income statement)}$$


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Some inventory needs to be sold quickly or it will spoil and have to be thrown out

Given Araya Accessories' financial information in Exhibit 7.8, horizontal and vertical analyses of inventory and cost of sales result in the following:

Horizontal analysis		
	Change	Percentage change
Inventory	6 705 –6 780 (75)	$\frac{(75)}{6\,780} = 1.1\%$
Cost of Sales	44 157 –42 929 1 228	$\frac{1\,228}{42\,929} = 2.9\%$

Vertical analysis		
	2019	2018
Inventory	$\frac{6\,705}{44\,106} = 15.2\%$	$\frac{6\,780}{44\,560} = 15.2\%$
Cost of Sales	$\frac{44\,157}{62\,884} = 70.2\%$	$\frac{42\,929}{61\,471} = 69.8\%$

The calculations show a fairly stable inventory position. Horizontal analysis of inventory shows a $75 million decrease, which equals a 1.1 per cent reduction. Vertical analysis indicates that inventories made up 15.2 per cent

of total assets in both 2018 and 2019. So, although inventory stocks were down slightly, the decrease mirrored an overall decrease in Araya Accessories' total assets.

The analysis of cost of sales shows an increase of $1228 million, which equals a 2.9 per cent increase. Furthermore, vertical analysis indicates that cost of sales was 69.8 per cent of sales in 2018 and 70.2 per cent of sales in 2019. The reason for this increase is that cost of sales increased faster than sales. This is a trend that should warrant observation in the future.

INVENTORY TURNOVER RATIO

While horizontal and vertical analyses are useful for generating information about inventory, a more direct way to assess a business' ability to sell its inventory is to calculate the inventory turnover ratio. The **inventory turnover ratio** compares the cost of sales during a period to the average inventory balance during that period. It is calculated as follows:

inventory turnover ratio Compares cost of sales during a period to the average inventory balance during that period and measures the ability to sell inventory.

KEY FORMULA 7.4 INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Where average inventory is:

$$\frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2}$$

Because this ratio compares the cost of all inventory sold to the average cost of inventory on hand, it indicates how many times a business can sell its inventory balance in a period. All other things being equal, a higher ratio indicates that the business sold more inventory while maintaining less inventory on hand. This means that the business generated more sales revenue while reducing the costs of stocking inventory on the shelves.

CSL ANALYSIS

Using CSL's information in Appendix B, calculate and interpret:

1 horizontal and vertical analyses of inventory and cost of sales
2 inventory turnover ratio
3 days-in-inventory ratio.

Analysis:

1 Horizontal analysis

Inventory:

($2575.8 – $2152.0) / $2152.0 = 14.2% increase in inventory 2016 to 2017

In passing it is interesting to read in in the Director's Report of the full annual report, discussion of key risk management 'CSL seeks to maintain appropriate levels of inventory and safety stock and ensure that where practicable we have alternative supply arrangements in place'.[5]

Cost of sales:

($3326.8 – $43052.8) / $3052.8 = 9.0%

Vertical analysis

Inventory:

$2575.8 / $9122.7 = 28.2%

Cost of sales:

$3226.8 / $6615.8 = 50.3%

In this case we use sales revenue rather than total operating revenue because COS is directly associated with sales revenue rather than the pandemic fees, royalties and licence revenue, and other income.

The horizontal analysis of inventory and cost of sales shows that CSL sold and stocked more inventory during the year (growth strategy). The 28.2 per cent vertical analysis of inventory shows that just under one-third of the company's total assets are tied up in inventory. This seems reasonable, given that CSL is a major supplier of medicines. The 50.3 per cent vertical analysis of cost of sales indicates that inventory cost is a large expense for the company. For the average dollar of sales, the cost of the inventory sold was about 50 cents. This may seem high but most of the research and development costs associated with coming up with new medicines are not part of COS.

2 Inventory turnover ratio

$3326.8 / [($2575.8 + $2152.0) / 2] = 1.41

3 Days-in-inventory

365 / 1.4 = 259 days

The 1.41 times inventory turnover ratio indicates that CSL makes and sells its inventory less than twice per year. The days in inventory ratio of 259 days indicates its holding of large stocks. CSL can supply large quantities of medicine quickly when a pandemic or similar mass health emergency arises.

Araya Accessories' 2019 inventory turnover ratio is calculated as follows:

$$\frac{44\,157}{((6705 + 6780)/2)} = 6.5$$

The 6.5 ratio indicates that Araya Accessories' cost of sales for 2019 was 6.5 times its average inventory balance. For every dollar of inventory on its shelves, on average, it was able to sell over $6 of inventory during the period.

Because the turnover ratio is sometimes difficult to interpret, it is often converted into the days-in-inventory ratio. The **days-in-inventory ratio** converts the inventory turnover

days-in-inventory ratio Converts the inventory turnover ratio into a measure of days by dividing the turnover ratio into 365 days.

ratio into a measure of days by dividing the turnover ratio into 365 days. Thus, the days-in-inventory ratio is calculated as follows:

$$\frac{365}{6.5} = 56.2$$

A ratio of 56.2 indicates that it takes Araya Accessories about 56 days to sell as much inventory as it keeps on hand. Naturally, it would want this ratio to be as low as possible.

Download the Enrichment Modules for further practice

LO7 APPENDIX: PERIODIC INVENTORY SYSTEM

A periodic inventory system does not update the inventory and cost of sales accounts *during* the period. When purchases are made, they are recorded in a temporary account called Purchases. When sales are made, the resulting revenue (and increase in assets, cash or accounts receivable) is recorded, but *not* the cost of sales (and the decrease in inventory). As a result, businesses that use a periodic system must calculate and update the Inventory and the Cost of Sales accounts at the end of the period. The following sections demonstrate the recording of purchases and the determination of ending inventory and cost of sales under a periodic system.

RECORDING INVENTORY

In a periodic system the following four temporary accounts may be used to capture the cost of inventory purchases during a period. The Purchases account accumulates the cost of all purchases. The Transportation-in account accumulates the transportation costs of obtaining the inventory. Both increase the cost of inventory. The **Purchase Returns and Allowances** account accumulates the cost of all inventory returned to vendors as well as the cost reductions from vendor allowances. The **Purchase Discounts** account accumulates the cost reductions generated from suppliers (vendor) discounts granted for prompt payment; both reduce the cost of inventory. Each of the four accounts would then be closed at the end of the period when the Inventory and the Cost of Sales accounts are updated.

Purchase Returns and Allowances account An account that accumulates the cost of all inventory returned to vendors as well as the cost reductions from vendor allowances.

Purchase Discounts account An account that accumulates the cost reductions generated from vendor discounts granted for prompt payments.

To illustrate the recording of inventory, the example used earlier in the chapter is repeated. While the four accounts could be used, a simpler approach would be to record all costs associated with purchasing inventory to the Purchase account. Suppose that Thirroul Takeaway purchases $20 000 of inventory on account on 10 October. The purchase would be recorded as follows:

10 Oct.	Purchases			20 000	
	Accounts Payable				20 000
	(To record purchase of inventory)				
	Assets	=	Liabilities	+	Equity
	+20 000				+20 000

Suppose further that Thirroul pays a third-party carrier $300 cash to transport the inventory to its warehouse (debit Purchases or Transportation-in and credit Cash). On 12 October Thirroul is granted a $1000 reduction in the cost of the merchandise due to blemishes on the inventory (debit Accounts Payable and credit Purchases or Purchases Returns and Allowances).

Finally, suppose that Thirroul pays its remaining $19 000 bill to the vendor on 15 October, which qualifies Thirroul for a 1 per cent discount. As a result, Thirroul would save $190 ($19 000 × 1%) and pay only $18 810. The entry to record payment would be as follows:

15 Oct.	Accounts Payable			19 000	
	Purchases (or Purchase Discounts)				190
	Cash				18 810
	(To record payment)				
	Assets	=	Liabilities	+	Equity
	–190		–19 000		–18 810

The entry decreases Accounts Payable for the full $19 000 and decreases Cash for the $18 810 payment. The difference (the purchase discount) is a reduction in Purchases.

net purchases The value of inventory purchased and transportation-in less purchase returns and allowances and purchase discounts.

Given the preceding activity, Thirroul's **net purchases** of inventory can be calculated as follows:

Purchases	$20 000
Add: Transportation-in	300
Less: Purchase returns and allowances	(1 000)
Purchase discounts	(190)
Net purchases	$19 110

This is the same cost of net purchases as calculated under the perpetual system discussed earlier in the chapter. Whether using a periodic or perpetual system, the cost of net purchases is the same, just captured in different accounts.

INVENTORY COSTING METHODS

A periodic system does not update the Inventory and the Cost of Sales accounts during the period. Thus, the balances in these accounts must be calculated at the end

of the period. This is accomplished in the following three steps:

1. Count the inventory on hand at the end of the period.
2. Use an inventory costing method to assign a cost to the ending inventory.
3. Calculate cost of sales using the cost-of-goods-sold model.

To illustrate this process, the example used earlier in the chapter is repeated. Suppose that during the month of September, Koala General Store experiences the following inventory purchases:

		Units	Unit cost	Total
1 Sep.	Beginning inventory	40	$12	$480
4 Sep.	Purchase	60	$13	$780
15 Sep.	Purchase	30	$14	$420
23 Sep.	Purchase	45	$15	$675

At the end of the month, Koala counts 60 units on hand. Koala's cost-of-goods-sold model for September is therefore as follows:

	Units	Cost
Beginning inventory	40	$ 480
Add: Net purchases	135	1 875
Cost of goods *available* for sale	175	$2 355
Less: Ending inventory	60	???
Cost of sales	115	???

To calculate the cost of the 60 units in ending inventory and therefore the cost of the 115 units sold, Koala must use one of the four inventory costing methods.

Specific identification

Under the specific identification method, Koala determines the cost of ending inventory based on the actual cost of the units on hand. Suppose that Koala knows the ending 60 units of inventory are five $13 units, 20 $14 units and 35 $15 units. It can therefore calculate the cost of ending inventory as follows:

	Units	Unit cost	Total cost
4 Sep. purchase	5	$13	$ 65
15 Sep. purchase	20	$14	$280
23 Sep. purchase	35	$15	$525
Ending inventory	60		$870

Plugging this cost of ending inventory into the cost-of-goods-sold model yields Koala's cost of sales of $1485:

	Units	Cost
Cost of goods available for sale	175	$2 355
– Ending inventory	60	870
= Cost of sales	115	$1 485

First-in, first-out (FIFO)

Under the FIFO method, Koala assumes that the first units of inventory purchased are the first units sold. As a result, the costs of the last (most recent) purchases are assigned to ending inventory. It can therefore calculate the cost of ending inventory as follows:

	Units	Unit cost	Total cost
23 Sep. purchase	45	$15	$675
15 Sep. purchase	15	$14	210
Ending inventory	60		$885

The cost of all 45 units purchased on 23 September and 15 of the units purchased on 15 September are assigned to ending inventory, yielding a cost of $885. Plugging this into the cost-of-goods-sold model yields Koala's cost of sales of $1470.

	Units	Cost
Cost of goods *available* for sale	175	$2 355
– Ending inventory	60	885
= Cost of sales	115	$1 470

Last-in, first-out (LIFO)

Again, LIFO is not used in Australia, but accounting standards may change. Furthermore, management may want COGS calculated using LIFO because LIFO provides the most up-to-date COS values.

Under the LIFO method, Koala assumes that the last units of inventory purchased are the first units sold. As a result, the costs of the oldest inventory are assigned to ending inventory. Koala can therefore calculate the cost of ending inventory as follows:

	Units	Unit cost	Total cost
Beginning inventory	40	$12	$480
4 Sep. purchase	20	$13	$260
Ending inventory	60		$740

The cost of all 40 units of beginning inventory and 20 of the units purchased first in September are assigned to ending inventory, yielding a cost of $740. Plugging this into the cost-of-goods-sold model yields Koala's cost of sales of $1615.

	Units	Cost
Cost of goods *available* for sale	175	$2 355
– Ending inventory	60	740
= Cost of sales	115	$1 615

Weighted average

Under the weighted average method, Koala assumes that the cost of each unit in ending inventory and each unit sold is the average cost of all units *available* for sale during the period. The weighted average cost per unit is calculated as follows:

KEY FORMULA 7.5 WEIGHTED AVERAGE UNIT COST

$$\text{Weighted Average Unit Cost} = \frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}}$$

Note here that under a periodic system, the average unit cost is based on the entire inventory available to be sold during the period. As a result, the average unit cost does not change during the period. Therefore, it is called a weighted average instead of a moving average (as under the perpetual system).

Koala's weighted average cost per unit, rounded to the nearest cent, is calculated as follows:

$$\frac{\$2355}{175} = \$13.46$$

Koala can therefore calculate the cost of ending inventory as follows, rounded to the nearest dollar:

	Units	Unit cost	Total cost
Ending inventory	60	$13.46	$808

Plugging this into the cost-of-goods-sold model yields Koala's cost of sales of $1547.

	Units	Cost
Cost of goods available for sale	175	$2 355
– Ending inventory	60	808
= Cost of sales	115	$1 547

Determining ending inventory quantities requires a physical count (stocktake) at the end of the period. Errors in the counting of inventory affect both the balance sheet (through inventory) and the income statement (through cost of sales). Moreover, because ending inventory in one period becomes beginning inventory in the next period, an error can affect not only the current period, but also the next period. If only one error is made, then the over (under) statement of COGS will be counterbalance in the next period.

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Describe inventory

LO1

How would you describe the physical nature of CSL's inventory? (This may require some research beyond Appendix B in this book.)

2 Classifying inventory costs

LO1

If transportation–in is included in the cost of inventory, how should the cost of freight-out (the cost of delivering the goods to the customer) be classified? Why?

3 Determining inventory costs

LO1

Matthews Electronics purchased 1000 tablet computers from a vendor for $75 000. The vendor gave Matthews a $1500 discount because of scratches on the cases of some of the laptops. The cost to ship the tablets was $500.

REQUIRED

Determine Matthews' cost of inventory.

4 Recording inventory purchases

LO1

On 20 March, Hazelwood Humatics purchased on account $112 000 worth of sensors with a list price of $123 000. Hazelwood pays the vendor on 30 March, which qualifies them for a 2 per cent discount. Hazelwood uses a perpetual inventory system.

REQUIRED

Record Hazelwood's purchase of the inventory and payment for the inventory.

5 Inventory purchases

LO1, 2

Consider the following separate situations.

	Lucy's Lounges	Sarah's Sofas	Chan's Chairs
Beginning inventory	$4 000	$2 350	$ (e)
Purchases (gross)	4 230	(c)	7 340
Purchase returns	470	800	550
Purchase discounts	(a)	458	310
Transportation-in	150	500	420
Cost of goods available for sale	(b)	7 320	8 790
Ending inventory	1 890	1 750	(f)
Cost of sales	5 220	(d)	7 590

REQUIRED

Calculate the missing amounts.

6 Recording purchases and sales of inventory

LO1, 2

Lowder Company purchased 275 units of inventory on account for $5775. Due to early payment, Lowder received a discount and paid only $5225. Lowder then sold 150 units for cash at $55 each, purchased an additional 65 units for cash at a cost of $1430, and then sold 100 more units on credit for $58 each. Lowder uses a perpetual inventory system.

REQUIRED

a Prepare all journal entries to record Lowder's purchases and sales assuming the FIFO inventory costing method.

b Which journal entries would be different if Lowder used the LIFO inventory costing method? How would they be different?

7 Inventory costing methods

LO2

Bond's November inventory activity is as follows. Bond uses a perpetual inventory system:

Date	Transaction	Units	Unit cost	Total cost
1st	Beginning inventory	32	$55	$1 760
7th	Purchase	45	60	2 700
9th	Sale	50		
14th	Purchase	52	65	3 380
30th	Sale	61		

REQUIRED

Calculate the ending inventory and cost of sales under the FIFO, LIFO and moving average costing methods.

8 Effects of inventory methods

LO3

Assume that you are an accountant at a local computer retailer and your boss asks you to explain the financial statement impact of inventory costing methods. In particular, she is interested in whether the business should use the FIFO or LIFO method. She would like to use the method that results in the highest net income, the highest inventory balance and the lowest taxes. Note the purchase price of computers has been *falling* over the last decade and that trend is expected to continue.

REQUIRED

Explain the effects of using the LIFO and FIFO methods on income, inventory and taxes. Can your boss get all that she wants?

9 Inventory costing methods

LO2

Huang Hardware provides the following information relating to its July inventory activity. Huang uses a perpetual inventory system.

Date	Transaction	Units	Unit cost	Total cost
1st	Inventory	13	$8.00	$104.00
7th	Purchase	22	9.50	209.00
12th	Sale	20		
18th	Purchase	10	10.25	102.50
20th	Sale	14		
26th	Purchase	16	11.00	176.00
30th	Sale	15		

REQUIRED

a Enter Huang's information into a cost-of-goods-sold model. What is unknown?

b Calculate the ending inventory and cost of sales using the FIFO, LIFO and moving average costing methods. Round dollar amounts to the nearest cent.

c Calculate the sum of the ending inventory and cost of sales for each method. What do you notice about the differences in COS, ending inventory and the sum of COS and ending inventory for each method?

10 Inventory costing methods

LO2, 7

Harrison, Charles and Company sells flower planters for $7 each. On its first day of business in July, the company purchased 2000 planters for $3 each. The company sold 300 units during the first month of operations and sold an additional 1300 units the next month. To prevent inventory stockouts during summer, the company bought an additional 700 units for $4.50 each in October. The company sold 850 units from November through June. The company uses a perpetual inventory system and the FIFO inventory costing method.

REQUIRED

a Calculate Harrison, Charles and Company's inventory balance at the end of the financial year and its cost of sales for the financial year.

b Would those balances be different if the company had used the FIFO costing method under a periodic inventory system?

11 Estimating inventory

LO4

Susan's Shop reported the following information for the current year:

Sales	$1 800 000
Beginning inventory	50 000
Purchases	1 004 000
Gross profit percentage	40%

REQUIRED

Using the gross profit method, estimate Susan's cost of sales for the year and the ending inventory at year-end. Explain why a business might need to estimate its ending inventory.

12 Estimating inventory and cost of sales

LO4

Marshall experiences a fire in its warehouse at the end of the year, which destroys its entire inventory. Marshall's records show that it started the year with $35 000 of inventory and purchased $150 000 during the year. It also shows sales of $310 000 for the year. Normally, Marshall experiences a 55 per cent gross profit percentage on sales.

REQUIRED

Use the gross profit method to estimate Marshall's cost of sales and ending inventory.

13 Applying lower-of-cost-and-net-realisable-value

LO5

Kay Mart Company is preparing financial statements and provides the following information about several of its major inventory items.

Ending inventory as of 30 June			
Item	**Quantity on hand**	**Unit cost When acquired**	**Replacement cost (market value) as of 30 June**
R	25	$15	$19
S	60	22	20
T	34	30	33
U	50	10	11
V	13	50	55

REQUIRED

If Kay Mart uses the LCNRV rule, what should it report as the balance of inventory?

14 Analysing inventory

LO6

The following information is provided for three different companies: A, B and C.

in millions	A	B	C
Beginning inventory	$ 569	$ 774	$ 989
Ending inventory	423	214	356
Cost of sales	1 376	1 232	1 771
Sales	2 232	1 836	3 025

REQUIRED

Calculate the inventory turnover ratio and days in inventory ratio for each company. How do the companies compare?

15 Analysing inventory

LO6

Comparative statements of income for Wells Company are given as follows:

Wells Company comparative statements of income for the years ended 30 June 2020 and 2019		
	2020	**2019**
Net sales	$812 000	$812 000
Cost of sales	649 600	664 364
Gross profit	$162 400	$147 636
Operating expenses	84 448	79 724
Net Profit	$ 77 952	$ 67 912

REQUIRED

Prepare horizontal and vertical analyses of Wells' statement of income data and comment on the current status of the company.

16 Analysing inventory

LO6

During the current year, Norlander implemented an inventory management system that it believes will result in greater efficiencies and profits. Norlander's CEO was therefore disappointed when she saw the following condensed income statement showing no increase in net income:

	2019	2018
Sales	$650 000	$775 000
Cost of sales	372 500	451 800
Operating expenses	232 500	278 200
Net income	45 000	45 000

REQUIRED

Using horizontal and vertical analyses, provide reasoning to the CEO that the inventory management system was effective. Round percentages to one decimal point (e.g. 4.8%).

17 Appendix: Recording and reporting inventory

LO7

Lowder Company purchased 275 units of inventory on account for $5775. Due to some defects in the merchandise, Lowder received a $2 per unit allowance and paid only $5225. Lowder then sold 150 units for cash at $55 each, purchased an additional 65 units for cash at a cost of $1430, and then sold 100 more units for cash at $55 each. Lowder uses a periodic inventory system.

REQUIRED

a Prepare all journal entries to record Lowder's purchases of inventory.

b Calculate Lowder's cost of sales and ending inventory under the FIFO, LIFO and weighted average inventory costing methods. For the weighted average method, round all values to the nearest cent.

18 Appendix: Inventory costing methods (periodic system)

LO7

Huang Hardware provides the following information relating to its June inventory. Huang uses a periodic inventory system and sold 49 units during the month.

Date	Transaction	Units	Unit cost	Total cost
1st	Inventory	13	8.00	$104.00
7th	Purchase	22	9.50	209.00
18th	Purchase	10	10.25	102.50
26th	Purchase	16	11.00	176.00
	Totals	61		$591.50

REQUIRED

a Put Huang's given information into a cost-of-goods-sold model. What is unknown?

b Calculate the ending inventory and cost of sales using the FIFO, LIFO and weighted average costing methods.

c Calculate the sum of the ending inventory and cost of sales for each method. What do you notice about the answer for each method?

19 Appendix: Inventory costing methods

LO7

Bond's November inventory activity follows. Bond uses a periodic inventory system.

Date	Transaction	Units	Unit cost	Total cost
1 Nov	Beginning inventory	32	$55	$1 760
7	Purchase	45	60	2 700
14	Purchase	52	65	3 380
30	Ending inventory	18		

REQUIRED

a Calculate the ending inventory and cost of sales under the FIFO, LIFO and weighted average costing assumptions.

b Which costing assumption gives the highest ending inventory? Highest cost of sales? Why?

c Explain why the average item cost is not $60 under the weighted average costing assumption.

PROBLEMS

20 Effects of inventory costing methods on profits after tax

LO2

Martin Merchandising Company has hired you to examine whether the company should use the LIFO or FIFO inventory costing assumption. The company uses a perpetual inventory system and has supplied the following information for the month:

Beginning inventory 2000 units at $40	$ 80 000
Purchases on 4 June 12 000 units at $45	540 000
Sales on 18 June 10 500 units at $77	808 500
Operating expenses	148 000
Small company tax rate	27.5%

REQUIRED

Martin requires you to prepare income statements under the LIFO and FIFO costing assumptions to show what profits he might report and taxes he may pay. Explain to Martin the reasons why such an analysis is irrelevant in Australia.

21 Recording inventory activity

LO1, 2, 5

Campbell Company starts the month of January with 40 boxes of Bear Bars costing $20 each. The following transactions occurred during the month.

- 2nd Purchased 15 additional boxes for $22 each; paid with cash
- 4th Paid freight costs of $30 on 2 January purchase
- 10th Sold 45 boxes for $40 each
- 27th Purchased 10 additional boxes on account for $23 each

REQUIRED

Assume Campbell uses a *perpetual* inventory system and the FIFO costing method. Prepare all necessary journal entries related to Campbell's inventory activity.

Suppose that the inventory has a replacement value of $375 at the end of the month. What entry, if any, is required?

22 Analysing inventory

LO6

The following is comparative financial data for JK Martin Company and Stratton Company. All balance sheet data are as of 30 June 2017 and 30 June 2018.

	JK Martin Company		Stratton Company	
	2018	2017	2018	2017
Net sales	$2 000 000		$550 000	
Cost of sales	1 100 000		240 000	
Operating expenses	305 000		75 000	
Income tax expense	52 000		6 500	
Cash	85 070	$ 82 508	16 100	$ 15 777
Inventory	250 000	225 000	70 000	65 600
Property & equipment	525 000	500 000	140 000	125 000
Current liabilities	65 000	75 000	35 000	30 000
Long-term liabilities	109 000	88 000	29 000	24 800
Ordinary shares, $10 par	490 000	490 000	115 000	115 000
Retained earnings	173 000	147 520	40 756	30 289

REQUIRED

a Prepare a vertical analysis of the 2018 income data for JK Martin Company and Stratton Company. Is one company more profitable than the other?

b Prepare a horizontal analysis of the 2018 financial data for JK Martin Company and Stratton Company using 2017 as the base year. What does this analysis show?

c Calculate the inventory turnover and days in inventory ratios for 2018 for JK Martin Company and Stratton Company. Do these ratios change your conclusions about these companies?

23 Appendix: recording inventory activity

LO7

Campbell Company starts the month of January with 40 boxes of Bear Bars costing $20 each. The following transactions occurred during the month:

- 2nd Purchased 15 additional boxes for $22 each. Paid with cash
- 4th Paid freight costs of $30 on 2 January purchase
- 10th Sold 45 boxes for $40 each
- 27th Purchased 10 additional boxes on account for $23 each

REQUIRED

Assuming that Campbell uses a *periodic* inventory system, prepare all necessary journal entries related to Campbell's inventory activity. Calculate the cost of sales and the ending inventory under the FIFO, LIFO and weighted average costing methods.

24 Appendix: Inventory errors

LO7

Suppose that an organisation's preliminary financial statements show profit of $230 000 and ending inventory of $39 500. Several years later it was discovered that ending inventory should be $42 500.

REQUIRED

a Describe the error in the inventory account (for example, inventory was over/under stated by $XYZ) and calculate the organisation's correct net income for the year.

b What impact would the error have on the next year's profit?

c Given the impact on the two years of profits, is the error material?

25 Research and analysis

LO1, 3, 6, 7

Access the latest annual report for Cochlear Limited (ASX Code: COH).

REQUIRED

a Examine the company's income statement and balance sheet and conduct horizontal and vertical analyses of the company's cost of sales and inventory balances. Compare to CSL.

b Examine the company's inventories note to its financial statements. Do they reveal the inventory costing method(s) used to account for its inventory? Does the company follow the lower-of-cost-and-net-realisable-value rule? Is there any other information given about inventory?

c Calculate the inventory turnover and days-in-inventory ratios for the latest year.

d Based on your answers above, write a paragraph explaining your opinion of Cochlear's inventory position. Use facts to support your answer.

8

Non-current assets and intangible assets

This chapter examines the accounting for non-current assets – primarily property, plant and equipment (PPE) – or as it is sometimes called, 'fixed assets'. For most companies, the objectives associated with non-current assets are fairly simple. They want to acquire non-current assets, use them productively for some period of time and then dispose of them. Thus, the chapter examines these three activities: the acquisition of non-current assets, the depreciation (or amortisation for intangible assets) of non-current assets over their useful lives and their disposal. It also examines a few issues that arise during the life of a non-current asset, such as additional expenditures and revisions of original estimates. The chapter then focuses on how to analyse a company's non-current asset position. It concludes with the accounting for intangible assets and emphasising the concept of 'impairment'.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe non-current assets and how they are recorded, expensed and reported.
2. Calculate and compare depreciation expense using straight-line, reducing-balance (diminishing value) and units-of-activity methods.
3. Understand the effects of adjustments that may be made during a non-current asset's useful life.
4. Record the disposal of non-current assets.
5. Evaluate non-current assets through the calculation and interpretation of horizontal, vertical and ratio analyses.
6. Depict the cash flow effect of acquiring and disposing of non-current assets.
7. Describe intangible assets and how they are recorded, expensed and reported.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

LO1 RECORDING, EXPENSING AND REPORTING NON-CURRENT ASSETS

A non-current asset is any tangible resource that is expected to be used in the normal course of operations for more than one year and is not intended for resale. Examples include land, buildings, equipment, furniture and fixtures. Non-current assets are reported on the balance sheet (statement of financial position) and are classified as non-current assets because they are used for more than one year.

As you consider the definition of a non-current asset, note that the phrase 'not intended for resale' differentiates a non-current asset from inventory. A computer that Dell Corporation makes for sale is inventory, while that same computer used by a lecturer at university is a non-current asset. Also, note that the phrase 'used in the normal course of operations' differentiates a non-current asset from an investment. Land on which a company builds its office is a non-current asset, while land bought to be sold to a developer is an investment. The company's intended use of the asset dictates how the asset is classified.

Check out the video summary for Chapter 8

RECORDING NON-CURRENT ASSETS

Following the cost principle, non-current assets should be recorded at the cost of acquiring them. This includes all costs incurred to get the asset delivered, installed and ready to use. Examples of expenditures to include in the cost of a non-current asset would therefore include, but not be limited to, the following:

- purchase price
- taxes paid on the purchase
- fees such as legal (conveyancing) costs paid to a solicitor
- delivery costs

- insurance costs during transit
- installation costs.

To illustrate, suppose that Gavaskar Building Supply buys a delivery van with a purchase price of $63 000 and additional state stamp duty of $3600. Prior to receiving the van, Gavaskar has a reversing camera and GPS with vehicle tracking installed for $2400. Finally, Gavaskar pays $1400 for one year's insurance. Given the preceding items, the cost of Gavaskar's van is determined as follows:

Purchase price	$63 000
Stamp duty	3 600
Camera and GPS Tracker	2 400
Total cost	$69 000

Courtesy CSL

Accounting for non-current assets like this electron microscope involves recording the purchase, depreciating the asset over its life and then disposing of it

All of the costs except for the insurance are necessary to get the asset into its condition and location for intended use and are therefore included in the cost of the van. The insurance covers the van during its operations and is therefore an operating expense during the year (debit Insurance Expense $1400, credit Cash $1400). Assuming that Gavaskar paid cash, the entry to record the purchase of the van would be as follows:

Delivery Van (or Equipment)		69 000		
Cash				69 000
(To record the purchase of van)				
Assets	=	Liabilities	+	Equity
+69 000				
–69 000				

Consider another example. Suppose a company purchases a block of land for a new building site. The purchase price is $525 400 including stamp duty (taxes). The land requires $112 000 in clearing and removing waste before it can be used. The timber harvested from the clearing is sold for $20 000. The total cost of the land is as follows:

Purchase price	$525 400
Clearing and removal	112 000
Less: Sales of timber	(20 000)
Total cost	$617 400

In this case, each cost is included in the asset because the land is not in the condition for use until each of the activities is completed. Notice also that the proceeds from the sale of the timber reduce the cost of the land.

EXPENSING NON-CURRENT ASSETS

A non-current asset converts to an expense as it is used or consumed. The expensing of non-current assets is accomplished through depreciation.

Depreciation is the process of allocating the cost of a non-current asset over its useful life. Depreciation is an application of the matching principle – because a non-current asset is used to generate revenues period after period, some of its cost should be expensed in, or matched to, those same periods. The amount of expense recognised in each period is known as **depreciation expense**. The cumulative amount of depreciation expense recognised to date is known as **accumulated depreciation**.

depreciation The process of systematically and rationally allocating the cost of a non-current asset over its useful life.

depreciation expense The portion of a non-current asset's cost that is recognised as an expense in the current period.

accumulated depreciation The cumulative amount of depreciation expense recognised to date on a non-current asset.

Some students experience some confusion with depreciation because of its everyday use in our language. For example, it is often said that a new car 'depreciates' substantially in value once it is driven out of the dealer's showroom. When used in this way, the term 'depreciation' implies the price it could now be sold for is much less than was paid. For our purposes, depreciation is a process of allocating an asset's cost, not a method of determining an asset's market value.

While depreciation applies to non-current assets, not all non-current assets are depreciated. Depreciation applies only to those assets with limited useful lives. An asset has a limited useful life when its revenue-generating potential is limited by wear and tear and/or obsolescence. Most non-current assets such as equipment and buildings have limited useful lives and are therefore subject to depreciation. The major exception to this is land, which has an unlimited useful life. As a result, land is not subject to depreciation.

Depreciation expense is normally calculated at the end of an accounting period and is recorded with an adjusting journal entry. Regardless of the non-current asset being depreciated or the facts of the calculation, the general form of the entry is the same: depreciation expense and accumulated depreciation are increased.

To illustrate, suppose that Gavaskar calculates its van's depreciation as $10 000 for the first year. At year-end, Gavaskar would make the following entry:

Year-end	Depreciation Expense	10 000	
	Accumulated Depreciation		10 000
	(To record the depreciation expense)		

Assets	=	Liabilities	+	Equity
–10 000				–10 000

This entry increases Depreciation Expense for the $10 000 of cost allocated to the current period. However, instead of decreasing Delivery Van, the entry increases Accumulated Depreciation, which is a contra-asset account that accumulates all depreciation recorded to date. Its balance is subtracted from the non-current asset account to yield the carrying amount or net book value of the non-current asset. We will see an example of this later in the chapter. The result of this entry is a decrease to both equity and assets.

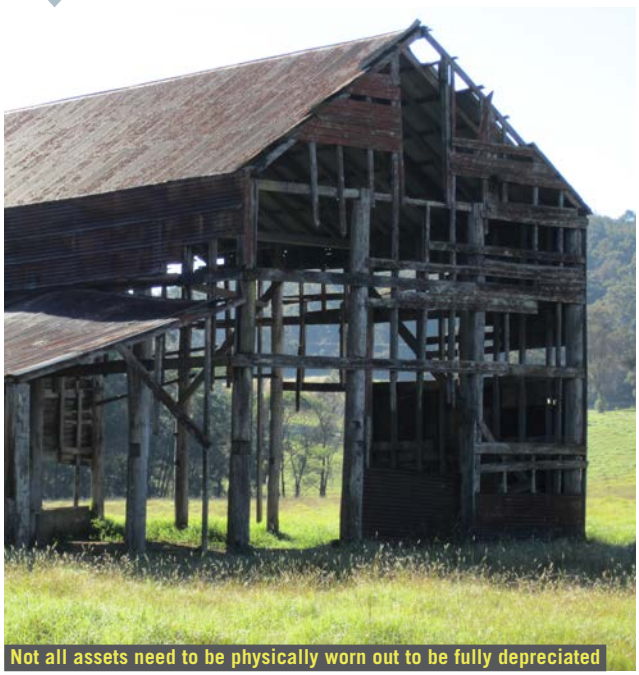
Like other expenses, depreciation expense is reported on the income statement. Most companies report it as a separate line item in the notes to the accounts.

CSL ANALYSIS

Look at CSL's balance sheet and Note 8 in Appendix B. What general name does the company use for its major non-current assets and what are the specific non-current assets that make up the largest non-current asset? What is the total (historical) cost of the largest non-current asset at 30 June 2017, and how much depreciation has been accumulated to that date? Compare Land to Plant and Equipment. Why might you expect a higher percentage of accumulated depreciation/amortisation on one rather than the other?

Analysis:

CSL's major non-current asset is PPE. Note 8 shows six specific PPE: land; buildings; leasehold improvements; plant and equipment; leased PPE; and capital work in progress. PPE in 2017 have a cost of $4525 million and accumulated depreciation/amortisation $1582 million. Land has no depreciation while buildings has $156 million. This reflects the unlimited life of land and the limited life of buildings (which may be demolished because they look out of date or no longer serve the purpose for which they were built rather than being physically worn out).



Not all assets need to be physically worn out to be fully depreciated

REPORTING NON-CURRENT ASSETS

Non-current assets are reported on the balance sheet, as we have seen with CSL, just below current assets. Notice CSL does not includes the word 'net' in the balance sheet for PPE, but in Note 8 the $2943 million at 30 June 2017 is described as 'net carrying amount', which is the **carrying amount** representing the cost of the PPE that has not yet been depreciated/amortised. It is calculated by subtracting the accumulated depreciation to date from the cost of PPE. For example, an asset costing $5000 with $1000 of accumulated depreciation would have a carrying amount (net book value) of $4000.

carrying amount The unexpired cost of a non-current asset, calculated by subtracting accumulated depreciation from the cost of the non-current asset.

Check out the animated summary on Depreciation

APPLY THIS

LO2 CALCULATING DEPRECIATION EXPENSE

When a company owns depreciable assets, it must calculate depreciation expense each period. Doing so requires the following information about the asset:

- **Cost** – the historical cost of the asset being depreciated. This is the amount that was recorded when the asset was purchased.

cost The historical cost of a non-current asset being depreciated.

residual value An estimate of the value of a non-current asset at the end of its useful life.

useful life The length of time a non-current asset is expected to be used in operations.

depreciable amount The difference between an asset's cost and its residual value.

- **Residual value** (or salvage value) – the market value of the asset at the end of its useful life. It is the amount the company expects to receive when the asset is sold, traded in, or scrapped.
- **Useful life** – the length of time the asset will be used in operations.
- **Depreciable amount** – the difference between an asset's cost and its residual value is the asset's net cost to the company. It is the total amount that should be depreciated over the (useful) life of the asset.

depreciation method The method used to calculate depreciation expense, such as the straight-line, reducing-balance and units-of-activity methods.

Depreciation method refers to the method used to calculate the depreciation expense. Generally Accepted Accounting Principles allow the use of several different methods for calculating depreciation expense. This chapter focuses on the following:

- straight-line method
- reducing-balance method
- units-of-activity method.

To illustrate how depreciation expense is calculated under each method, the Gavaskar Building Supply example will be continued. The following information about Gavaskar's delivery van is available:

- Purchase date: 1 January 2018
- Cost: $65 000
- Estimated residual value: $15 000
- Estimated useful life: five years or 100 000 kilometres.

STRAIGHT-LINE METHOD

straight-line method A depreciation method that results in the same amount of depreciation expense each year of the asset's useful life.

The **straight-line method** of depreciation spreads depreciation expense evenly over each year of the asset's useful life. It is a very simple calculation. The depreciable amount of the asset is divided by the useful life of the asset (in years) to yield the amount of depreciation expense per period. This calculation is shown in Key formula 8.1.

KEY FORMULA 8.1 STRAIGHT-LINE METHOD

$$\text{Depreciation Expense} = \frac{\text{Cost} - \text{Salvage Value}}{\text{Useful Life}}$$

For Gavaskar's delivery van, annual depreciation expense under the straight-line method would therefore be:

$$\text{Depreciation Expense} = \frac{\$65\,000 - \$15\,000}{5} = \$10\,000$$

Gavaskar would record the depreciation expense with the following adjusting journal entry at the end of the first year:

31 Dec. 2018	Depreciation Expense	10 000	
	Accumulated Depreciation		10 000
	(To record the depreciation expense)		

Assets	=	Liabilities	+	Equity
–10 000				–10 000

The same entry would be made at the end of each year until the end of 2022. Exhibit 8.1 illustrates depreciation for the entire useful life of the asset.

The depreciation schedule highlights several items. First, depreciation expense is the same each period. This will always be true under the straight-line method. Second, the accumulated depreciation account grows each year by $10 000 until the balance equals the depreciable amount of the asset. This is no coincidence. The final balance in accumulated depreciation is the total of all depreciation expense recorded during the asset's life. Therefore, the balance should equal the asset's depreciable amount. This will be true regardless of the depreciation method used.

Finally, the carrying amount decreases each year by $10 000 until it equals the residual value estimated for the asset. This is no coincidence either. Carrying amount represents the remaining unexpired cost of the asset. Therefore, an asset's final carrying amount should always equal the estimated residual value at the end of the asset's useful life. This will be true regardless of the depreciation method used.

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2018	($65 000 – $15 000) / 5	$10 000	10 000	55 000
2019	($65 000 – $15 000) / 5	10 000	20 000	45 000
2020	($65 000 – $15 000) / 5	10 000	30 000	35 000
2021	($65 000 – $15 000) / 5	10 000	40 000	25 000
2022	($65 000 – $15 000) / 5	10 000	50 000	15 000

EXHIBIT 8.1 Depreciation schedule – straight-line method

REDUCING-BALANCE METHOD

reducing-balance method A depreciation method that accelerates depreciation expense into the early years of an asset's life.

The **reducing-balance method** of depreciation is an accelerated method that results in more depreciation expense in the early years of an asset's life and less depreciation expense in the later years of an asset's life. As a result, the reducing-balance method is thought to more accurately reflect the pattern of use and the value of the benefit gained from the use or using up of the asset than the straight-line method. More depreciation expense is recorded when the asset is more useful.

To calculate depreciation expense under the reducing-balance method, the rate of depreciation is determined by a formula: 1 minus the *n*th root of the residual value divided by the cost (where *n* = useful life). For simplicity and to be consistent with the suggested tax depreciation rate, this may be approximated by taking the straight-line rate of depreciation and multiplying it by 1.5 (or 2). For example, if an asset has a four-year life, it has a 25 per cent straight-line depreciation rate (calculated by dividing 100 per cent by four years). The straight-line rate is then multiplied by 1.5 to get 37.5 per cent. An asset with a five-year life would have a 20 per cent straight-line rate, which would be a reducing-balance rate of 30 per cent. This rate is then multiplied by the carrying amount (not the original cost less the residual value, as with straight-line) of the asset to give the amount of depreciation expense for the period. This calculation is as follows:

KEY FORMULA 8.2 REDUCING-BALANCE METHOD

Depreciation = Depreciation Rate × Carrying Amount

= (Straight-Line Rate × 1.5)
× (Cost – Accumulated Depreciation)

Because an asset's carrying amount declines as the asset is depreciated, the amount of depreciation expense will therefore differ each period. In fact, depreciation expense will become smaller and smaller each period as the depreciation rate is applied to a smaller carrying amount. This stands in contrast to the straight-line method and is why the name of this method contains the words *reducing balance*.

Under the reducing-balance method, Gavaskar's depreciation expense for the first year of the asset's life is calculated as follows:

Depreciation Expense for 2018 = (20% × 1.5) × ($65 000 – $0)

= $19 500

You can now see how the reducing-balance method *accelerates* the depreciation. Instead of $10 000 of expense as under the straight-line method, depreciation expense in the first year is $19 500. In other words, $9500 of depreciation expense is *accelerated* to the first year by using the reducing-balance method instead of the straight-line method.

In the second year of the asset's life, the same formula is used. However, the resulting depreciation expense is lower because the depreciation rate is applied to a lower carrying amount. With $19 500 in depreciation to date, the accumulated depreciation balance is $19 500, yielding a carrying amount of $45 500 ($65 000 – $19 500). Therefore, depreciation expense in the second year would be:

Depreciation Expense for 2019 = 30% × ($65 000 – $19 500)

= $13 650

As you can see, depreciation expense for the second year is lower than the first year, but it is still more than would be calculated under the straight-line method. In other words, depreciation expense is still being accelerated to the early years of the asset's life.

In the fifth year of the asset's life, the same formula is again used, but this time the carrying amount is $15 606 (cost of $65 000 less accumulated depreciation of $49 394). Therefore, the calculation of depreciation expense for the fifth year is as follows:

Depreciation Expense for 2022 = 30% × $15 606 = $4682

Now, at this point we need to be careful. Over an asset's life, an entity cannot record more total depreciation than the asset's depreciable amount. Regardless of how much depreciation expense is calculated to be, an asset's accumulated depreciation balance should never exceed the asset's depreciable amount. In our example, Gavaskar's depreciable amount is $50 000. Accumulated depreciation after 2021 is $49 394. Therefore, depreciation expense in 2022 is limited to $606. This calculation is as follows:

Depreciable amount of asset ($65 000 – $15 000)	$50 000
Less: Accumulated depreciation at the end of 2021	49 394
Remaining depreciation to be taken	$ 606

Even though the calculation yields $4682, depreciation expense cannot reduce the carrying amount below the residual value. A schedule of depreciation for all five years is shown in Exhibit 8.2. The calculated amounts in 2022 are struck through and are replaced with the necessary amounts.

Note that, as expected, depreciation expense is accelerated to the early years of the asset's life. Note also that, like the straight-line method, the reducing-balance method results in a total of $50 000 of depreciation expense and a resulting carrying amount that is equal to the estimated residual value of $15 000. The only difference between the methods is *when* depreciation expense is recognised.

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2018	(20% × 1.5) × ($65 000 – $0)	$19 500	19 500	45 500
2019	30% × ($65 000 – $19 500)	13 650	33 150	31 850
2020	30% × ($65 000 – $33 150)	9 555	42 750	22 295
2021	30% × 22 295	6 689	49 394	15 606
2022	Cannot be 30% × $15 606	~~4 682~~	~~54 076~~	~~10 924~~
		606 only	50 000 maximum	15 000 minimum

EXHIBIT 8.2 Depreciation schedule – reducing-balance method

UNITS-OF-ACTIVITY METHOD

Both the straight-line and reducing-balance methods are a function of the passage of time rather than the actual use of the asset. Each method assumes that the calculated depreciation is a reasonable representation of the actual usage of the asset. In contrast, the **units-of-activity method** of depreciation calculates depreciation based on actual asset activity. Because it relies on an estimate of an asset's lifetime activity, the method is limited to those assets (such as a photocopier) where units of activity can be determined precisely or with some degree of accuracy.

units-of-activity method A depreciation method in which depreciation expense is a function of the actual usage of the asset.

Calculating depreciation expense under the units-of-activity method starts by calculating depreciation per unit of expected activity. Depreciation per unit of expected activity is the depreciable amount of the asset divided by the estimated units of activity over the life of the asset.

KEY FORMULA 8.3 UNITS-OF-ACTIVITY METHOD

$$\text{Depreciation Expense per Unit} = \frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life in Units}}$$

$$\text{Depreciation Expense} = \text{Depreciation Expense per Unit} \times \text{Actual Units of Activity}$$

Note that this calculation is very similar to the straight-line calculation. Depreciable amount is divided by estimated life. But, instead of calculating depreciation expense per year, depreciation expense per unit of activity is calculated. Once depreciation expense per unit is known, depreciation expense is determined by multiplying the per unit rate by the actual units of activity during the period.

For Gavaskar's van, depreciation expense per unit will be a function of kilometres driven. Since Gavaskar estimates that the van will be driven 200 000 kilometres, its estimated depreciation per kilometre would be $0.25 per kilometre. In passing, the Australian Taxation Office allows a deduction of $0.66 per kilometre for limited vehicle use, but this includes all costs, fuel, maintenance and depreciation.

$$\text{Expense per Unit} = \frac{\$65\,000 - \$15\,000}{200\,000 \text{ kilometres}}$$

$$= \$0.25 \text{ per kilometre}$$

With a $0.25 per kilometre rate, the actual kilometres driven in a given year is needed to calculate depreciation expense. Assume that Gavaskar drives the van 48 000 kilometres in 2018. Its depreciation expense for 2018 would therefore be $12 000.

$$\text{Depreciation Expense} = \$0.25 \times 48\,000 = \$12\,000$$

Similar calculations would be made for the next four years of the asset's life. A depreciation schedule, complete with the actual kilometres driven in each of the five years, is shown in Exhibit 8.3.

As you review the schedule, note that depreciation expense fluctuates as the asset's activity fluctuates. As a result, depreciation expense is a function of usage. Second, note that the total number of kilometres driven over the five years equals 200 000 kilometres. This assumption is made for simplicity. However, had Gavaskar driven the van more than 200 000 kilometres, total depreciation expense over the life of the asset would still be limited to $50 000, the asset's depreciable amount.

COMPARING DEPRECIATION METHODS

The calculations in the previous sections demonstrate that a company's depreciation expense in a given year will depend on the depreciation method chosen. For comparative purposes, Exhibit 8.4 summarises the annual depreciation for Gavaskar's van as well as the resulting carrying amounts under the three methods.

The summary demonstrates that total depreciation expense over the life of the asset is $50 000 regardless of the method chosen. However, each method arrives at $50 000 differently. The straight-line method depreciates the same amount each year. The reducing-balance method accelerates depreciation into the early years of the

asset's life. The units-of-activity method depreciates different amounts each year depending on the asset's usage. No depreciation method is right – they are just different; and companies choose to use one over another for different reasons. For taxation purposes the depreciation method which is allowed and provides the earliest, largest deduction is usually chosen. The depreciation method used in the financial reports does not need to be the same as chosen to calculate taxable income. Like all tax-deductible expenses, depreciation reduces taxable income, which in turn reduces income taxes. Assuming a 30 per cent tax rate in the example above, the $50 000 of depreciation on the van will lower taxes by $15 000. The advantage of the reducing-balance method is that more of the tax savings are realised in the earlier years. This is beneficial to a company because the company can temporarily use the cash that would otherwise be paid to the Australian Taxation Office.

Regardless of the method chosen, companies should disclose their choices in the notes to their financial statements so that comparisons can be made among different companies. This is an application of the qualitative characteristic of comparability. The disclosure is usually found in a note dedicated solely to PPE.

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The use of the service potential of this equipment is shown as part of the $2.9 billion of accumulated depreciation of Plant and Equipment in Note 8 of CSL's financial statements

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2018	$0.25 × 48 000 km	$12 000	12 000	53 000
2019	$0.25 × 44 000 km	11 000	23 000	42 000
2020	$0.25 × 54 000 km	13 500	36 500	28 500
2021	$0.25 × 34 000 km	8 500	45 000	20 000
2022	$0.25 × 20 000 km	5 000	50 000	15 000

EXHIBIT 8.3 Depreciation schedule—units-of-activity method

	Straight-line		Reducing-balance		Units-of-activity	
Year	Depreciation expense	Carrying amount	Depreciation expense	Carrying amount	Depreciation expense	Carrying amount
2018	$10 000	$55 000	$19 500	$45 500	$12 000	$53 000
2019	10 000	45 000	13 650	31 850	11 000	42 000
2020	10 000	35 000	9 555	22 295	13 500	28 500
2021	10 000	25 000	6 689	15 606	8 500	20 000
2022	10 000	15 000	606	15 000	5 000	15 000
	$50 000		$50 000		$50 000	

EXHIBIT 8.4 Comparison of three depreciation methods

CSL ANALYSIS

Look at CSL's Note 8: Property, plant and equipment in Appendix B
What method of depreciation does the company use? Which assets have the shortest useful life and which the longest? What adjustments are made to residual values and useful life?

Analysis:
CSL uses straight-line depreciation. Plant and equipment is expected to last 3 to 15 years and Buildings 5 to 40 years.

'Assets' residual values and useful life are reviewed and adjusted if appropriate at each reporting date. Items of PPE are derecognised upon disposal or when no further economic benefits are expected from their use or disposal.'

APPLY THIS

Review this content with the e-lecture

LO3 ADJUSTMENTS MADE DURING A NON-CURRENT ASSET'S USEFUL LIFE

Since non-current assets are used for multiple years, companies sometimes must make adjustments as new information is available or as new activity occurs. These adjustments can arise from the following:

- changes in estimates
- additional expenditures to improve the non-current asset
- declines in the asset's residual value (recoverable amount).

CHANGES IN DEPRECIATION ESTIMATES

Calculating depreciation expense requires that a company estimate the asset's useful life and its residual value. These estimates are normally based on previous company experience with similar assets as well as factors such as the manufacturer's recommendations. As a result, they are usually fair and reasonable. However, estimates can differ from actual experience. When such errors are small and will not affect decision-making (i.e. are immaterial), they are usually ignored. When the estimates are materially wrong, though, revisions can be made. We call this a change in estimate.

When an estimate is changed, the change is made prospectively, meaning that the change affects only the calculation of current and future depreciation expense. Depreciation expense for prior years is not (retroactively) corrected. Once an estimate is revised, current and future depreciation expense is calculated with the new estimate. This is done by determining the remaining depreciable amount of the asset at the time of the revision and depreciating that cost over the remaining useful life using the same depreciation method.

To illustrate, suppose that Bechmann Supply purchased a machine for $90 000 on 1 January 2016. Bechmann estimated at the time that that the machine would have a 10-year useful life and a $10 000 residual value. Bechmann used the straight-line method of depreciation and recorded $8000 of depreciation expense [($90 000 – $10 000) / 10] each year as follows:

31 Dec.	Depreciation Expense	8 000	
	Accumulated Depreciation		8 000
	(To record depreciation expense)		

Assets	=	Liabilities	+	Equity
–8 000				–8 000

Now suppose that on 1 January 2020, Bechmann decides that the machine will last only eight years (another four years) rather than the ten years originally estimated and will have a residual value of only $6000 rather than $10 000. When these revisions are made, Bechmann does not correct the four previous depreciation expense entries of $8000 because they were based on reasonable estimates at the time. Instead, Bechmann calculates the remaining depreciable amount of the asset and spreads it out over the remaining useful life.

To do this, we must first calculate the net book value of the asset on the date of revision. This represents the unexpired cost of the asset.

Carrying amount at the time of estimate revision:	
Cost of the asset, 1 January 2016	$90 000
Less: Accumulated depreciation for four years (4 x $8000)	32 000
Carrying amount on 1 January 2020	$58 000

Next, we subtract from the carrying amount the asset's residual value, which will result in the asset's remaining depreciable amount. Keep in mind that we use the revised residual value. This is shown as follows:

Depreciable amount for future depreciation:	
Carrying amount on 1 January 2020	$58 000
Less: Estimated residual value	6 000
Remaining depreciable amount	$52 000

Finally, under the straight-line method we calculate depreciation expense by dividing the remaining depreciable amount by the remaining useful life. In this case, the total useful life is now estimated to be eight years instead of ten, which means that there are only four years remaining instead of six.

Depreciation expense under revised estimates:	
Remaining depreciable amount	$52 000
Divided by remaining useful life	4
Annual depreciation expense	$13 000

With this *new* depreciation expense calculated, Bechmann would make the following journal entry at the end of Years 5 to 8:

31 Dec.	Depreciation Expense	13 000	
	Accumulated Depreciation		13 000
	(To record depreciation expense)		

Assets	=	Liabilities	+	Equity
13 000				13 000

So, Bechmann depreciates $8000 per year in Years 1 to 4 and $13 000 per year in Years 5 to 8. This results in $84 000 of total depreciation over the life of the asset, which is equal to the original cost of the asset less its revised residual value ($90 000 – $6000 = $84 000).

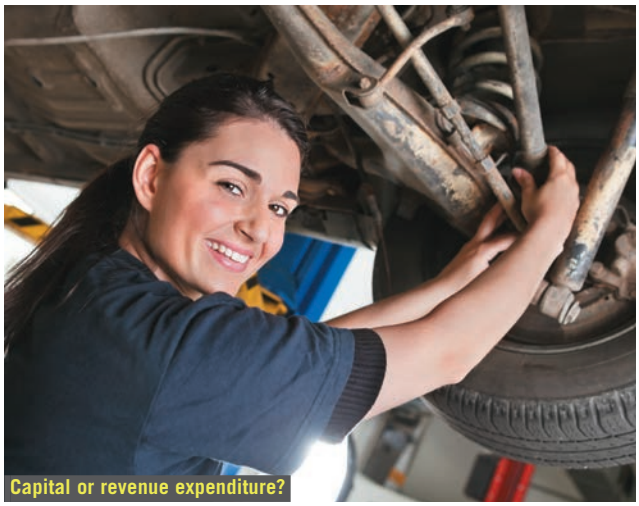
When a company has a material change in a non-current asset estimate, it will disclose the change in the notes to its financial statements. AASB 108 *Accounting Policies, Changes in Accounting Estimates and Errors* (IAS 8) requires the disclosure of the nature and amount of a change in an accounting estimate. This is done to enhance the relevance, reliability and comparability of the financial statements.

EXPENDITURES AFTER ACQUISITION

Most non-current assets require expenditures throughout their useful lives. The purchasing price of a car is only the first cost. Expenditures for servicing, minor repairs and even major repairs come with ownership. So, how are these additional expenditures treated from an accounting standpoint?

The accounting treatment for expenditures made during the useful life of a non-current asset depends on whether they meet the 'recognition criteria' in AASB 116: 'The cost of an item of property, plant and equipment shall be recognised as an asset if, and only if: (a) it is probable that future economic benefits associated with the item will flow to the entity; and (b) the cost of the item can be measured reliably'.[1] Repairs and maintenance (sometimes called revenue expenditures) maintain the expected useful life or productivity of the asset. Repairs and maintenance are expensed in the period in which they are incurred. They are not added to the cost of the asset.

To illustrate, suppose that a company purchases an air conditioning unit for $50 000 on 1 January 2016. The company estimates the asset's useful life and residual value at five years and $0, respectively. Using the straight-line depreciation method, the company records $10 000 of depreciation expense each year. Now suppose that on 1 January 2020, during the fifth year of the asset's life, the company incurs $1000 in ordinary maintenance and $8000 for upgrades. The upgrades allow the machine to be used productively in 2021 and 2022.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Capital or revenue expenditure?

Given this information, the $1000 is a 'revenue' expenditure and should be expensed as follows:

1 Jan. 2020	Maintenance Expense	1 000	
	Cash		1 000
	(To record normal maintenance)		

Assets	=	Liabilities	+	Equity
–1 000				–1 000

In contrast, the $8000 for upgrades meets the recognition criteria in AASB 116 since the asset's useful life is extended two years. It should therefore be capitalised with the following entry:

1 Jan. 2020	Air Conditioning Unit	8 000	
	Cash		8 000
	(To record upgrade to asset)		

Assets	=	Liabilities	+	Equity
+8 000 –8 000				

Notice that this entry results in an increase (Air Conditioning Unit) and decrease (Cash) to assets rather than a change in equity. This is because the company is capitalising the expenditure rather than expensing it.

With this addition to the cost of the asset, depreciation expense for 2020 must be recalculated. To do so, the company follows the same general procedures used in the change of estimate scenario. It first calculates the carrying amount of the asset and then adds the capital expenditure to obtain the updated carrying amount. This is shown as follows:

Carrying amount after the capital expenditure:	
Cost of the asset, 1 January 2016	$50 000
Less: Accumulated depreciation for four years	40 000
Carrying amount on 1 January 2020	$10 000
Add: Upgrades made in 2020	8 000
Updated carrying amount on 1 January 2020	$18 000

Next, the company subtracts the asset's residual value to get the remaining depreciable amount. Under the straight-line method of depreciation, the depreciable amount is then divided by the remaining useful life to obtain depreciation expense. In 2020, 2021 and 2022, the company will record $6000 of depreciation expense each year.

Depreciation expense after capital expenditure:	
Updated carrying amount on 1 January 2020	$18 000
Less: Estimated residual value	0
Remaining depreciable amount on 1 January 2020	$18 000
Divided by remaining useful life	3
Annual depreciation expense	$ 6 000

While the classification of post-acquisition expenditures may seem rather unimportant, it is actually an area of great interest because of the potential for fraudulent behaviour by companies. One of the largest corporate frauds in recent history centred on the treatment and reporting of revenue expenditures. In 2002, it was discovered that WorldCom was treating operating expenses associated with telecommunication lines as capital expenditures. Instead of appearing on the income statement (statement of comprehensive income) as expenses, these costs were recorded as assets on the balance sheet. This resulted in a gross understatement of current expenses and overstatement of profits. Over the seven quarters that it committed this fraud, the company overstated its results by several billion dollars.

ASSET IMPAIRMENT

Sometimes, a non-current asset's 'recoverable amount' will fall substantially due to changing market conditions, technological improvements, or other factors. In Australia, renewable energy targets may make some assets (e.g. some coal-fired power stations) reduce substantially in value. When a non-current asset's recoverable amount falls materially below its carrying amount, the asset is considered *impaired*. Accounting Standard AASB 136 *Impairment of Assets* requires reporting entities to write impaired assets down to the higher of an asset's fair value (selling price) less costs to sell and its value in use. This, like the lower-of-cost-and-net-realisable-value rule with inventory, is an application of the concept of prudence (conservatism). The Australian Securities and Investments Commission released 'Impairment of non-financial assets: Materials for directors', which stated: 'Impairment testing is the process of reviewing the values of assets shown in the balance sheet of a company (known as the "carrying amount") to determine whether those values continue to be supportable or should be reduced'. It also stated that: 'Financial reports should provide useful and meaningful information for investors and other users of those financial reports so that they can be confident and informed in making investment and other decisions'.[2]

CSL ANALYSIS

Look at CSL's Note 8 in Appendix B. What does it say about impairment?

Analysis:

Impairment testing for property, plant and equipment occurs if an impairment trigger is indicated. No impairment triggers have been identified in the current year.[3]

To illustrate, suppose a company has equipment that makes a unique toy that becomes extremely popular. The equipment has a carrying amount of $140 000 and a higher market value. Suppose further that the toy suddenly loses its popularity and the company is unable to alter the machine to produce anything else. As a result, the fair (market) value of the machine plummets to $40 000. The company declares that the asset is impaired. The asset impairment would be recorded as follows:

Loss on Impairment		100 000		
Non-current Asset				100 000
(To record permanent impairment of asset)				
Assets	=	Liabilities	+	Equity
–100 000				–100 000

In the previous entry, Loss on Impairment is increased to reflect the decline in value of the asset. This reduces equity. This loss is considered to be part of the profit and loss, and the loss would be included with other expenses. Only if the impairment loss was on a revalued asset would it be among other comprehensive income items in the comprehensive income section. In addition, the Non-current Asset account is decreased to reflect the reduced value. This reduces assets. After the impairment entry, depreciation expense would be calculated based on the revised depreciable amount and remaining useful life.

Asset impairments are not uncommon. In fact, AASB 136 requires 'an entity shall assess at the end of each reporting period whether there is any indication that an asset may be impaired'.[4]

ASSET REVALUATIONS

cost model After recognition as an asset, an item of plant, property and equipment shall be carried at its cost less any accumulated depreciation and any impairment loss.

revaluation model If fair value can be measured reliably the asset shall be carried at a revaluation amount.

The Accounting Standard AASB 116 allows either the 'cost model' or the 'revaluation model' as an entity's accounting policy to measure plant, property and equipment. The **cost model** states 'after recognition as an asset, an item of plant, property and equipment shall be carried at its cost less any accumulated depreciation and any impairment loss'.[5] The **revaluation model** states if 'fair value can be measured reliably the asset shall be carried at a revaluation amount'.[6] If the revaluation model is used, assets should

be revalued regularly to ensure the carrying amount does not differ materially from fair value at the end of the reporting period.

Alamy Stock Photo/Sergio Azenha

Assets are sometimes impaired because they are no longer popular

There are a number of restrictions on management simply revaluing assets to boost the business' profits. One is that all assets in a 'class' must be revalued. So we cannot have a case where some machinery is revalued and other machinery is not. Examples of other classes of assets are ships, furniture and fittings, office equipment, land and buildings. But the significance of 'comprehensive' in a statement of comprehensive income (rather than the simple income statement) may now become a little clearer. Upward revaluations are included in 'other comprehensive income' not in the income statement. CSL includes 'actuarial gains/(losses) on defined benefit plans' (see note 18) as part of 'other comprehensive income'. It is not important what an actuarial gain is, but the fact that it is in comprehensive income indicates the fair value has increased, but they have not been sold and the gain actually made or 'realised'. For many people who own their own house, the increase in the fair value of their house makes them feel wealthier, but until the house is sold and the gain realised it is part of their income, not profit.

Over the years the way different increases in an entity's value have been accounted for has changed, but the accounting standards divide income into two parts: 'profit or loss' and 'comprehensive income'. Upward revaluations of assets are included in comprehensive income, while the sale of an asset above its carrying amount would be (normal) profits.

LO4 DISPOSING OF NON-CURRENT ASSETS

When a company decides that it no longer needs a non-current asset, it usually disposes of the asset in one of three ways. When the asset has no value, it will simply be discarded, and sometimes there will be a cost in disposing of the asset. When the asset still has value, it will either be sold or traded in for another asset, often a newer model. Since the accounting for trading an asset is beyond the scope of this book, we will focus on the first two cases – discarding or selling the asset.

The accounting for the disposal of a non-current asset consists of the following three steps:

1. Update depreciation on the asset.
2. Calculate gain or loss on the disposal.
3. Record the disposal.

The first step is to record any necessary depreciation expense to update the Accumulated Depreciation account. Usually, this means that depreciation expense must be recorded for a partial period. For example, a company that records annual depreciation expense on 31 December and sells equipment on the following 15 February must record depreciation expense for one and a half months at the time of disposal.

The second step is to calculate any gain or loss on the disposal by comparing the asset's carrying amount to the proceeds from the asset's sale, if any. When the proceeds exceed the carrying amount, a gain on disposal is recognised. When the carrying amount exceeds the proceeds, a loss on disposal is recognised. This is summarised below:

KEY FORMULA 8.4 DISPOSALS

Gain on Disposal = Proceeds from Sale > Carrying Amount

Loss on Disposal = Proceeds from Sale < Carrying Amount

The third and final step is to prepare a journal entry that decreases the asset account and its related accumulated depreciation account. If the asset is sold and cash is received, the entry must also record the increase in cash. Finally, any gain or loss on the disposal must be recorded.

To illustrate, suppose that a company purchases a machine on 1 January 2018 for $30 000. The company estimates the useful life and residual value to be four years and $2000, respectively. The company uses the straight-line method of depreciation and records depreciation expense annually on 31 December. Given these facts, annual depreciation expense for the machine is $7000 [($30 000 – $2000) / 4].

LOSS EXAMPLE

Suppose further that the company sells the machine on 30 June 2020 for $12 000. To account for this sale, the company must first update the accumulated depreciation account. The asset has been used for six months since the last time depreciation was recorded (31 December), so the company must record six months of depreciation expense.

Since annual depreciation expense is $7000, six months of depreciation would be half of that, or $3500. Therefore, the following entry would be made on 30 June 2020:

30 June 2020	Depreciation Expense	3 500	
	Accumulated Depreciation		3 500
	(To record the depreciation expense)		

Assets	=	Liabilities	+	Equity
–3 500				–3 500

As a result of this entry, the accumulated depreciation account is updated to a balance of $17 500 ($7000 in 2018, $7000 in 2019 and $3500 in 2020). With this balance, the gain/loss on disposal can be calculated as follows:

Proceeds from sale		$12 000
Cost of machine	$30 000	
Less: accumulated depreciation	17 500	
Carrying amount at 30 June 2020		12 500
Loss on sale		$ (500)

Because the asset's carrying amount of $12 500 exceeds the sale proceeds of $12 000, the company generates a $500 loss (expense). With this information, the company can prepare the following journal entry to record the disposal:

30 June 2020	Cash	12 000	
	Accumulated Depreciation	17 500	
	Loss on Disposal	500	
	Machine		30 000
	(To record the sale of the machine)		

Assets	=	Liabilities	+	Equity
+12 000				– 500
+17 500				
–30 000				

The entry first decreases the Machine account by $30 000 to eliminate the account. A common mistake is to think that the Machine account should be decreased by its carrying amount of $12 500. But remember that non-current assets are recorded and maintained at their costs, so the balance in the Machine account is $30 000 prior to disposal. Second, the entry decreases Accumulated Depreciation by $17 500. Because the company no longer has the asset, it should no longer maintain accumulated depreciation for the asset. Third, the entry increases the Cash account to reflect the asset received from selling the machine. Finally, the entry increases a Loss on Disposal account to reflect the loss on sale. As a result of the entry, assets and equity decrease by $500, the amount of the loss.

GAIN EXAMPLE

To illustrate a gain example, suppose that the company sells the machine on 31 March 2021 for $8000. After updating depreciation, the Accumulated Depreciation account would have a balance of $22 750:

Three full years (2018, 2019, 2020)	$21 000
One-quarter of 2021 ($7 000 × ¼)	1 750
Accumulated depreciation at 31 March 2021	$22 750

Therefore, the machine's carrying amount and the gain/loss on disposal at 31 March 2021 can be calculated as follows:

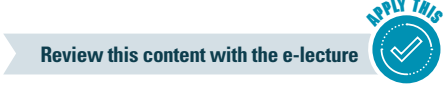
Proceeds from sale		$8 000
Cost of machine	$30 000	
Less: accumulated depreciation	22 750	
Carrying amount at 31 March 2021		7 250
Gain on sale		$ 750

Because the sale proceeds of $8000 exceed the asset's carrying amount of $7250, the company generates a $750 gain (revenue). With this information, the following journal entry can be prepared to record the disposal:

31 Mar. 2021	Cash	8 000	
	Accumulated Depreciation	22 750	
	Gain on Disposal		750
	Machine		30 000
	(to record the sale of the machine)		

Assets	=	Liabilities	+	Equity
+8 000				+750
+22 750				
–30 000				

Like the loss example, the entry decreases the Machine account by $30 000. It also decreases the machine's Accumulated Depreciation account by $22 750 to eliminate the account and increases the Cash account by $8000 to reflect the asset received from selling the machine. Finally, the entry increases a Gain on Disposal account to reflect the gain on sale. Like the loss example, the net effect on the accounting equation is an equal change in assets and equity, with this example resulting in a $750 increase to both.



LO5 EVALUATING A COMPANY'S MANAGEMENT OF NON-CURRENT ASSETS

Because non-current assets comprise the largest category of assets for most companies, it is usually a good idea to evaluate a company's management of its non-current assets. A company manages non-current assets by acquiring them, using them productively and then replacing them. Therefore, two issues of importance for any company with non-current assets would be as follows:

1. How productive are the company's non-current assets in generating revenues?
2. What is the condition of the company's non-current assets?

The following sections examine these issues for the non-current assets of a hypothetical vegetarian restaurant chain, Kale Me Crazy (KMC). The examination will require information from the company's balance sheet, income statement and notes to the financial statements. The required information is found in Exhibit 8.5, excerpted from KMC's 2019 Annual Report.

HORIZONTAL AND VERTICAL ANALYSES

A good place to start an analysis of non-current assets is with horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance less the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account is total assets for balance sheet accounts and net sales or total revenues for income statement accounts. These calculations are summarised as follows:

Horizontal analysis		
Dollar Change in Account Balance	=	Current year Balance – Prior year Balance
Percentage Change in Account Balance	=	$\frac{\text{Dollar Change}}{\text{Prior year Balance}}$
Vertical analysis		
Percentage	=	$\frac{\text{Account Balance}}{\text{Total Assets}}$ or $\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

Given the financial information in Exhibit 8.5, horizontal and vertical analyses of non-current assets and depreciation expense result in the following. Note that the carrying amount of property and equipment is used in the calculations. Note also that vertical analysis is conducted on both years of data.

Horizontal analysis		
	Dollar change	**Percentage change**
Property and equipment	20 254.5 –20 984.7 (730.2)	$\frac{(730.2)}{20\,984.7} = 3.5\%$
Depreciation expense	1 161.6 1 145.0 16.6	$\frac{16.6}{1\,145.0} = 1.5\%$
Vertical analysis		
	2019	**2018**
Property and equipment	$\frac{20\,254.5}{28\,461.5} = 71.2\%$	$\frac{20\,984.7}{29\,391.7} = 71.4\%$
Depreciation expense	$\frac{1\,161.6}{23\,522.4} = 4.9\%$	$\frac{1\,145.0}{22\,786.6} = 5.0\%$

The calculations show a fairly stable non-current asset position. Horizontal analysis shows a slight decrease of 3.5 per cent in non-current assets and a slight increase of

Source	Accounts	2019 ($m)	2018 ($m)
Income statement	Total revenues	$ 23 522.4	$ 22 786.6
	Property and equipment, at cost	31 152.4	32 203.7
	Less: Accumulated depreciation	(10 897.9)	(11 219.0)
Balance sheet	Net property and equipment	20 254.5	20 984.7
	Total assets	28 461.5	29 391.7
Notes to financial statements	Depreciation expense	1 161.6	1 145.0

EXHIBIT 8.5 Kale Me Crazy account balances from the 30 June 2019 Annual Report

1.5 per cent in depreciation expense from 2018 to 2019. Vertical analysis shows that non-current assets make up a large part of KMC's asset base. In each year, slightly over 71 per cent of the assets are non-current assets. Furthermore, depreciation expense is shown to be about 5 per cent in each year. This tells us that for every dollar in sales revenue, the company incurs about 5 cents in depreciation expense. Overall, both of these analyses indicate fairly stable non-current assets over the two-year period.

NON-CURRENT ASSET TURNOVER RATIO

The preceding analyses indicate that KMC's non-current assets are stable. But they do not indicate whether the company is using those non-current assets productively to generate revenues. One way to find out is to calculate the non-current asset turnover ratio. The **non-current asset turnover ratio** compares total revenues during a period to the average carrying amount of non-current assets during that period. It is calculated as follows:

non-current asset turnover ratio A comparison of total revenues to the average net carrying amount of non-current assets that measures the productivity of non-current assets.

KEY FORMULA 8.5 NON-CURRENT ASSET TURNOVER RATIO

$$\text{Non-current Asset Turnover Ratio} = \frac{\text{Total Revenues}}{\text{Average Net Carrying Amount of Non-current Assets}}$$

Where average net book value is:

$$\frac{\text{Beginning Net Carrying Amount} + \text{Ending Net Carrying Amount}}{2}$$

Because this ratio compares total revenues to non-current assets, it indicates the productivity of every dollar invested in non-current assets. In general, companies want this ratio to be higher rather than lower. All other things being equal, a higher ratio indicates that the company is using its non-current assets more effectively to produce more revenue.

The 2019 non-current asset turnover ratio is calculated as follows:

$$\frac{23\,522.4}{(20\,254.5 + 20\,984.7) \div 2} = 1.14$$

The 1.14 ratio shows that KMC's total revenues for 2019 were 1.14 times the average carrying amount of its non-current assets. In other words, for every dollar of non-current assets, on average, the business was able to generate $1.14 in revenue during the period. Whether this is good or bad requires some comparison. Its major competitor's non-current asset turnover ratio was 1.60, while another competitor's was 2.67. KMC lags its two rivals in generating revenues from its non-current assets.

CSL ANALYSIS

Using CSL's information in Appendix B, calculate and interpret:

1. horizontal and vertical analyses of non-current assets and depreciation expense (Note 14 'Reconciliation of Profits after tax to Cash Flow from Operations')
2. non-current asset turnover ratio
3. average life and average age of non-current assets.

Analysis:

1 Horizontal analysis

Non-current assets:

($4520.6 – 3744.7) / $3744.7 = 20.7%

Depreciation (amortisation and impairment charges) expense:

($279.3 – 220.3) / $220.3 = 26.7%

Vertical analysis

Non-current assets:

$4520.6 / $9122.7 = 49.6%

Depreciation expense:

$279.3 / $6922.8 = 4.0%

The horizontal analysis shows that while non-current assets increased substantially (over 20%), depreciation expense was up even more. The almost 50 per cent vertical analysis of non-current assets shows non-current assets are (slightly) less important than current assets to CSL. The 4.03 per cent vertical analysis of depreciation expense indicates that while CSL has large non-current assets, depreciation expense consumes just over 4 cents per dollar of operating revenue in the most recent year.

2 Non-current asset turnover ratio:

$6922.8 / ($4520.6 + $3744.7) / 2 = 1.68

The 1.68 non-current asset turnover ratio indicates that CSL generates $1.68 in revenue for every $1 of non-current assets that it owns. This number is almost meaningless in isolation, only when compared to previous or future years or similar biotechnology companies can sense be made of this number.

3 Average (Property, Plant and Equipment) life and age ratios (figures from Notes 8 and 14)

$4525 / 279.2 = 16.2 years

The 16.2 average life shows that CSL's non-current assets on average last just over 16 years.

$1582.3 / $279.2 = 5.7 years

The 5.7-year average age ratio indicates that the company's non-current assets are relatively young, having been used for less than six years. Taken together, these two ratios indicate that CSL may not need significant non-current asset replacement in the short term.

AVERAGE LIFE AND AGE OF NON-CURRENT ASSETS

In addition to understanding the productivity of non-current assets, it is useful to understand the condition of a company's non-current assets. Non-current assets in poor condition are usually less productive and normally require significant expenditures to either repair or replace. While a user of most companies' financial statements cannot physically examine their non-current assets, one way to get a rough idea of the general condition of a company's non-current assets is to look at the age of the assets in comparison to their useful lives. This can be accomplished by calculating the average useful life and average age of the assets.

average useful life of non-current assets A comparison of the cost of non-current assets to depreciation expense that estimates the number of years, on average, that a company expects to use its non-current assets.

The **average useful life of non-current assets** represents the number of years, on average, that a company expects to use its non-current assets. It is calculated as follows:

KEY FORMULA 8.6 AVERAGE USEFUL LIFE RATIO

$$\text{Average Useful Life} = \frac{\text{Cost of Non-Current Assets}}{\text{Depreciation Expense}}$$

The ratio divides the total cost of non-current assets by the amount of annual depreciation expense to approximate the number of years that it will take to fully depreciate the assets. A higher number represents a longer useful life. You may notice that this ratio is basically a rearrangement of the calculation of straight-line depreciation. Therefore, the ratio works best when the company uses the straight-line method. In the case of CSL a more useful calculation may be to exclude: deferred tax; goodwill; land; capital works in progress as these non-current assets are not amortised or depreciated.

average age of non-current assets A comparison of accumulated depreciation to depreciation expense that estimates the number of years, on average, that the company has used its non-current assets.

The **average age of non-current assets** represents the number of years, on average, that the company has used its non-current assets. It is calculated as follows:

KEY FORMULA 8.7 AVERAGE AGE RATIO

$$\text{Average Age} = \frac{\text{Accumulated Depreciation}}{\text{Depreciation Expense}}$$

The ratio divides the accumulated depreciation balance by the amount of annual depreciation expense to approximate the number of years that the assets have already been depreciated. A higher number means that the assets are older. Like the average useful life ratio, the average age ratio works best when the company uses the straight-line method.

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LO6 NON-CURRENT ASSETS AND CASH FLOWS

Another important aspect of non-current assets is their effect on a company's cash flows. Non-current assets affect cash flows the most when they are purchased. Because companies often purchase significant amounts of non-current assets each year, the cash paid for them is reported as a separate line item in the investing activities section of the statement of cash flows. The line item is often labelled as capital expenditures or something similar. KMC is a little more specific, reporting the following on the first line of its investing activities section:

Kale Me Crazy 2019 capital expenditures from the statement of cash flows

in millions	2019	2018	2017
Property and equipment expenditures	$(2 135.7)	$(1 946.6)	$(1 741.9)

The negative number signifies a cash outflow. In 2019, KMC spent over $2.1 billion in cash to purchase non-current assets. In the two previous years, the company spent about $1.9 billion and $1.7 billion. For the three years combined, this totals over $5.8 billion in cash paid for non-current assets.

istock.com/Lighthousebay

In a restaurant, the money spent to create the right atmosphere must be recouped from the dining public

A natural question arising from this data is where the company got the $5.8 billion it needed for these investments in non-current assets. Did it borrow the money or did it have it on hand? We can get an idea of where the money came from by looking one line above the capital expenditures. There we find the cash provided by operating activities, which is summarised as follows:

Kale Me Crazy's 2019 operating cash flows from the statement of cash flows

in millions	2019	2018	2017
Cash provided by operations	$5 917.2	$4 876.3	$4 341.5

CSL ANALYSIS

Look at CSL's cash flow statement in Appendix B. How much cash has the company spent to acquire PPE over the past two years? Compare CSL's net capital expenditures in the most recent year to its cash from operations.

Analysis:

According to the investing activities section of its cash flow statement, CSL spent just over $1184 million ($689 + $495) on PPE over the past two years plus $487 million on intangibles and business acquired.

Its net capital expenditure (investing activity) in the most recent year was $862.9 million while its cash generated from operations was $1246.6 million. Thus, CSL generated more than enough cash to pay for its growth in non-current assets without having to borrow the cash or dip into its reserves. But if you look further, of the almost $384 million of free cash flow, over $600 million was paid in dividends, and over $300 million in share buy-backs. Where did the extra come from? Net borrowings of about $800 million paid this shortfall and increased cash holdings. We look at cash flow statements in more detail in Chapter 12.

LO7 INTANGIBLE ASSETS

intangible asset A resource that is used in operations for more than one year but that has no physical substance.

patent The right to manufacture, sell or use a particular product or process exclusively for a limited period of time.

In addition to plant, property and equipment, companies often possess non-current assets known as **intangible assets**. An intangible asset is a resource that is used in operations for more than one year but has no physical substance. A **patent** is a good example. A patent is the right for the holder of the patent to manufacture, sell or use a particular product or process exclusively for a limited period of time. Although the right of exclusive use has no physical properties, it can be a very valuable resource to the holder. Consider the pharmaceutical industry. When a company develops a new drug, which will be more valuable – the equipment that manufactures the drug or the patent that provides for exclusive manufacturing and selling rights to the drug? Pharmaceutical companies will likely tell you that the patent is most valuable to them.

trademark (trade name) The right to use exclusively a name, symbol or phrase to identify a company.

copyright The right to reproduce or sell an artistic or published work or software computer code.

You are probably familiar with other intangible assets. For example, a **trademark** or **trade name** is the right for a company to use exclusively a name, symbol or phrase to identify the company. Often, you can tell if something is registered as a trademark if it has a small ™ or ® beside the name or symbol. The Nike swoosh™ is an example of a trademark, as is the script Coca-Cola™ or the apple with a bite out of the side. This book is protected by **copyright**, which means no other company, without permission from Cengage, can lawfully use the content of this book.

A third intangible with which you may be familiar is a **franchise**, which is the right, granted by the franchisor to a franchisee to operate a business under its trade name. Examples of franchises are all around you. For example, whenever you visit a McDonald's, you may be entering into a restaurant that is owned by an individual (the franchisee) who has purchased from McDonald's Corporation (the franchisor) the right to operate the restaurant.

franchise The right to operate a business under the trade name of the franchisor.

RECORDING INTANGIBLE ASSETS

Like all other assets, intangible assets are recorded at their acquisition costs. However, what is included as an acquisition cost can vary given the type of intangible asset and how it is acquired. Two accounting standards relate directly to the recognition, recording, expensing and disclosure of intangibles – AASB 138 (IAS 38) Intangible Assets and AASB 3 Business Combinations. AASB 136 Impairment of Assets is concerned with ensuring that assets, including intangibles, are not carried at more than their recoverable amount (able to be recovered through use or sale).

Externally acquired

The easiest case is when an intangible asset is acquired through an external transaction. For example, suppose that a company purchases a product patent from another company for $100 000. Because the patent is purchased in an arm's length transaction with another company, the cost of the patent is the purchase price. In general, if an intangible asset is acquired through an external transaction, its cost is the purchase price.

Alamy Stock Photo/creativep

The Apple logo is a well-known example of a trademark

A common example of an intangible that is created through an external transaction is goodwill. Goodwill is created when one company buys another company and pays more than the value of the net assets of the purchased company. **Goodwill** is equal to the excess of the purchase price over the value of the purchased net

goodwill An intangible asset equal to the excess that one company pays to acquire the net assets of another company.

identifiable assets. For example, suppose that Buyer Company purchases Seller Company for $8 million when the value of Seller Company's net identifiable assets is $6 million. In this transaction, Buyer Company pays $8 million and records $6 million of new assets and $2 million of goodwill. A condensed form of the entry Buyer Company would make to record this transaction would be as follows:

Net Assets of Seller Company		6 000 000		
Goodwill		2 000 000		
Cash				8 000 000
(To record depreciation expense)				
Assets	=	Liabilities	+	Equity
6 000 000				
+2 000 000				
–8 000 000				

The above entry records the decrease in cash resulting from the purchase and the increase in net assets acquired through the purchase. The difference of $2 million is debited to Goodwill, which increases that asset account. The result of the entry is an increase and decrease to assets.

To understand what goodwill represents, think about why a company would pay a premium for another company. The purchasing company might want to acquire the other company's customers, its reputation, its employees, its market share or its research. Whatever the reason, the purchasing company is paying for something intangible that the other company possesses. This intangible value is what goodwill represents. Note here that goodwill can be recorded by a company *only* when it purchases another company. Goodwill created internally by a company cannot be recorded as an asset because its cost cannot be reliably determined. Only through an independent purchase can the value of goodwill be objectively measured. CSL has over $1 billion of intangible assets (over 10 per cent of total assets) made up of almost $700 million of goodwill, $170 million of intangible capital works in progress and over $100 million of intellectual property. You can see CSL only recognises goodwill as 'any excess of the fair value of the purchase consideration of an acquired business over the fair value of the identifiable net assets … recorded as goodwill'.[7]

Internally generated

In the previous examples, intangible assets were purchased externally and therefore recorded at their purchase prices. When an intangible asset is developed internally, the accounting is more conservative. AASB 138 divides the internal generation of an intangible into two phases: the research and the development. Expenditure on research is recognised as an expense when incurred. In the development phase, six criteria must all be demonstrated before an asset can be recognised. These include:

- the technical feasibility of completion for use or sale
- how the intangible asset will generate probable future economic benefits
- the ability to measure reliably the expenditure attributable to the intangible asset during its development.

This may be easier for a biotechnology company that has procedures in place to assess and measure many developments than for a company developing a single idea for the first time. Surprisingly CSL has less than 5 per cent of total assets as non-goodwill intangibles.

While some disagree with this accounting treatment, it is another application of prudence. It is very difficult to know whether particular research and development costs will result in productive assets and how long those assets might last. Given this uncertainty, expensing research, and often many or all of the development costs, results in intangible assets not being overstated.

AMORTISING AND IMPAIRING INTANGIBLE ASSETS

amortisation The process of spreading out the cost of an intangible asset over its useful life.

Like non-current assets that are depreciated, intangible assets with *limited useful lives* are amortised. **Amortisation** is the process of spreading out the cost of an intangible asset over its useful life. Two examples of intangible assets with limited lives are patents and copyrights. Patents are granted for up to 20 years, and copyrights are granted for the life of the creator plus 70 years. Companies usually use the straight-line method for amortisation.

To illustrate, suppose that a company possesses a $60 000 patent that has the maximum legal life of 20 years. The company believes that the patent will be useful for only 12 years and will then be worthless. Amortisation expense at the end of each year would be $5000 ($60 000 ÷ 12) and would be recorded as follows:

End of year	Amortisation Expense		5 000	
	Accumulated Amortisation Patent			5 000
	(To record the amortisation expense)			
	Assets	=	Liabilities	+ Equity
	–5 000			–5 000

The result of this entry is an increase to expenses and a decrease to assets. Notice that the entry records amortisation expense based on the 12-year useful life, not the 20-year legal life. Amortisation should be based on the shorter of the legal life or useful life. We use an accumulated amortisation contra-account because AASB 138 paragraph 118 requires disclosure of accumulated amortisation.

Amortisation applies only to intangible assets with limited lives. Assets with indefinite lives such as trademarks and goodwill are instead examined regularly (at least annually) to check for *impairment*. This is similar to the impairment of non-current assets. In general, if the fair value of the intangible asset falls below carrying amount, then the asset is impaired. In such a case, the company records a loss on impairment and reduces the asset to its fair value. As you can imagine, determining whether an intangible asset is impaired can be very subjective. In Note 7, CSL states: 'The impairment assessment process requires management to make significant judgements. Determining whether goodwill has been impaired requires an estimation of the recoverable amount of the cash generating units using a discounted cash flow methodology …' (discounted cash flows are covered in Appendix A) '… [that] uses cash flow projections based on operating budgets and a three-year strategic business plan after which a terminal value … is applied.'[8] Finally, intangibles with limited lives are subject to the same rules as plant, property and equipment when accounting for revaluations.

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Acquisition cost

LO1

Li Pi Co. purchases equipment with a list price of $22 000. Regarding the purchase, Li:

- **i** received a 2 per cent discount off the list price
- **ii** paid shipping costs of $800
- **iii** paid $1750 to install the equipment, $1200 of which was for a unique stand for the equipment
- **iv** paid insurance: $2800 for equipment; $300 for delivery and $2500 for a two-year policy to cover operations disruption
- **v** paid $600 to have the manufacturer train employees on safety features.

REQUIRED

Determine the acquisition cost of the equipment. Comment on why the $600 of safety training was included or not included in the cost.

2 Acquisition cost

LO1

Emily incurred the following expenditures when purchasing land: $470 000 purchase price, $35 000 in stamp duty and $19 000 for clearing. She sold a building on the land for $8000.

REQUIRED

Determine the acquisition cost of the land.

3 Determine net carrying amount

LO2

Equipment is purchased for $100 800. It has an estimated useful life of 10 years and a residual (salvage) value of $800.

REQUIRED

Assuming straight-line depreciation, determine the net carrying amount of the asset after three years.

4 Depreciation methods

LO2

Xing Pty Ltd purchases a delivery van on 1 January for $50 000. The van has an estimated useful life of five years and an estimated residual value of $5000.

REQUIRED

For both the straight-line and reducing-balance methods of depreciation (at twice the straight-line rate), prepare a schedule of depreciation expense, accumulated depreciation and carrying amount over the life of the asset. Advise Xing of the advantages/disadvantages of the two depreciation methods.

5 Depreciation methods

LO2

Port Kembla Steel purchases a machine on 1 July for $60 000. The machine has an estimated useful life of seven years, during which time it is expected to produce 57 400 units. Residual value is estimated at $2600. The machine produces 15 500 and 16 200 units in its first and second financial years of operation, respectively.

REQUIRED

Calculate depreciation expense for the machine's first two years using the straight-line, reducing-balance (double straight-line rate) and units-of-activity methods of depreciation.

6 Change in useful life

LO3

A company purchases plant with an estimated useful life of 15 years and a residual value of $35 000. When the plant has seven years of life remaining, the company estimates the remaining useful life is only five years – all else remains the same. The asset's net carrying amount at the time of revision is $60 000.

REQUIRED

Using the straight-line method, calculate depreciation expense for the first year after the revision.

7 Change in estimates

LO2, 3

On 1 July 2019, Ab Activators purchases gymnasium equipment for $90 000 and estimates a useful life of eight years and a residual value of $6000. On 1 July 2020, Ab Activators revises the equipment's useful life from eight years to five years. It uses the straight-line method of depreciation.

REQUIRED

- **a** Calculate depreciation expense for 2019–20 and 2020–21 financial years.
- **b** Recalculate 2020–21 depreciation expense assuming that Ab Activators leaves the useful life at eight years but reduces the residual value to $0.

8 Expenditures after acquisition

LO3

Tiger Logistics acquired a new van for $75 000 in 2018. At the end of 2021, accumulated depreciation on the van was $25 000. On 1 January 2022, Tiger paid $2000 for routine service on the van and $8000 to overhaul the engine. The engine work is anticipated to extend the useful life of the van by five years.

REQUIRED

Calculate the net book value of Tiger's van immediately after the service and overhaul.

9 Capital/revenue expenditures

LO3

A business incurs the following expenditures related to currently owned non-current assets:

- **i** annual pressure washing of building, $10 000
- **ii** new front door lock $250
- **iii** new compressor for the air conditioner, $9000
- **iv** repair of water damage caused by leaking roof, $7000
- **v** new tyres on tractor, $4000
- **vi** replacement of standard windows with double glazed energy-efficient windows, $18 000
- **vii** addition of 100 square metres of office space, $44 000
- **viii** modifications to machinery to improve efficiency, $14 400.

REQUIRED

Identify each expenditure as a capital or revenue expenditure and explain why the accountant should classify the expenditure as an 'expense' or 'asset'.

10 Impairment entry

LO3

Fung Factories acquired equipment for $450 000. On 15 March 2020, Fung determines that the equipment is impaired by $65 000.

REQUIRED

Prepare the entry to record the impairment of the equipment.

11 Disposal

LO4

Ellis Industries sells a building that has an original cost of $300 000 and an accumulated depreciation balance of $200 000.

REQUIRED

Prepare the journal entry to record the sale assuming the sales price was (a) $100 000, (b) $95 000 and (c) $108 000.

12 Disposal

LO2, 4

On 1 January 2018, A&G Company pays $40 000 for equipment with a 10-year estimated life and a $5000 estimated residual value. On 1 January 2022, A&G sells the equipment for $18 500 (assume A&G use a calendar year as its accounting financial reporting period).

REQUIRED

Calculate the gain or loss on the sale assuming A&G uses the straight-line method of depreciation. Where should the gain or loss on the sale be presented on the income statement?

13 Evaluate non-current assets

LO5

In its 2020 annual report, Mike reported the following information (in thousands):

i beginning total assets $6821
ii ending total assets $7891
iii beginning PPE $2988 (at cost)
iv ending PPE $3132 (at cost)
v beginning accumulated depreciation $1293
vi revenues $12 253
vii depreciation expense of $252.

REQUIRED

a Calculate the non-current asset turnover ratio of Mike's business.
b Calculate the average useful life of Mike's non-current assets at the end of the 2020 financial year.
c Calculate the average age of Mike's non-current assets at the end of the 2020 financial year.

14 Evaluate non-current assets

LO5

The following data was taken from the annual financial statements of Skippy Company (all figures in millions):

	Revenues	Non-current asset carrying amount
2014	$ 4 889	$150
2015	5 897	201
2016	6 583	245
2017	8 563	395
2018	10 589	524
2019	13 584	687
2020	14 555	793

REQUIRED

Calculate the non-current asset turnover ratio for the years presented. What does the trend in the ratio tell you about the company's performance?

15 Intangible assets

LO7

Phoebe Pharmaceuticals incurred the following expenditures:

i Research costs of $600 000 were incurred to discover a cure for the common cold.
ii Phoebe paid $170 000 in development costs before it knew if it was technically feasible to make it as a product available for sale.
iii Phoebe paid about $120 000 on development but was not able to reliably measure the expenditure.
iv Phoebe incurred $180 000 exactly in costs once it knew it would be able to produce and sell the drug for billions.

REQUIRED

Determine the total cost of the patent and comment on the carrying amount the accountants would place on the patent compared to its potential market value.

PROBLEMS

16 Acquisition cost

LO1

Sarah purchases an MRI machine with a list price of $922 000. Regarding the purchase, Sarah:

i received a 5 per cent discount off the list price by paying before delivery
ii paid shipping costs of $8000
iii paid $175 000 to install the equipment, $120 000 of which was to reinforce the floor to withstand the weight of the MRI
iv paid $3000 to have the story of the installation of the MRI featured on the local news
v paid $2800 to insure the MRI
vi paid $230 for a wireless safety cut-off switch
vii paid $6000 to have the manufacturer train employees on the unique operating procedures.

REQUIRED

Determine the acquisition cost of the equipment (show calculations).

17 Depreciation methods

LO2, 4

Sunrise Development Industries purchased a depreciable asset for $150 000 on 1 July 2019. The asset has a five-year useful life and a $30 000 estimated residual value. The company will use the straight-line method of depreciation for book purposes. However, Sunrise will use the reducing-balance method for tax purposes. Assume a tax rate of 30 per cent.

REQUIRED

a Prepare depreciation schedules using the straight-line and reducing-balance methods (at 1.5 times the straight-line rate) of depreciation for the useful life of the asset.

b Calculate the tax savings for the financial year ended 30 June 2020 from the use of the accelerated depreciation method for tax purposes.

c Under the straight-line method of depreciation, what is the gain or loss if the equipment is sold (i) at the end of June 2022 for $90 000 or (ii) at the end June 2023 for $48 000?

d How is the gain or loss on the disposal of the equipment presented in the financial statements assuming no revaluations?

18 Various transactions

LO1, 2, 3, 4

On 1 January 2019, Ravioli Foods purchased a building for a cash price of $1 192 000 and accrued land tax of $114 950. The building is estimated to have a useful life of 10 years and $500 000 residual value. On the same day, Ravioli paid $25 450 in cash plus stamp duty of $2290 for a new delivery van that is estimated to have a useful life of five years and a residual value of $2200. Another $1100 was paid to paint the van company colours with the company logo. Over the next several years, the following events related to these non-current assets occurred.

1/7/2020	New information caused the estimated life of the van to be reduced to three years total instead of five years.
17/12/2020	Repaired air conditioning system in the building which broke down for one week, $5000.
1/7/2021	Renovated bottom floor of the building for $115 000, adding three years useful life to the building.
1/1/2022	Sold van for $5350.
1/7/2022	Sold building for $1 163 000.

REQUIRED

Prepare all entries for 2019 to 2022. Ravioli Foods' annual depreciation expense is calculated on 30 June each financial year.

19 Non-current asset transactions and reporting

LO1, 2, 4

A partial portion of the balance sheet at 31 December 2018, for San Limited is presented below:

Land		**$500 000**
Buildings	$630 000	
Less: Accumulated Depreciation	250 000	380 000
Equipment	$ 65 000	
Less: Accumulated Depreciation	22 000	43 000
Total Property and Equipment		$923 000

The following transactions occurred during 2019:

1 January	• Retired equipment with a net book value of $2000. The equipment was purchased for $8000. No value was received from the retirement.
1 January	• Sold a building with an original 30-year useful life and no estimated salvage value for $90 000 cash. The building was originally purchased on 31 December 2008 for $120 000 and depreciated using straight-line.
30 April	• Purchased land for $90 000.
1 July	• Purchased equipment for $30 000 by signing a long-term note payable.
31 December	• Depreciation is recorded. Depreciation expense for the year was $40 000 for buildings and $4500 for equipment.

REQUIRED

a Prepare journal entries to record all the above transactions.

b Prepare the property and equipment portion of San's balance sheet at 31 December 2019.

20 Evaluate non-current assets

LO5

The following information was available from the 2020 financial statements of Papa John's Pizza:

	2020	2019
Net property and equipment	$ 189 992	$ 198 957
Total assets	386 468	401 817
Depreciation expense	31 800	30 600
Cost of property and equipment	388 080	408 074
Accumulated depreciation	198 088	209 117
Total revenues	1 132 087	1 063 595

REQUIRED

Calculate and interpret:

a horizontal and vertical analyses of non-current assets and depreciation expense

b non-current asset turnover ratio

c average life and average age of non-current assets.

21 Amortisation of intangible assets

LO7

Ramon Productions purchased the copyright to a film script for $264 000 on 1 July. The copyright protects the owners' legal rights for the next 20 years, but producers at Ramon estimate it will only be able to use the copyright for the next 15 years. Ramon Productions uses the straight-line method of amortisation and has a 30 June year-end.

REQUIRED

Prepare the journal entry to record amortisation expense for the first year.

22 Research and analysis

LO1, 5, 6

Access the annual report of a company of your lecturer's choosing.

REQUIRED

a Examine the company's balance sheet (statement of financial position) and conduct horizontal and vertical analyses of net PPE.

b Calculate the company's non-current asset turnover ratio. Also, calculate the company's average age and useful life ratios at the end of the current financial year. Cost and accumulated depreciation data, and depreciation and amortisation expense should be found in one or more of the Notes to the financial statements.

c Examine the company's statement of cash flows. How much cash did the company spend on PPE over the two years presented?

d What intangible assets does the company have and are they amortised and/or impaired?

e Based on your answers above, write a paragraph explaining your opinion of this company's non-current asset position. Use your answers as supporting facts.

23 Written communication

LO2

Play Hard Fitness Centre is a chain of gymnasiums. Play's financial analysts have forecasted sales to remain at a constant level for the next three years, but income taxes are forecasted to grow by 5 per cent a year for the next five years. Play Hard is about to refurnish 50 per cent of its centres with new equipment that will have an estimated useful life of five years. As a consulting accountant, you know that companies can use one method of depreciation for tax purposes and another for book purposes. The two methods under consideration are the reducing-balance method and straight-line method of depreciation.

REQUIRED

Write a short memo recommending the method you would use for tax purposes and the method you would use for book purposes. Be sure to discuss the advantages and disadvantages of both methods as well as the associated effects on income, depreciation over time, cash flows, etc.

24 SMS Communication

LO7

In 144 characters or less explain what impairment is when related to an intangible asset of indefinite life.

25 Ethics in accounting

LO1, 3

A friend of yours claims that he likes accounting because there is always a right and wrong answer to a question and therefore there is no temptation for wrongdoing.

REQUIRED

Using capital and revenue expenditures as an example, explain how judgement can be involved in accounting decisions and how an individual's ethics can affect the manner in which he or she accounts for a particular item.

9

Liabilities

The creation and payment of liabilities is common to most businesses. Some are generated daily and paid quickly. Others are paid over time and often require the payment of interest. Still others must be estimated and some may never be paid. This chapter focuses first on how some common current liabilities are generated and reported. It then examines non-current liabilities with a specific focus on the issue of bonds (sometimes known as debentures), the interest and eventual payment. We also discuss the obligations associated with leases and consider the treatment of potential obligations that may or may not become liabilities. As in previous chapters, the final section of the chapter focuses on the analysis of a company's position regarding its obligations. The appendix covers bond pricing and the effective interest method for bond amortisation.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the recording and reporting of current liabilities.
2. Describe the reporting of non-current liabilities and the cash flows associated with those liabilities.
3. Understand the nature of bonds (debentures) and record a bond's issue, interest payments and maturity.
4. Account for a bond that is redeemed prior to maturity.
5. Recognise other liabilities such as leases and contingent liabilities.
6. Evaluate liabilities through the calculation and interpretation of horizontal, vertical and ratio analyses.
7. Appendix: determine a bond's issue price.
8. Appendix: record bond interest payments under the effective interest method.

CourseMateExpress

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LO1 CURRENT LIABILITIES

A current liability is an obligation of a business that is expected to be paid (or satisfied) within one year (or the accounting cycle). Current liabilities can arise from regular business operations such as the purchase of inventory, the work of employees, and the incurring of taxes. Most current liabilities, such as accounts payable (and notes payable), liabilities to employees and utility (e.g. electricity, internet) providers will be satisfied through the payment of cash. Others, such as deferred revenues, in which a customer prepays for a service to be performed later, will be satisfied through the performance of the service. The following sections present the accounting for some of the more common types of current liabilities.

Check out the video summaries for Chapter 9 APPLY THIS

Getty Images/Lester Lefkowitz

A deposit in a bank is an asset to the customer, but it is a liability to the bank

TAXES PAYABLE

When conducting business, companies generate a variety of tax obligations to the Commonwealth and State governments. One example is income tax. Like individuals, companies are subject to federal taxation of their taxable income. Like individuals, they are often given time to pay the bill, which creates a current liability. For example, suppose a company has $205 000 of annual income tax expense and is not required to pay it until the next period. The company would make the following journal entry at year-end to record the expense in the proper period:

Year-end	Income Tax Expense			205 000	
	Income Tax Payable				205 000
	(To record the income tax expense)				
	Assets	=	Liabilities	+	Equity
			+205 000		–205 000

The entry increases both Income Tax Expense and Income Tax Payable. The result of the entry is a reduction to equity (an expense) and an increase to liabilities.

Another type of tax payable is the Goods and Services Tax (GST). A business does not pay GST; it collects GST from its customers and passes it on to the Australian Taxation Office (ATO). If a business provided a service or sold goods that were subject to GST it would add 10 per cent to the total price it charged the customer. Imagine the drone filming business from Chapter 1, Aerial Filming, has expanded, so you are now registered for GST. If you carried out a large job for a customer and you wanted to receive $1000 for the work you did, you would charge the customer $1100 ($1000 for you and $100 for the ATO). The following entry records the customer being billed or paying you:

Accounts Receivable or Cash				1 100	
Service Revenue					1 000
GST Payable					100
(To record service provided plus GST)					
Assets	=	Liabilities	+	Equity	
+1 100		+100		+1 100	

The advantage for a business of being registered for GST is being able to claim back the GST paid on those goods and services for which they have been charged GST. In the above example the business that purchased the service from you would pay you $1100 but $100 of that would be 'GST Receivable', an asset for them. Although they pay you $1100, they will claim back the $100 of GST from the ATO and so the resulting cost for your customer is only $1000. Individuals and businesses not registered for GST cannot claim back the GST they pay, so the government does not miss out completely (e.g. when you buy clothes, takeaway food etc.).

CURRENT LIABILITIES WITH PAYROLL

When discussing payroll there are two terms often used: **gross pay**, the total amount of salary or wages, and **net pay** or 'take home pay' – the gross pay minus deductions. Deductions come in two forms, **required deductions**, such as employee income tax in which the employee (the worker) does not have a choice, and **optional deductions** or voluntary deductions where the employee may ask their employer (the boss) to pay extra superannuation, insurance, etc. on their behalf. When paying employee wages, employers must withhold income taxes owed by the employee. The employer then remits (sends) the withheld tax to the ATO. To illustrate, suppose that an employee earns a monthly salary of $10 000. Based on the employee's tax situation, the employer must withhold 27 per cent of the salary for income tax. Also suppose the employee has asked for $765 to be paid into their superannuation fund (this is known as a voluntary deduction and is a contribution out of salary and on top of the compulsory superannuation of 9.5 per cent for employees earning more than $450 a month). On payday, the company would prepare the following entry:

gross pay
The total pay before any deduction; in the simplest form it is hours worked times the agreed hourly rate.

net pay
Gross pay less deductions such as tax.

required deductions
The amount(s) the employer is legally obliged to take out, such as tax, before depositing the net pay in the employee's bank account.

optional deductions
The amounts the employee asks the employer to take out, such as extra superannuation, before depositing the net pay in the employee's bank account.

Salaries Expense				10 000	
Income Tax Payable					2 700
Superannuation Payable					765
Cash					6 535
(To record payment of salary)					
Assets	=	Liabilities	+	Equity	
–6 535		+2 700		–10 000	
		+765			

The entry increases Salaries Expense for the $10 000 salary earned by the employee for the month. However, the employee is paid only $6535 (this is the amount deposited in the employee's bank account — their 'take-home pay'). The difference is the amount that the employee owes in taxes and superannuation the employee contributed. On behalf of the employee, the employer withholds the tax and superannuation and records the resulting liabilities. As a result of this entry, assets decrease, liabilities increase, and equity decreases for the amount of the total salaries expense.

In addition to withholding taxes on behalf of employees, employers may also pay other taxes such as state payroll tax. Each state has different rates and thresholds. Small businesses with only a few employees generally do not have to pay payroll tax, but as a business expands they will

reach the threshold. Payroll tax may be seen as a disincentive to employ more people. Let's imagine the threshold is $1 million, and once total employee benefits rise above that level a 7 per cent payroll tax is paid on all employee benefits. This is an additional tax; it is not deducted from employees' wages like income tax shown above. If your business had gross employee benefits of say $3.5 million, in the year you would incur $245 000 of additional employment expenses. The following entry records the expense and the resulting liability:

Payroll Tax Expense			245 000	
Payroll Tax Payable				245 000
(To record payroll tax)				
Assets	=	Liabilities	+	Equity
		+245 000		–245 000

These are called labour 'on costs' and would include workers' compensation insurance and compulsory superannuation (although superannuation paid by the employee may be included in the 'package' an employee is offered).

NOTES PAYABLE

Chapter 6 introduced the concept of a promissory note, which is a written promise to pay a specific sum of money at some date in the future. That chapter focused on the party that accepted the note in exchange for cash. That is, the accounting for notes receivable was demonstrated. This chapter focuses on the party that accepts cash in exchange for the note. That is, the accounting for notes payable is now demonstrated.

When a company issues a promissory note to borrow money (or delay payment for goods or services – effectively the same thing), the company generates a **note payable**. If the note is payable within a year, it is a current liability. Otherwise, it is a non-current liability. The accounting for a note payable consists of recording the note, recording any interest that must be paid to the creditor and recording the payment of the note.

note payable
A liability generated by the issue of a promissory note to borrow money.

To illustrate, suppose that on 1 March Bugeja Company borrows $100 000 by signing an 8 per cent, six-month note with Murray River Bank. The note calls for interest to be paid when the note is repaid on 31 August. On 1 March, Bugeja would make the following entry to record the note:

1 Mar.	Cash		100 000	
	Note Payable			100 000
	(To record the note)			
	Assets	=	Liabilities	+ Equity
	+100 000		+100 000	

In this entry, Bugeja increases both Cash and Note Payable by $100 000. As a result, both assets and liabilities increase. Since this note matures within a year, the note payable would be reported as a current liability.

On 31 August, Bugeja must pay Murray River Bank the original $100 000 borrowed plus the interest on the note. Interest over the six months is calculated as follows:

Interest = Principal × Annual Rate of Interest × Time Outstanding
= $100 000 × 0.08 × 6/12 months
= $4000

Therefore, Bugeja would pay $104 000 to the bank and make the following entry on 31 August:

31 Aug.	Note Payable		100 000	
	Interest Expense		4 000	
	Cash			104 000
	(To record payment of note and interest)			
	Assets	=	Liabilities	+ Equity
	–104 000		–100 000	–4 000

In this entry, Bugeja increases Interest Expense to reflect the cost of borrowing the $100 000 over the six months. Bugeja also decreases the Note Payable account because the note is being paid. Finally, Bugeja decreases Cash for the payment of principal and interest. Because of the entry, Bugeja's assets, liabilities and equity decrease.

If Bugeja's financial year ended on 30 June, an adjusting entry would be needed to recognise the expense for four months and the liability at the end of the four-month period – Interest expense of $2667 and Interest payable of $2667 ($100 000 × 0.08 × 4/12).

CURRENT PORTION OF NON-CURRENT DEBT

A company that borrows long term may only pay interest during the term of the loan and repay the principal (the amount borrowed) at the end of the loan. To illustrate, suppose a company borrows $500 000 through a 10-year promissory note. Because the note is payable in 10 years, the company classifies the note as a non-current liability. In year 10, the note is reclassified as a current liability because it will all be repaid in year 10). The **current portion of non-current debt** represents the portion of a non-current liability that will be paid within one year.

current portion of non-current debt
The portion of a non-current liability that will be paid within one year.

Many long-term borrowings require a set amount to be repaid each month. At the beginning of the loan the majority of the payment is interest and a smaller amount of principal is repaid. (On a thirty year $500 000, 5% mortgage the monthly payment would be approximately $2684. For the first payment $2084 is interest and $600 repayment of principal.) In the first year about $7500 of the principal will be repaid;

therefore, at the beginning of the year $492 500 of the mortgage will be reported as a non-current liability, $7500 current. At the beginning of the last year of the loan all the outstanding principal of $31 350 will be reported as a current liability. In the last year only $858 of the repayments is interest. (These numbers are not important, they can be verified using online calculators.) As you consider these two examples, keep in mind that regardless of how the liability is classified on the balance sheet, the company is borrowing and repaying $500 000. The classification of the note payable as current or non-current does not affect the borrowing or repayment of the note. It only affects how the payable is reported (disclosed and classified) on the balance sheet. However, this balance sheet reporting is important because it tells users of the financial statements what obligations will require payment in the short term. During the Global Financial Crisis a number of companies, including ABC Learning and Centro Properties, incorrectly reported current liabilities as non-current and in doing so misled users of their financial statements. These companies' short-term borrowings had previously been renewed (rolled over) every three or so months for several years by their lenders. When it became difficult to borrow money, the lenders asked for their money back and the companies were faced with having to find hundreds of millions of dollars within a few months. The misclassification of liabilities as non-current rather than current, misled the users of the financial statements.

REPORTING CURRENT LIABILITIES

Current liabilities are reported in a separate section on a balance sheet. The following is the current liabilities section of the balance sheet (as at 30 June 2017) of the Chartered Accountants Australia and New Zealand (CAANZ):[1]

CAANZ 2017 and 2016 Current Liabilities (in thousands)

	Notes	2017	2016
Fees in advance	10	$56 553	$54 241
Trade and other payables	11	9 254	13 291
Provisions	12	5 254	4 592
Total		$71 061	$72 124

CAANZ reports over $70 million in current liabilities in 2017 (down a little on 2016). This total is made up mostly of fees received in advance, primarily members who have paid their annual membership fees for the next financial year in the previous financial year. It also includes payments received in advance for professional development courses and students undertaking the CA Program who have paid on or before 30 June for courses to be conducted on or after 1 July (so they can claim a tax deduction when paid – if you were wondering why they would pay in advance). Notes 10 to 12 of the financial statements provide more detail.

LO2 NON-CURRENT LIABILITIES

A non-current liability is any obligation of a business that is expected to be satisfied or paid in more than one year or beyond one accounting cycle. Like current liabilities, the type and size of non-current liabilities can vary across companies. However, the most common and largest non-current liabilities often arise from borrowing money. While the CAANZ had over $70 million in current liabilities, they have just over $2 million in non-current liabilities. This is not surprising given they use members' fees to provide services to members (including attracting students like you into the profession). Most businesses use shareholders' and borrowed money to provide goods and services to clients/customers in order to earn a profit for their shareholders.

While the balance sheet reports the balance in non-current liabilities, the cash flow statement reports the cash flows associated with those liabilities in the financing activities section.

Review this content with the e-lecture

LO3 BONDS

A financial instrument that companies use to borrow money on a long-term basis is a debenture or bond. The term debenture is becoming less common in Australia, so we use the term 'bond', which is generally used in global financial markets. The advantage of bonds is they provide the flexibility of borrowing from a range of lenders and often at the most competitive interest rates. The disadvantage when compared with borrowing from a bank is the administrative work in issuing bonds and paying interest to many lenders.

CSL ANALYSIS

Look at CSL's balance sheet and cash flow statement in Appendix B. Using both statements, explain what happened to short-term debt during 2017.

Analysis:

CSL increased its current liabilities by over 17 per cent in 2017. The balance sheet shows the balance of Total Current Liabilities going from $1374.4 million in 2016 to $1618.1 million in 2017, providing almost $244 million in cash to the business. The cash flow statement does not appear to reflect this because borrowings (cash flows from financing activities) used $103.5 million in cash outflows. But this reflects the increase in non-current rather than current liabilities. The increase in current liabilities is to be found in the reconciliation of cash flows from operations to profits (Note 14) where it is mainly explained by the increase in trade and other payables by $153.9 million

bond
A financial instrument in which a borrower promises to pay future interest and principal to a creditor in exchange for the creditor's cash today.

A **bond** is a financial instrument in which a borrower promises to pay future interest and principal to a creditor in exchange for the creditor's cash today. The borrower 'sells' or 'issues' the bond and records a liability. The creditor 'buys' the bond and records an investment.

The terms and features of a bond are determined by the borrower (the issuer of the bond) and can vary widely, but they need to be competitive or no one will buy the bond (lend the borrower money). However, all bonds have a face value, a stated interest rate and a maturity date.

face value
The amount that is repaid at maturity of a bond.

stated interest rate
The contractual rate at which interest is paid to the creditor.

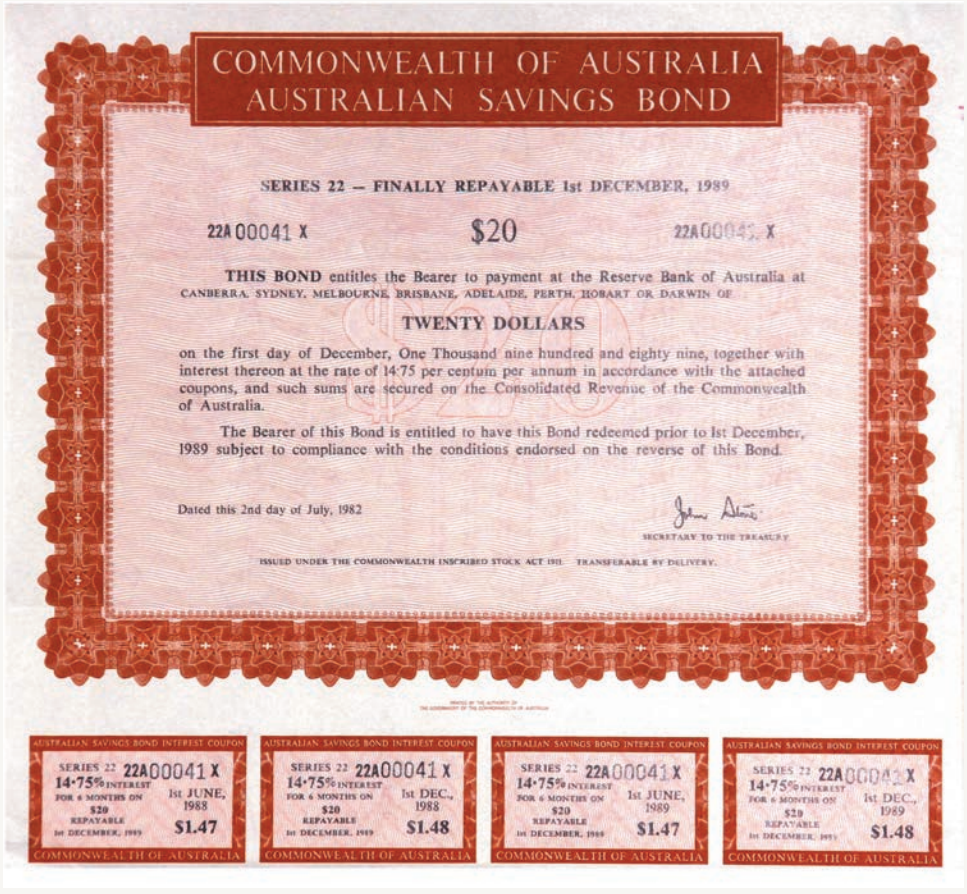
The **face value** is the amount that the borrower company wants to borrow, but more accurately the amount that must be repaid to the creditor (lender) upon maturity of the bond. Another name for face value is principal value. The **stated interest rate** is the contractual rate at which interest is paid to the creditor. Other names for the stated rate include face rate, nominal rate, contractual rate or coupon rate. Along with this stated rate, a bond will specify the timing of interest payments. These will usually be annually or semi-annually. The **maturity date** is the date on which the face value must be repaid to the creditor. These three terms, which do not change over the life of the bond, are disclosed on the certificate that is given to the creditor or the creditor's trustee when the bond is purchased.

maturity date
The date on which the face value must be repaid to the creditor.

An example certificate is shown in Exhibit 9.1. This bond was issued by the Commonwealth Government through the Reserve Bank of Australia and had interest coupons attached. It was a 'bearer bond' entitling the person who had physical possession of the certificate to claim the interest and redeem the bond on maturity (or at any stage if all future interest coupons were attached). Note this was from a different era when interest rates were considerably higher.

While these terms establish both the amount to be paid at maturity (the face value) and the amount of interest to be paid each period (the stated interest rate), they do not establish the issue price for which the bonds are issued. A bond's issue price is a function of these terms as well as a fourth item, the market rate of interest given the borrower's risk.

Tyler/Image


COMMONWEALTH OF AUSTRALIA
AUSTRALIAN SAVINGS BOND

SERIES 22 — FINALLY REPAYABLE 1st DECEMBER, 1989

22A 00041 X $20 22A00041 X

THIS BOND entitles the Bearer to payment at the Reserve Bank of Australia at CANBERRA, SYDNEY, MELBOURNE, BRISBANE, ADELAIDE, PERTH, HOBART OR DARWIN OF

TWENTY DOLLARS

on the first day of December, One Thousand nine hundred and eighty nine, together with interest thereon at the rate of 14·75 per centum per annum in accordance with the attached coupons, and such sums are secured on the Consolidated Revenue of the Commonwealth of Australia.

The Bearer of this Bond is entitled to have this Bond redeemed prior to 1st December, 1989 subject to compliance with the conditions endorsed on the reverse of this Bond.

Dated this 2nd day of July, 1982

SECRETARY TO THE TREASURY

ISSUED UNDER THE COMMONWEALTH INSCRIBED STOCK ACT 1911. TRANSFERABLE BY DELIVERY.

AUSTRALIAN SAVINGS BOND INTEREST COUPON — SERIES 22 22A00041 X — 14·75% INTEREST FOR 6 MONTHS ON $20 REPAYABLE 1st DECEMBER, 1989 — 1st JUNE, 1988 — $1.47 — COMMONWEALTH OF AUSTRALIA

AUSTRALIAN SAVINGS BOND INTEREST COUPON — SERIES 22 22A00041 X — 14·75% INTEREST FOR 6 MONTHS ON $20 REPAYABLE 1st DECEMBER, 1989 — 1st DEC., 1988 — $1.48 — COMMONWEALTH OF AUSTRALIA

AUSTRALIAN SAVINGS BOND INTEREST COUPON — SERIES 22 22A00041 X — 14·75% INTEREST FOR 6 MONTHS ON $20 REPAYABLE 1st DECEMBER, 1989 — 1st JUNE, 1989 — $1.47 — COMMONWEALTH OF AUSTRALIA

AUSTRALIAN SAVINGS BOND INTEREST COUPON — SERIES 22 22A00041 X — 14·75% INTEREST FOR 6 MONTHS ON $20 REPAYABLE 1st DECEMBER, 1989 — 1st DEC., 1989 — $1.48 — COMMONWEALTH OF AUSTRALIA

EXHIBIT 9.1 Example of a bond certificate

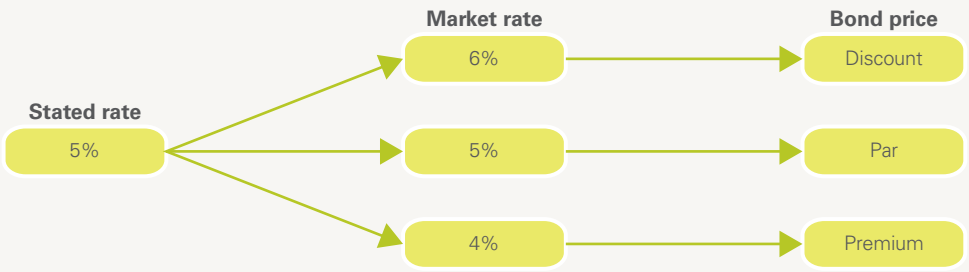


EXHIBIT 9.2 Premium or discount

market (or effective) rate of interest
The rate of return that investors in the bond markets demand for bonds of similar risk.

The **market (or effective) rate of interest** is the rate of return that investors in the bond markets demand on bonds of similar risk. The market rate is based on many complicated factors, including current and expected economic conditions. However, its relation to a bond's issue price is relatively straightforward. See an example of these concepts in Exhibit 9.2.

When a bond pays interest at a rate that is equal to what creditors require in the market, the creditors will buy the bond at its face value. Creditors are getting the return that they require, so no adjustment to price is needed. As a result, the borrower receives face value. We say that such bonds are issued at par or face value.

When a bond pays interest at a rate that is lower than what creditors demand, the creditors will purchase the bond only if the price is discounted. By discounting the price, the borrower is effectively increasing the rate of interest that the creditor earns. In fact, the bond will sell only when the price is reduced enough so that the effective interest rate that the creditor earns equals the market rate of interest. Bonds that are issued for less than face value are issued at a *discount*.

When a bond pays interest at a rate that is higher than what creditors expect, the borrower will sell the bond only if the price is raised. By raising the price, the borrower effectively lowers the rate of interest that the creditor earns. In fact, the bond will be able to be sold at a higher price so the effective interest rate that the creditor earns equals the market rate of interest. Bonds that are issued for more than face value are issued at a *premium*.

Actual issue prices are calculated using present value calculations. The chapter appendix illustrates these calculations. Here, you should simply understand that bonds sell for whatever price is necessary to make the effective rate of interest equal to the market rate of interest. The following sections demonstrate how to account for a bond's issue, the periodic interest payments and the maturity of bonds under each scenario.


Alamy Stock Photo/Everett Collection Inc
Another kind of bond

BONDS ISSUED AT FACE VALUE

To illustrate a bond issued at face value, suppose that on 1 July 2019, Ma Manufacturing sells bonds with a face value of $100 000. The bonds carry a 6 per cent interest rate and a 1 July 2029 maturity date. Interest is to be paid semi-annually on 1 July and 1 January. Because the market rate of interest is also 6 per cent, the bonds sell at face value.

Recording the issue

In this example, Ma would record the bond issue with a simple and straightforward entry to increase Cash and Bonds Payable:

1 Jul. 2019	Cash			100 000	
	Bonds Payable				100 000
	(To record bonds issued at face value)				
	Assets	=	Liabilities	+	Equity
	+100 000		+100 000		

Note that this entry is practically the same as the entry recording the note payable earlier in the chapter. This should make sense since a bond is really just a more formalised note payable.

Recording interest payments

Once the bond is issued, Ma must pay interest on 1 July and 1 January of each year. For any bond, the amount of

interest paid each period is a product of the face value, the stated interest rate and the length of the payment period. In this example, interest is paid every six months, or semi-annually, so the amount paid is $3000, calculated as follows:

Interest Paid = Face Value × Stated Interest Rate × Time Outstanding
= $100 000 × 0.06 × 6/12 months
= $3000

Therefore, on 1 January, Ma would record its interest payment with the following entry:

1 Jan. 2020	Interest Expense			3 000	
	Cash				3 000
	(To record payment of interest)				
	Assets	=	Liabilities	+	Equity
	–3 000				–3 000

Ma increases Interest Expense to reflect the cost of borrowing over the six months and decreases Cash to reflect the payment made to the bondholders. The overall effect of the transaction is a decrease to Ma's assets and equity.

The next $3000 interest payment is scheduled for 1 July 2020. However, assuming that Ma has a 30 June year-end, two entries are required. The first is a 30 June adjusting journal entry that accrues the interest expense and records the related payable so that the expense is properly recorded in the period in which the money was used. The second entry records Ma's payment on 1 July 2020. These two entries are shown as follows:

30 Jun. 2020	Interest Expense			3 000	
	Interest Payable				3 000
	(To record accrual of interest)				
	Assets	=	Liabilities	+	Equity
			+3 000		–3 000

1 Jul. 2020	Interest Payable			3 000	
	Cash				3 000
	(To record payment of interest)				
	Assets	=	Liabilities	+	Equity
	–3 000		–3 000		

Note the overall effect of the two entries is to decrease assets and equity by the amount of the interest paid. This is the same overall effect as the 1 January interest entry.

Interest is paid and recorded in the same manner every 30 June/1 July and 31 December for 10 years until the 1 July 2029, maturity date. Over time, Ma will make 20 payments of $3000 for a total of $60 000 of interest paid. Thus, the total cost of borrowing the $100 000 over the 10 years is $60 000.

Recording the maturity

On the 1 July 2029 maturity date, Ma would record the repayment of the bonds in addition to the last interest payment.

1 Jul. 2029	Bonds Payable			100 000	
	Cash				100 000
	(To record repayment of the bonds)				
	Assets	=	Liabilities	+	Equity
	–100 000		–100 000		

Check out the animated summary on Bonds Issued at Face Value

APPLY THIS

BONDS ISSUED AT A DISCOUNT

To illustrate a bond issued at a discount, suppose that on 1 July 2020, Nguyen Company issues bonds with a face value of $200 000, a stated interest rate of 7 per cent and a maturity date of 30 June 2025. Interest is payable annually on 30 June. At the time of issue, the risk-adjusted market rate of interest for Nguyen is higher than the stated rate of 7 per cent, and the bonds sell at a price of $196 000, or a $4000 discount. At such a price, the bonds are said to have sold at 98, meaning that they were issued at 98 per cent of face value ($200 000 × 98% = $196 000).

Recording the issue

Nguyen would record the issue as follows:

1 Jul. 2020	Cash			196 000	
	Discount on Bonds Payable			4 000	
	Bonds Payable				200 000
	(To record bonds issued at a discount)				
	Assets	=	Liabilities	+	Equity
	+196 000		+200 000		
			–4 000		

In this entry, Nguyen increases Cash for the $196 000 received from the investors. Nguyen also increases Bonds Payable to reflect the new obligation that it has. Notice that Bonds Payable is recorded at the bond's face value of $200 000. The Bonds Payable account is *always* recorded at the amount that will ultimately be repaid, which is face value. The difference of $4000 is recorded in an account called Discount on Bonds Payable, which is a contra-liability account. Its balance is subtracted from the Bonds Payable account to yield the net carrying amount (book value) of the bonds. As a result, both assets and liabilities increase by only $196 000.

After issue, the bonds would be reported on the balance sheet as follows:

	1 July 2020
Bonds payable	$200 000
Less: Discount on bonds payable	4 000
Carrying amount	$196 000

Notice that the carrying amount of $196 000 at the time of issue is equal to the cash received at issue. This will always be the case at issue, regardless of the price of the bond.

Recording interest payments

Nguyen's bonds call for annual interest payments over the life of the bonds. Each payment is calculated as follows:

KEY FORMULA 9.1 INTEREST PAYABLE ON BONDS PAYABLE

Interest Paid = Face Value × Stated Interest Rate × Time Outstanding
= $200 000 × 0.07 × 12/12 months
= $14 000

Note that this $14 000 interest payment is calculated the same way as the bond issued at face value. Whether a bond is issued at face value, at a discount or at a premium, interest paid on a bond is always:

Face Value × Stated Interest Rate × Time Outstanding

However, unlike the face value scenario, interest expense will be greater than interest paid. Recall that Nguyen received only $196 000 at issue but must repay $200 000 at maturity. That $4000 discount is therefore an additional cost to Nguyen that must be amortised over the life of the bond. To amortise the discount is to gradually reduce the discount balance and add the amount amortised to interest expense. Therefore, at each interest payment date, interest expense will be greater than interest paid.

There are two methods to amortise the discount on bonds payable: the straight-line method and the effective interest method. Because the straight-line method is easier to calculate and is often not substantially different from the results from the effective interest method, the straight-line method is demonstrated here. However, the effective interest method is also demonstrated in the chapter appendix.

straight-line method of amortisation
Method that amortises an equal amount of the discount or premium each time interest is paid.

Under the **straight-line method of amortisation**, an equal amount of the discount is amortised each time interest is paid. The amount amortised is calculated as follows:

KEY FORMULA 9.2 STRAIGHT-LINE METHOD OF AMORTISATION

$$\text{Discount Amortised} = \frac{\text{Discount at Issuance}}{\text{Number of Interest Payments}}$$

With a $4000 discount and five annual interest payments, Nguyen must amortise $800 ($4000/5) each payment. As a result, Nguyen's interest expense for each period is $14 800. With this information, Nguyen can make the following entry to record the first annual interest payment on 30 June 2021.

30 June 2021	Interest Expense	14 800	
	Discount on Bonds Payable		800
	Cash		14 000
	(To record the payment of interest)		

Assets	=	Liabilities	+	Equity
–14 000		+800		–14 800

The entry affects three accounts. First, Cash is decreased for the amount paid to the creditor. Second, the Discount on Bonds Payable account is decreased (or 'amortised') by $800, resulting in a remaining balance of $3200. Third, Interest Expense is increased by $14 800 to record the expense associated with the interest paid and the discount amortised. It may be counterintuitive that liabilities would *increase* as a result of the preceding interest entry. However, remember that the contra-liability Discount on Bonds Payable, which was first created for $4000, is now only $3200. Therefore, the carrying amount of the bonds has increased by $800 because of the interest payment entry. This is illustrated as follows:

	Issue	30 June 2021
Bonds payable	$200 000	$200 000
Less: Discount on bonds payable	4 000	3 200
Carrying amount	$196 000	$196 800

The carrying amount will continue to increase by $800 with each interest payment date as the discount is amortised. After five interest payments, the discount will be fully amortised (that is, it will have a zero balance) and the carrying amount of the bonds will equal the face value of $200 000.

This movement of the carrying amount from issue price to face value is best illustrated in the schedule found in Exhibit 9.3. It is called an **amortisation schedule** because it provides the details of the discount amortisation and the resulting expense amounts and carrying amount.

amortisation schedule
A schedule that illustrates the amortisation of a bond discount or premium over the life of a bond.

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
1	$14 000	$ 800	$14 800	$4 000	$196 000
2	14 000	800	14 800	3 200	196 800
3	14 000	800	14 800	2 400	197 600
4	14 000	800	14 800	1 600	198 400
5	14 000	800	14 800	800	199 200
	$70 000	$4 000	$74 000	0	200 000

EXHIBIT 9.3 Amortisation schedule – bonds issued at a discount

As you review the amortisation schedule, note that it provides the dollar amounts for each annual interest entry. The first three columns provide the amounts of cash to be paid, discount to be amortised and interest expense to be recognised each year. Because the straight-line method of amortisation is used, the amounts are the same each year. Thus, Nguyen would make the same interest entry every year until the bonds mature.

Note also that the schedule confirms that the total cost of borrowing is a combination of the interest paid and the original discount. Total interest expense over the life of the bonds is $74 000, which is the sum of interest paid ($70 000) and the original discount ($4000). When bonds are issued at a discount, total interest expense will always exceed interest paid by the amount of the discount. An alternative calculation of the total cost of borrowing is as follows:

Interest payments ($200 000 × 7%)	$ 14 000
× Number of payments	× 5
= Total interest paid	$70 000
+ Discount	4 000
Total cost of borrowing	$74 000

Recording the maturity

In addition to the interest payment (and amortisation of discount), Nguyen must repay $200 000 on 30 June 2025 to satisfy its obligation. The entry to repay the bonds requires a decrease to both Cash and the Bonds Payable account.

30 Jun. 2025	Bonds Payable			200 000	
	Cash				200 000
	(To record repayment of the bonds)				
	Assets	=	Liabilities	+	Equity
	–200 000		–200 000		

APPLY THIS **Check out the animated summary on Bonds Issued at a Discount**

BONDS ISSUED AT A PREMIUM

To illustrate the accounting for a bond issued at a premium, suppose that on 1 January 2019, Amber Arbitrators issues bonds with a face value of $50 000, a stated interest rate of 8 per cent and a maturity date of 31 December 2021. Interest is payable annually on 31 December. At the time of issue, the market rate of interest is lower than the stated rate of 8 per cent, and the bonds sell at a price of $50 600, or a $600 premium. At such a price, the bonds are said to have sold at 101.2, meaning that they were issued at 101.2 per cent of face value ($50 000 × 101.2% = $50 600).

Recording the issue

Amber would record the issue as follows:

1 Jan. 2019	Cash			50 600	
	Premium on Bonds Payable				600
	Bonds Payable				50 000
	(To record bonds issued at a premium)				
	Assets	=	Liabilities	+	Equity
	+50 600		+50 000		
			+600		

In this entry, Amber increases Cash for the $50 600 received from creditors. Amber also increases Bonds Payable for the face value of $50 000. The $600 received in excess of the face value is recorded in an account called Premium on Bonds Payable. The balance in Premium on Bonds Payable is added to the Bonds Payable account to yield the bond's carrying amount. The calculation of Amber's carrying amount after issue is shown as follows:

	1 Jan. 2019
Bonds payable	$50 000
Plus: Premium on bonds payable	600
Carrying amount	$50 600

As a result of this entry, Amber's assets and liabilities increase by $50 600.

Recording interest payments

Amber's bonds call for annual interest payments over the life of the bonds. Each payment is calculated as follows:

Interest paid = face value × stated interest rate × time outstanding
= $50 000 × 0.08 × 12/12 months
= $4000

As in the discount example, Amber's interest payment will differ from its interest expense. Amber received $50 600 at issue but must repay only $50 000 at maturity. The $600 premium is a reduction in Amber's cost. Like the discount example, the premium should be amortised over the life of the bond. As a result, at each interest payment date, interest expense will be less than interest paid.

The following is the amortisation calculation using the straight-line method.

KEY FORMULA 9.3 BOND DISCOUNT OR PREMIUM AMORTISED EACH PAYMENT (STRAIGHT-LINE METHOD)

$$\text{Premium amortised} = \frac{\text{Premium at Issuance}}{\text{Number of Interest Payments}}$$

With a $600 premium and three annual interest payments, Amber must amortise $200 ($600/3) each payment. Therefore, interest expense for the year is $3800 ($4000 interest paid – $200 premium amortised). This leads to the following entry to record the first (and subsequent two) interest payment on 31 December.

31 Dec.	Interest Expense	3 800	
	Premium on Bonds Payable	200	
	Cash		4 000
	(To record the payment of interest)		

Assets	=	Liabilities	+	Equity
–4 000		–200		–3 800

The entry affects three accounts. First, Cash is decreased for the $4000 payment. Second, the Premium on Bonds Payable account is amortised or decreased by $200, leaving a remaining balance of $400. Third, Interest Expense is increased by $3800 to record the expense associated with the interest paid and the premium amortised. After the entry, the carrying amount of the bonds would be reported as follows:

	Issue	31 Dec. 2019
Bonds payable	$50 000	$50 000
Plus: Premium on bonds payable	600	400
Carrying amount	$50 600	$50 400

The bonds' carrying amount is $200 less after the first interest payment. The carrying amount will continue to decrease by $200 each interest payment date as the premium is amortised. After three payments, the premium will be fully amortised and the carrying amount of the bonds will equal the face value of $50 000. The amortisation schedule in Exhibit 9.4 illustrates the change in the carrying amount of the bonds over time.

Like the amortisation schedule for bonds issued at a discount, the first three columns in the schedule provide the amounts of cash to be paid, premium to be amortised and interest expense to be recognised each year. Because of the straight-line method of amortisation, the amounts are the same each year. Thus, Amber would make the same interest entry every year until the bonds mature.

The schedule also illustrates that the total cost of borrowing is comprised of interest paid and the original premium. Total interest expense over the life of the bonds is $11 400, which is the amount of interest paid ($12 000) minus the original premium ($600). When bonds are issued at a premium, total interest paid will always exceed interest expense by the amount of the premium. An alternative calculation of the total cost of borrowing is as follows:

Interest payments ($50 000 × 8%)	$ 4 000
× Number of payments	× 3
= Total interest paid	12 000
– Premium	600
Total cost of borrowing	$11 400

Interest payment	Interest paid	Premium amortised	Interest expense	Unamortised premium	Carrying amount
0				$600	$50 600
1	$ 4 000	$200	$ 3 800	400	50 400
2	4 000	200	3 800	200	50 200
3	4 000	200	3 800	0	50 000
	$12 000	$600	$11 400		

EXHIBIT 9.4 Amortisation schedule — bonds issued at a premium

Recording the maturity

Amber must repay $50 000 on 31 December 2021 to satisfy its obligation. The entry to repay the bonds requires a decrease to both Cash and Bonds Payable:

31 Dec. 2021	Bonds Payable	50 000	
	Cash		50 000
	(To record repayment of the bonds)		

Assets	=	Liabilities	+	Equity
–50 000		–50 000		

APPLY THIS

Check out the animated summary on Bonds Issued at a Premium

LO4 REDEEMING A BOND BEFORE MATURITY

Sometimes a bond is redeemed or retired before maturity. This can occur when the bond has a feature that allows the borrowing company to 'call' or retire the bonds at a certain price. The call price is usually stated as a percentage of face value. For example, a call price of 105 means that the bonds can be retired by paying the creditor 105 per cent of the face value of the bonds.

Bonds are retired early for various reasons. A company may simply want to reduce future interest expense or take advantage of falling interest rates by replacing existing bonds with less costly (lower interest rate) bonds. Whatever the reason, the accounting for the early retirement of a bond consists of the following three steps:

1. Update the carrying amount of the bond.
2. Calculate gain or loss on the retirement.
3. Record the retirement.

The first step is to update the carrying amount of the bond. Often this means that the bond must be amortised for a partial period. For example, if a bond is retired three months after the last interest payment date, the bond would be amortised for those three months to update the carrying amount. Interest payable for the three months would also be recorded and would be paid in addition to the call price.

The second step is to calculate any gain or loss on retirement by comparing the carrying amount to the call price. When the carrying amount exceeds the call price, the company is paying less than the value of the liability. In that case, the company records a gain on the redemption. In contrast, when the call price exceeds the carrying amount, the company is paying more than the value of the liability. In that case, the company records a loss on the redemption. This is summarised as follows:

KEY FORMULA 9.4 GAIN OR LOSS ON REDEMPTION

Gain on Redemption = Carrying Amount > Call Price

Loss on Redemption = Call Price > Carrying Amount

To illustrate, suppose that Wollongong Waterworks issues a $20 million eight-year bond on 1 January 2020 to fund the conversion of a pump station to an arts centre. The bond has a stated interest rate of 5 per cent and is callable at 103 any time after 2024. The bond pays interest on 31 December each year. The bond sells for $19.2 million, or an $800 000 discount. A condensed amortisation schedule is presented in Exhibit 9.5.

Now suppose that Wollongong decides to retire the bond a year early on 31 December 2026. The bond's call price of 103 means that Wollongong can retire the bond by paying the bondholder 103 per cent of face value, or $20.6 million ($20 million × 103%). According to the amortisation schedule, the 31 December 2026 carrying amount of the bond is $19.9 million (after the interest payment). Therefore, the gain or loss on redemption is calculated as follows (figures in thousands):

Call price	$20 600
Less: Carrying amount on 31 Dec. 2026	19 900
Loss on redemption	$ 700

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
				$800	$19 200
31/12/20	$2 000	$100	$2 100	700	19 300
⋮	⋮	⋮	⋮	⋮	⋮
31/12/25	2 000	100	2 100	200	19 800
31/12/26	2 000	100	2 100	100	19 900
31/12/27	2 000	1000	2 100	0	20 000

EXHIBIT 9.5 Condensed amortisation schedule (in thousands of $): bond issued at a discount

Wollongong would record the redemption with the following journal entry (figures in thousands):

31 Dec. 2026	Bonds Payable		20 000		
	Loss on Redemption		700		
	Discount on Bonds Payable				100
	Cash				20 600
	(To record redemption of the bond)				
	Assets	=	Liabilities	+	Equity
	–20 600		–20 000		–700
			+100		

This entry first decreases the Bonds Payable account by its face value of $20 million. Because Wollongong no longer has the bond, it also decreases the remaining $100 000 balance in the Discount on Bonds Payable. The entry then reduces Cash for the amount paid to retire the bond and records a $700 000 Loss on Redemption to reflect the loss on retiring the bond. This loss account is reported on the statement of income as an expense. The overall effect of the entry is to decrease assets, liabilities and equity.

MAKING IT REAL

CLASS ACTION AGAINST CLASS ACTION LAW FIRM

In yet another chapter of the financial difficulties of class action law firm Slater and Gordon (S&G), the group of international hedge funds led by Anchorage Capital Group decided to swap (some) bonds they hold in S&G for approximately 95 per cent of the shares in the firm. Current shareholders were told at the annual general meeting to expect little or nothing for their existing shares. S&G shares reached almost $8 in early 2015 before falling to just a few cents (before the 1/100 share split in December 2017).

The story began back in 2007 when S&G were the first law firm in the world to 'go public' (formed into a public company) and were listed on the Australian Securities Exchange.

With international expansion on the agenda, S&G began acquiring law firms in Britain in 2012 and in early 2015 issued bonds and shares to fund its largest purchase, the professional services business of the insurance claims company Quindell for £637 million (at the time over $1.2 billion Australian). Soon after the acquisition UK corporate regulator the FCA commenced an investigation into Quindell's revenue recognition principles. The investigation resulted in a restate of the original 2014 profit of £175 million to an almost £140 million loss.

Some Australian banks have been forced to make major write-downs, after they sold S&G's debt for around 20 cents in the dollar. The financially troubled law firm's over $700 million debt was offloaded to Anchorage and other hedge funds for less than $150 million.

Alamy Stock Photo/Mick Sinclair

LO5 ADDITIONAL LIABILITIES

The next two sections examine two additional types of liabilities that are common to many organisations: lease liabilities and contingent liabilities.

LEASE LIABILITIES

When companies acquire non-current assets, they have a few ways to pay for them. One option is to pay with cash on hand. Another option is to issue bonds or additional equity (shares) to raise the necessary capital. A third option, which is the focus of this section of the text, is to use lease financing.

A **lease** is a contractual agreement in which the lessee obtains the right to use an asset by making periodic payments to the lessor. One of the major advantages of lease financing is its flexibility. Terms of usage, time limits and payments are a few of the many aspects of lease contracts that can vary. As a result, one lease can look very different from another. However, according to the accounting standard AASB 16 Leases, although there

lease
A contractual agreement in which the lessee obtains the right to use an asset by making periodic payments to the lessor.

are two main types of lease: operating leases and finance leases, the Standard introduces a single lessee accounting model and requires a lessee to recognise assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognise the right to use the underlying leased asset and a lease liability representing the obligations to make lease payments.[2]

Operating leases were popular with companies because they were a form of **off-balance-sheet financing**, which occurs when a company's future obligations regarding an asset are not reported as a liability on the balance sheet. A common example was a non-cancellable operating lease. Although such lease obligations were not reported on the balance sheet, the old Accounting Standard (AASB 117), did requires future lease commitments to be disclosed in the notes to the financial statements. CSL in Note 13 reports Operating Lease commitments in 2017 of $668.1 million, but only $25.4 million in Finance Lease commitments.

off-balance-sheet financing
Occurs when a company's future obligations regarding an asset are not reported as a liability on the balance sheet.

In contrast to operating leases, a **finance lease** is a contract in which the lessee obtains enough rights to use and control an asset such that the lessee is in substance the owner of the asset – they obtain the risks and rewards of ownership. Because of this effective ownership, accounting rules require that the leased asset and the lease obligation (liabilities) be recorded by the lessee and reported on the balance sheet. The asset is depreciated and the lease payments include interest expense and the repayment of the loan. This is why such contracts are called finance leases – because the asset has been financed by way of a lease rather than by reducing cash, other borrowings or issuing shares. The actual entries associated with a finance lease and the criteria for determining whether a contract is a finance lease will be left to more advanced accounting courses.

finance lease
A contract in which the lessee obtains enough rights to use and control an asset such that the lessee is in substance the owner of the asset.

CONTINGENT LIABILITIES

A **contingent liability** is an obligation that arises from an existing condition but the outcome is uncertain and the resolution depends on a possible future event as evidenced in Exhibit 9.6. A good example of a contingent liability is legal action against a business (e.g. a media company being sued for defamation), which is an uncertain condition, whose resolution depends on future events (e.g. a jury verdict).

contingent liability
An obligation that arises from an existing condition whose outcome is uncertain and whose resolution depends on a future event.

The Accounting Standard, AASB 137 Provisions, Contingent Liabilities and Contingent Assets; ensures:

> that appropriate recognition criteria and measurement bases are applied to provisions, contingent liabilities and contingent assets and that sufficient information is disclosed in the notes to enable users to understand their nature, timing and amount.[2]

Additionally:

> 'contingent' is used for liabilities and assets that are not recognised because their existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity. In addition, the term 'contingent liability' is used for liabilities that do not meet the recognition criteria.
>
> The Standard distinguishes between:
>
> (a) provisions – which are recognised as liabilities (assuming that a reliable estimate can be made) because they are present obligations and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligations; and
>
> (b) contingent liabilities – which are not recognised as liabilities because they are either:
>
> (i) possible obligations, as it has yet to be confirmed whether the entity has a present obligation that could lead to an outflow of resources embodying economic benefits; or
>
> (ii) present obligations that do not meet the recognition criteria in this Standard (because either it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation, or a sufficiently reliable estimate of the amount of the obligation cannot be made).[3]

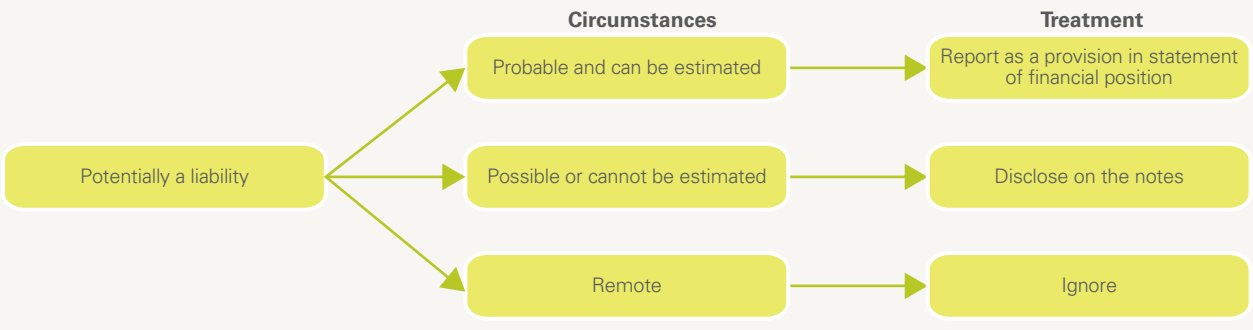


EXHIBIT 9.6 Potential liability

Provisions are recognised as a liability, although there is no certainty as to when they will be paid or the amount. They should be recorded and reported on the balance sheet because they are present obligations that can reasonably be *estimated* and it is *probable* an outflow of resources will be required to settle the obligation. A warranty meets these two conditions. Most retailers and manufacturers will have defective products that customers return, and most can reasonably estimate their future warranty claims by reviewing historical claims. As a result, most companies include warranty obligations among their liabilities. These kinds of liabilities are often referred to as estimated liabilities. In Note 16 CSL reports that employee benefits of $135.9 million in 2017 is the major provision.

While probable liabilities are recorded as provisions under current or non-current liabilities in the balance sheet, those that have only a *remote* probability of occurring can be ignored. In between probable and remote is an area called possible. Possible liabilities are disclosed in the notes as contingent liabilities. Contingent liabilities also include probable liabilities that cannot be measured with sufficient reliability. Contingent liabilities are not recorded and reported in the balance sheet because their existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity.

Obviously objectivity or professional judgement is needed to separate what is probable, possible and remote and to determine if a reliable estimate can be made. This objectivity could allow management to move the boundaries between these categories which would result in more or less liabilities being reported on the balance sheet. Disclosing something in the notes brings it to the attention of investors, but it does not result in a change to a company's liabilities.

CSL ANALYSIS

Look at CSL's contingent liability note in Appendix B (Note 13). How much does the company potentially owe?

Analysis:

In its note, CSL does not report any dollar amount but states under the heading 'Litigation':

> The group is involved in litigation in the ordinary course of business. During the period ended 30 June 2017 the Group became aware of two separate patent infringement actions brought by competitors. CSL is highly confident in our intellectual property positions which are the product of more than a decade of innovative research by the Group. The company is vigorously defending against the claims.[4]

APPLY THIS

Review this content with the e-lecture

LO6 EVALUATING A COMPANY'S MANAGEMENT OF LIABILITIES

As a company operates its business, it will generate liabilities. The generation of liabilities is usually the easy part of a business, it is the repayment of those liabilities that takes substantial work and can create significant problems.

The following sections examine the liabilities of a business we will call Aussie Beach Christmas (ABC) to see how well it can meet its obligations. The examination will require information from the company's balance sheet. The required information is found in Exhibit 9.7, excerpted from ABC's 2019 Annual Report.

Source	Accounts	2019 (figures in thousands)	2018 (figures in thousands)
Balance sheet	Current Assets	$1 808	$1 683
	Total Assets	2 964	2 806
	Current Liabilities	1 365	1 226
	Total Liabilities	1 889	1 782

EXHIBIT 9.7 Account balances from Aussie Beach Christmas' 2019 Annual Report

HORIZONTAL AND VERTICAL ANALYSES

An easy and useful place to start an examination of liabilities is with horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance minus the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account is total assets for balance sheet accounts and net sales or total revenues for income statement accounts. These calculations are summarised as follows:

KEY FORMULA 9.5 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

KEY FORMULA 9.6 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}} \text{ (Balance sheet) or } \frac{\text{Account Balance}}{\text{Net Sales or Revenue}} \text{ (Income Statement)}$$

Given ABC's financial information in Exhibit 9.7, horizontal and vertical analyses of liabilities result in the following:

Horizontal analysis		
	Change	**Percentage Change**
Total liabilities	1 889 – 1 782 = 107	107 / 1 782 = 6.0%
Vertical analysis		
	2019	**2018**
Total liabilities	1 889 / 2 964 = 63.7%	1 782 / 2 806 = 63.5%

The calculations show a fairly stable position with regard to liabilities. Horizontal analysis shows a 6.0 per cent increase in liabilities. However, vertical analysis shows that total liabilities as a percentage of total assets was virtually unchanged over the two years. In both years, almost two-thirds of every dollar of assets was generated through debt. So, although liabilities are increasing, they are doing so at the same rate as assets.

CURRENT RATIO

liquidity
A company's ability to pay its current liabilities in the near future.

current ratio
Compares a company's current assets to its current liabilities and measures its ability to pay current liabilities.

Liquidity refers to a company's ability to pay off its current liabilities or obligations in the near future. Many parties are interested in a company's liquidity. For example, a loan officer would be interested in whether a company could pay monthly interest. A supplier would want to know if it could expect prompt payment. Employees are concerned with their employer's ability to satisfy payroll. One way to measure a company's liquidity is to calculate the current ratio.

The **current ratio** compares a company's current assets to its current liabilities as follows:

KEY FORMULA 9.7 CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

By comparing what a company expects to turn into cash within a year to what it expects to pay within the year, this ratio suggests how well a company can pay its short-term liabilities. A higher current ratio indicates a greater ability to satisfy current liabilities.

ABC's 2019 current ratio is calculated as follows:

$$\frac{\$1808}{\$1365} = 1.32$$

The 1.32 ratio shows that in 2019, ABC had $1.32 in current assets for every dollar of current liabilities. That is, ABC had more than enough current assets to satisfy its obligations coming due in the following year. The company's 2018 ratio was almost exactly the same ($1683 / $1226 = 1.37). When interpreting the current ratio, it is a good idea to gauge whether a company can turn its current assets into cash. For example, a company that cannot sell its inventory cannot generate cash to pay its obligations. This could be a risk for ABC. Over $1.6 million (figure not previously given) of its $1.8 million of current assets is inventory. One way to gauge the impact of inventory is to calculate the inventory turnover ratio.

Recall from Chapter 7 that the inventory turnover ratio is calculated as follows: Cost of Goods Sold / Average Inventory. ABC's inventory turnover ratio is 1.7, meaning that the company sells its average level of inventory 1.7 times during the year. If this is similar to industry standards, then it would appear that ABC should not have a problem turning its inventory into cash and paying off its current liabilities.

DEBT TO ASSETS RATIO

solvency
A company's ability to continue in business in the long term by satisfying its liabilities.

debt to assets ratio
Compares a company's total liabilities to its total assets and measures its ability to pay its liabilities in the long term.

Solvency refers to a company's ability to continue in business in the long term by satisfying its total liabilities or obligations. While predicting whether a company will survive in the long term is very difficult, we can get an idea of a company's prospects by calculating the **debt to assets ratio**, which compares a company's total liabilities to its total assets. It is calculated as follows:

KEY FORMULA 9.8 DEBT TO ASSETS RATIO

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

This ratio takes all the obligations a company reports and divides by all of the assets the company reports, yielding the percentage of assets that are provided by debt. Thus, the ratio is a good indicator of a company's **capital structure** – the mix of debt and equity that a company uses to generate its assets. Since debt must be repaid, a company that uses more debt has a riskier capital structure and therefore a greater risk of being unable to meet its obligations.

capital structure
The mix of debt and equity that a company uses to generate its assets.

ABC's 2019 debt to assets ratio is calculated as follows:

$$\frac{\$1889}{\$2964} = 0.637$$

The 0.637 ratio shows that in 2019, 63.7 per cent of ABC's assets were generated through debt. Whether a ratio of 0.637, 0.437 or 0.837 is good or bad for a company depends on many factors. Some companies willingly expose themselves to liabilities and the risk that comes with them in order to provide a greater chance of significant

profits. Others purposely reduce their risk by limiting the use of debt. Neither strategy is right or wrong – they are just different. This issue will be discussed in more detail in Chapter 12. At this point, you should simply recognise that ABC appears to have more risk of insolvency than a competitor who has a 0.437 ratio and less risk than one with 0.837!

As you consider the debt to assets ratios, you may recognise the numbers from earlier in the chapter. They are the same as those generated in the vertical analysis of total liabilities. In fact, the debt to assets ratio is equivalent to a vertical analysis of total liabilities. Both the debt to assets ratio and vertical analysis divide total liabilities by total assets and are interpreted the same. So, when you conduct a vertical analysis, you already have the debt to assets ratio.

CSL ANALYSIS

Using CSL's information in Appendix B, calculate and interpret: (1) horizontal and vertical analyses of liabilities, (2) the current ratio, and (3) the debt to assets ratio.

Analysis:

1 Horizontal analysis

Current Liabilities ($1618.1 – 1374.4) / $1374.4 = 17.4%

Non-current Liabilities (4340.8 – 3621.1) / 3621.1 = 19.9%

Total Liabilities (5958.9 – 4995.5) / 4995.5 = 19.3%

Vertical analysis

Total Liabilities $5958.9 / $9122.7 = 64.9%

The 19.3 per cent horizontal analysis reflects an increasing amount of obligations, slightly more in non-current liabilities. The 64.9 per cent vertical analysis of total liabilities shows that almost two-thirds of the company's assets are financed through debt, with just over 35 per cent through equity.

2 Current ratio

$4602.1 / $1618.1 = 2.8

The 2.8 current ratio indicates that CSL has almost $3 in current assets for every $1 of current liabilities. It may appear that the company could very easily pay off its current liabilities with its current assets, but this is a function of CSL selling on credit and holding large amounts of inventory. Since most of CSL's current assets are tied up in inventory, it will be important for the company to continue to sell its inventory and one of the risks noted in the annual report is that inventories generally have expiry dates.

3 Debt to assets ratio

$4340.8 / $9122.7 = 64.9%

You will note the 64.9 per cent debt to assets ratio is the same as the vertical analysis above. This could be expressed as a debt to equity ratio of 1.9 to 1. Is this a reasonable capital structure or (as investment guru Ben Graham used to say) should the company own more than it owes? So, this may be regarded as medium risk, but should CSL be using more of other people's money? Obviously the directors think so or they would issue more shares or buy back fewer shares (covered in Chapter 11) and borrow less or repay more. Share price increases over the period show shareholders appear happy with the share price going from $27 in 2011 to $140 in 2017.

LO7 APPENDIX: DETERMINING A BOND'S ISSUE PRICE

Calculating the issue price of a bond requires the conversion of a bond's future cash flows into today's dollars. A conventional interest-paying bond has two types of future cash flows: the one-time principal payment made at maturity and the periodic interest payments made each year. The bond's issue price will always be the *present value* of those future cash flows discounted back at the current market rate of interest.

To illustrate, suppose that the market rate of interest is 8 per cent when the Bergomi Company issues a $100 000 four-year bond that pays interest annually at a rate of 10 per cent. The future cash flows of this bond are represented graphically in Exhibit 9.8.

The $100 000 principal payment is a single payment made at the end of year four. Therefore, it is discounted back four periods at an 8 per cent rate using the appropriate factor found in Appendix A, Exhibit A.4 on page 260: *present value of $1*. The factor for four periods ($n = 4$) and a rate of 8 per cent ($r = 8\%$) is 0.7350. Therefore, the present value of the $100 000 payment in four years is $73 500 ($100 000 × 0.7350).

The $10 000 interest payments are made at the end of *each* of the next four years. Therefore, they constitute an *annuity* that is discounted back four periods at an 8 per cent rate using the appropriate factor found in Appendix A: present value of an *ordinary annuity*. An annuity is a stream of the same dollar amount at set intervals for a number of periods. The factor for four periods ($n = 4$) and a rate of 8 per cent ($r = 8\%$) is 3.3121. Therefore, the present value of the four $10 000 annual payments is $33 121 ($10 000 × 3.3121).

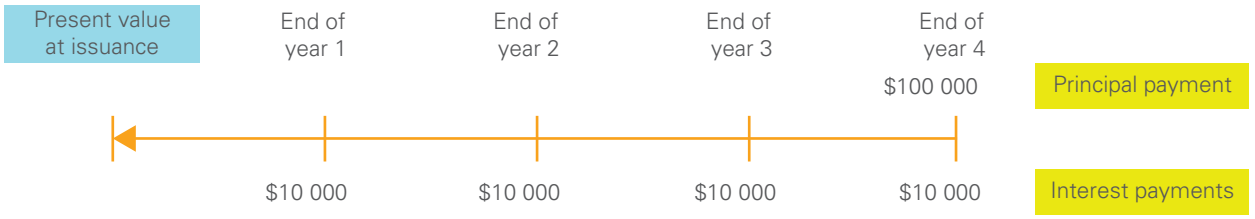


EXHIBIT 9.8 Bergomi Company future cash flows

	Premium case 8% market rate	Par value case 10% market rate	Discount case 12% market rate
Present value of a single payment of $100 000	$ 73 500	$ 68 300	$63 550
Present value of an annuity of $10 000	33 121	31 700	30 373
Issuance price	$106 621	$100 000	$93 923

EXHIBIT 9.9 Calculations of bond issue prices

Adding these two present values together yields $106 621; so, the bond sells for a premium. This calculation, along with similar calculations for 10 per cent and 12 per cent market rates are shown in Exhibit 9.9.

Note that the prices calculated confirm that bonds are issued for a premium when the stated interest rate exceeds the market rate, face value when the two rates are equal, and a discount when the market interest rate exceeds the stated rate.

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LO8 APPENDIX: EFFECTIVE INTEREST METHOD OF AMORTISATION

When a bond is issued at a discount or premium, the discount or premium must be amortised over the life of the bond. The following sections demonstrate the effective interest method of amortisation.

effective interest method of amortisation Method that amortises the bond discount or premium so that interest expense each period is a constant percentage of the bond's carrying amount.

The **effective interest method of amortisation** amortises the bond discount or premium so that interest expense each period is a constant percentage of the bond's carrying amount. Under this method, interest expense is calculated by multiplying the bond's carrying amount by the market rate of interest at issue by the time outstanding.

KEY FORMULA 9.9 INTEREST EXPENSE (EFFECTIVE INTEREST METHOD)

Interest Expense = Carrying Amount × Market Rate of Interest at Issue × Time Outstanding

Once interest expense is known, the amount of discount or premium amortised is the difference between interest expense and interest paid.

KEY FORMULA 9.10 DISCOUNT OR PREMIUM AMORTISED EACH PAYMENT (EFFECTIVE INTEREST METHOD)

Discount Amount Amortised = Interest Expense – Interest Paid

Premium Amount Amortised = Interest Paid – Interest Expense

To illustrate, we use examples with the fictional organisation Bergomi, starting first with the discount example.

DISCOUNT EXAMPLE

For the Bergomi bonds, the market rate of interest was 12 per cent and the $100 000 bond was issued for $93 923, resulting in a discount of $6077. The issue would be recorded with the entry below:

1 Jan.	Cash	93 923	
	Discount on Bonds Payable	6 077	
	Bonds Payable		100 000
	(To record bonds issued at a discount)		

Assets	=	Liabilities	+	Equity
+93 923		+100 000		
		–6 077		

At the end of the first year, interest expense, interest paid and the amount of the discount amortised would be calculated as follows. Note that 'time outstanding' is omitted from the calculations because interest is paid annually:

Interest expense	Carrying Amount × Market Rate	$93 923 × 12%	$11 271
Interest paid	Face Value × Stated Rate	$100 000 × 10%	$10 000
Discount amortised	Interest Expense – Interest Paid	$11 271 – $10 000	$ 1 271

With these values, Bergomi would record the following entry on the first interest payment date:

Payment 1	Interest Expense	11 271	
	Discount on Bonds Payable		1 271
	Cash		10 000
	(To record the payment of interest)		

Assets	=	Liabilities	+	Equity
–10 000		+1 271		–11 271

Because the Discount on Bonds Payable account is reduced by this entry, the carrying amount of the bonds will increase. As a result, the amount of interest expense for the second interest payment will increase as well. In fact, interest expense will continue to increase each period as the bond's carrying amount increases toward the face value of $100 000. To illustrate this fact, a full amortisation schedule for this bond is shown in Exhibit 9.10 (with the numbers rounded for presentation purposes).

Note that, like the straight-line method of amortisation, the effective method amortises the bond discount to zero, resulting in an ending carrying amount equal to the face value. But, unlike the straight-line method, interest expense and the amount amortised under the effective interest method are different each period. Again, this is because the effective interest method makes sure that interest expense is a constant percentage (12%) of the current carrying amount.

PREMIUM EXAMPLE

The market rate of interest was 8 per cent and the $100 000 bond was issued for $106 621, resulting in a premium of $6621. The issue would be recorded with the following entry:

1 Jan.	Cash	106 621	
	Premium on Bonds Payable		6 621
	Bonds Payable		100 000
	(To record bonds issued at a premium)		

Assets	=	Liabilities	+	Equity
+106 621		+100 000		
		+6 621		

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
				$6 077	$ 93 923
1	$10 000	$1 271	$11 271	4 806	95 194
2	10 000	1 423	11 423	3 383	96 617
3	10 000	1 594	11 594	1 789	98 211
4	10 000	1 789	11 789	0	100 000
	$40 000	$6 077	$46 077		

EXHIBIT 9.10 Amortisation schedule of bond discount using effective interest method

At the end of the first year, interest expense, interest paid and the amount of the discount amortised would be calculated as follows:

Interest paid	Face Value × Stated Rate	$100 000 × 10%	$10 000
Interest expense	Carrying Amount × Market Rate	$106 621 × 8%	$ 8 530
Premium amortised	Interest Paid – Interest Expense	$10 000 – $8 530	$ 1 470

With these values, Bergomi would record the following entry on the first interest payment date:

Payment 1	Interest Expense	8 530	
	Premium on Bonds Payable		1 470
	Cash		10 000
	(To record the first bond payment)		

Assets	=	Liabilities	+	Equity
–10 000		–1 470		–8 530

Because the carrying amount of the bonds decreases as a result of this entry, the amount of interest expense for the second interest payment will also decrease. Interest expense will continue to decrease each period as the bond's carrying amount decreases towards the face value of $100 000. To illustrate, a full amortisation schedule for this bond is shown in Exhibit 9.11 (with the numbers rounded for presentation purposes).

Note that like the straight-line method of amortisation, the effective method amortises the bond premium to zero, resulting in an ending carrying amount equal to the face value. But, unlike the straight-line method, interest expense and the amount amortised are different each period under the effective method. Again, this is because the effective interest method makes sure that interest expense is a constant percentage (8%) of the current carrying amount.

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
				$6 621	$106 621
1	$10 000	$1 470	$ 8 530	5 151	105 151
2	10 000	1 588	8 412	3 563	103 563
3	10 000	1 715	8 285	1 848	101 848
4	10 000	1 848	8 152	0	100 000
	$40 000	$6 621	$33 379		

EXHIBIT 9.11 Amortisation schedule of bond premium using effective interest method

EXERCISES

1 Current liabilities

LO1

Siu Software Store has total receipts for the day of $7326. This total includes 10 per cent GST on all sales.

REQUIRED

Calculate GST payable and prepare the journal entry to record the sales. (***Hint:*** although you add 10 per cent to the price to calculate the GST payable, for prices that include GST you divide the total price by 11.)

2 Current liabilities

LO1

The following list represents liabilities on the 30 June balance sheet of Martin Motors:

- **i** money owed to employees for work performed in the last two weeks in June
- **ii** money owed to a supplier for goods purchased based on the terms net 30
- **iii** money owed to the government, based on the annual income of the business
- **iv** money owed to the bank on a note due in July
- **v** money owed to the ATO for GST collected.

REQUIRED

Identify the liability account that would likely be used to report each item.

3 Current liabilities

LO1

On 1 March Powani Power People borrows $900 000 on a six-month, 6 per cent note from Darwin Bank. Assume interest is paid at the maturity of the note.

REQUIRED

a Prepare the journal entry to record the receipt of cash from the note.

b Prepare the journal entry to record the accrual of interest if Powani prepares financial statements on 30 June.

c Prepare the journal entry to record the repayment of the note at maturity.

4 Current liabilities

LO1

The employees of Pinehurst Company earned wages of $80 000 during the month of June. The following were withholdings related to these salaries: $5000 for health insurance, $3000 for voluntary superannuation contributions by the employees and $9000 for income tax.

REQUIRED

a Prepare the journal entry to record the payment of these salaries assuming they are paid on 30 June.

b Prepare the journal entry to record Pinehurst Company's additional payroll tax expense for June of $9800.

5 Recording and reporting notes payable

LO1, 2

On 1 July 2019, Williams Company borrows $100 000 from the bank by signing a $100 000, 8 per cent, two-year note payable. Annual interest is paid on 30 June. Williams has a 31 December financial year-end.

REQUIRED

a Prepare the journal entries to record the issue of the note on 1 July 2019.

b Prepare the journal entry for the accrued interest at 31 December 2019.

c Prepare the journal entry for payment of interest on 30 June 2020, assuming a reversing entry was *not* made on 1 January 2020.

d How would Williams report the note payable on its 31 December 2019 and 2020 balance sheets?

6 Recording bonds and interest

LO2, 3

Gazal Galleries issued $500 000 of 10-year bonds on 1 January 2019. The bonds pay 8 per cent interest semi-annually on 1 July and 1 January. The market rate of interest on the date of issue was 8 per cent.

REQUIRED

a Prepare all journal entries necessary in 2019 assuming a 30 June end of financial year.

b How would the issue price change if the market rate was lower than 8 per cent? Higher than 8 per cent?

c What will be recorded in 2019 in the financing section of the statement of cash flows?

7 Recording bonds at a premium and a discount

LO3

On 1 January 2020, Tran Ltd issues $3 million, five-year, 10 per cent bonds with interest payable on 1 July and 1 January. Tran prepares financials on 31 December and amortises any discount or premium using the straight-line method.

REQUIRED

Prepare the journal entries on 1 January, 1 July and 31 December 2020 assuming the bonds were issued at (a) 96 and (b) 103.

8 Bond amortisation

LO3

On 1 July 2019, XYZ Company issues $4 million, five-year, 8 per cent bonds with interest payable on 30 June and 31 December. Thompson amortises any discount or premium using the straight-line method.

REQUIRED

Prepare a bond amortisation schedule assuming the bonds were issued at (a) 101 and (b) 97. Why is it necessary (or at least desirable) to amortise the discount or premium rather than simply account for it at the beginning or end of the bond?

9 Bond redemption

LO4

After making a semi-annual interest payment, the carrying amount of ABC Company's bonds was as follows:

Bonds payable	$1 500 000
Less: Discount on bonds payable	80 000
Carrying amount	$1 420 000

REQUIRED

a Calculate the gain or loss on redemption, assuming ABC redeems the bonds at 101.

b Prepare the journal entry to record the redemption.

c Can a company redeem the bonds it issues at any time? Explain.

d Why might a company want to redeem its bonds before maturity?

10 Leases

LO5

Yang needs a new piece of equipment for her factory. Instead of purchasing the asset, the business chooses to enter into a twelve-month operating lease with monthly payments of $5000.

REQUIRED

a Prepare the journal entry to record the first lease payment.

b What are the financial reporting advantages of an operating lease over a finance lease?

c Why might Yang have chosen to lease the equipment instead of buying it?

11 Contingent liabilities

LO5

Tanner Toys had sales of $2 500 000 during the 2019–20 financial year. In 2018–19, 5 per cent of sales were returned for a refund because of defects, but Tanner believes that recent product changes will reduce sales returns (warranty) expense to about 3 per cent of 2019–20 sales.

REQUIRED

a What amount is Tanner expecting to refund customers for purchases made in 2019–20?

b Should this amount be reported as a liability on the financial statements? Why or why not?

c Is Tanner using a reasonable means to estimate warranty expense?

d If Tanner was being sued because one of its toys are alleged to have injured several children, what would be the financial reporting implications?

12 Evaluate liabilities

LO6

The following financial data were reported by Wang Wireless for two recent years ($ in thousands):

Wang Wireless Balance sheet (partial)		
	Current	**Prior**
Current assets	$2 290	$ 669
Current liabilities	2 257	2 172
Total liabilities	9 801	9 854
Total assets	5 131	6 200

REQUIRED

Conduct horizontal and vertical analyses of Wang's accounts and calculate the current and debt to assets ratios for each year. How would the most recent ratios change if Wang decided to pay off $1 million of current liabilities with cash?

13 Appendix: calculate bond issue price

LO7

The market rate of interest was 7 per cent when Greene Corporation issued a $100 000 five-year bond that pays interest annually at a rate of 10 per cent. Present value of the principal is $71 300. The present value of the interest payments is $37 908.

REQUIRED

Calculate the amount of premium or discount at the time of issue.

14 Appendix: bond interest and amortisation

LO7, 8

On 1 July 2019, Tallakson Company issues a $50 000, five-year, 8 per cent bond with interest payable annually on 30 June. The market interest rate at issue is 10 per cent. Tallakson uses the effective interest method of amortisation.

REQUIRED

a Determine the issue price of the bond by using the appropriate table(s) in Appendix A.

b Prepare the entry for the first interest payment on 30 June 2020.

c Prepare an amortisation schedule for the bond.

PROBLEMS

15 Recording and reporting current liabilities

LO1

The following is a list of liability accounts on the ledger of Chew House on 1 January:

GST Payable	$ 7500
Accounts Payable	9500
Unearned Service Revenue	16500

The following transactions occurred during the month of January:

1 January	Borrowed $25000 from Perth Bank on a six-month, 6 per cent note.
9	Provided service for customers who had paid $6000 in advance (including GST).
15	Paid ATO for GST collected in December, $7500.
18	Bought inventory on credit for $12000 plus GST.
23	Sold goods on credit for $3000, plus 10 per cent GST.

The employees of Chew House earned gross salaries of $45000 during January. Withholdings were $4000 for income tax and $1900 for voluntary superannuation contributions. In addition state payroll tax was $2500. Salaries earned in January will be paid during February.

REQUIRED

a Prepare journal entries for the January transactions.

b Prepare adjusting entries at 31 January for the salaries expense, payroll tax expense and notes payable.

c Create the current liability section of the balance sheet at 31 January.

16 Bond presentation, interest and redemption

LO2, 3, 4

The following is an excerpt taken from the 30 June 2021 balance sheet of the Wimbledon Company:

Current liabilities	
Bond interest payable	$ 64000
Non-current liabilities	
Bonds payable	1600000
Less: Discount on bonds payable	(30000)
Carrying amount	1570000

The bonds have a stated interest rate of 8 per cent and mature on 1 July 2026. Interest is paid semi-annually on 1 July and 1 January. The bonds are callable at 105 on any semi-annual interest date.

REQUIRED

a Prepare the journal entry to record the payment of bond interest on 1 July 2021.

b Prepare the journal entry to amortise the bond discount and pay the interest on 1 January 2022.

c Prepare the journal entry to record the redemption of the bonds on 1 January 2022, after the interest has been paid.

d Prepare the adjusting journal entry for 30 June 2022, *assuming that the bonds were not redeemed.*

17 Bond issue, interest, redemption and reporting

LO3, 4

Gateway Unlimited sold $2 million of six-year, 10 per cent bonds on 1 January 2019. The bonds pay interest semi-annually on 1 July and 1 January. The bonds sold at 97. The straight-line method is used to amortise any bond premium or discount.

REQUIRED

a Prepare all journal entries related to the bonds for 2019 and 2020 and show how the bonds would be reported on the 31 December balance sheet.

b How would the 2019 statement of cash flows be affected by the bonds?

c Prepare a bond amortisation schedule.

d On 1 July 2023, after the interest payment, Gateway redeems the bonds for 101. Prepare the entry to record the redemption.

e How would the 2023 statement of cash flows be affected by the redemption?

18 Analysing liabilities

LO6

Explorer Limited's board of directors is having its annual meeting to analyse the performance of the firm. One area the board is focusing on is total liabilities. The following are selected items of the 30 June 2020 balance sheet:

	30 June 2020	30 June 2019
Total assets	$935870	$902225
Total liabilities	575430	562855
Total equity	360440	339370

REQUIRED

Conduct horizontal and vertical analyses of total liabilities and interpret the results. Explain whether or not Explorer should be pleased with its financial position based on these calculations.

19 Appendix: comparing amortisation methods

On 1 January 2019, LED issues bonds with a face value of $300000. These bonds have a stated interest rate of 4 per cent and interest is paid annually on 31 December. The bonds mature in four years. The market interest rate at the date the bonds are issued is 5 per cent.

REQUIRED

a Determine the amount of discount on the bonds at issue.

b How much of the discount will be amortised in the first year under (i) the straight-line method and (ii) the effective interest method?

c Does interest expense each year differ under the straight-line and effective interest methods of amortisation?

d Does total interest expense over the life of the bonds differ under the straight-line and effective interest methods of amortisation?

20 Research and analysis

LO1, 2, 5, 6

Access the latest annual report for a company of your lecturer's choosing or the latest CSL annual report.

REQUIRED

a Examine the company's balance sheet and conduct horizontal and vertical analyses of all liability account balances, including total liabilities.

b Examine the financing activities section of the company's cash flow statement. Over the past two years, did the company borrow or repay debt more?

c Calculate the company's current ratio and debt to assets ratios for the most recent and the previous financial year.

d Examine the company's non-current liability note. What type of debt was eliminated during the current financial year? Did the company use cash to retire? Was any of the remainder retired?

e Based on your answers above, write a paragraph explaining your opinion of the company's liability position. Use your answers as supporting facts.

21 Written communication

LO5

Lara Lawn and Leisure manufactures and sells all types of yard equipment. The company was recently sued by a plaintiff who claimed that a defective lawnmower caused a serious injury. The company was made aware of this at the end of its fiscal year, but it is not sure how to report it in its financial statements.

REQUIRED

Write a brief memo explaining the possible treatments of this lawsuit for financial reporting purposes. Also, provide some ideas on how to estimate the potential liability if the company believes that liability is probable.

22 SMS Communication

LO1

In 144 characters or less explain the difference, if any, between *debt* and *liabilities*.

23 Ethics in accounting

LO1, 2, 6

You are the accountant for a medium-size manufacturer. Your company has some existing debt that requires the company to maintain a current ratio of 1.50 or higher. If the ratio drops below that value, the lender can increase the interest rate from 6 to 9 per cent. Recently, the company's current ratio has been hovering around 1.50, and the CEO believes that when some long-term debt maturing in the following year is reported as current, the ratio will fall below 1.50. The CEO asks you to keep the long-term debt as a non-current liability instead of reclassifying it as a current liability. 'After all', he says, 'it is still reported as a liability'.

REQUIRED

a Is there an ethical issue with the CEO's request? How should you respond?

b Research 'Centro liabilities' or 'ABC Learning liabilities' or 'Allco Finance Group liabilities' and discuss if the classification of liabilities is more than an ethical issue.

10

Partnerships

This chapter examines the accounting for partnerships. From an accounting perspective, partnerships are more complex than sole traders because we need to track the contributions by each partner, distributions to each partner and capital remaining of each partner. Because a partnership ends if a partner leaves and a new partnership is formed with the remaining partners or with the addition of a new partner, the accounting is critical in both allocating benefits to each partner and keeping the records associated with these benefits. Unlike companies, partnerships are private business arrangements and usually do not have publicly available financial statements.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the characteristics of the partnership form of business.
2. Account for a partner commencing a partnership.
3. Calculate the allocation of profits and losses to the partners.
4. Record the admission and withdrawal of partners.
5. Explain the liquidation of a partnership.
6. Prepare the financial statements for a partnership.

Queensland

PARTNERSHIP ACT 1891

TABLE OF PROVISIONS

LO1 THE PARTNERSHIP FORM OF BUSINESS

Chapter 2 introduced the three major forms of business: the sole proprietorship (sole trader), the partnership and the corporation (company). The following sections describe some of the characteristics of the partnership form of business that distinguish it from sole proprietorships and companies. The English *Partnership Act 1890* defined a partnership as 'the relation which subsists between persons carrying on a business in common with a view of profit'. In the 1890s, most state governments in Australia

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enacted similar legislation. The characteristics of a partnership are as follows:

- ease of formation
- partnership agreement
- mutual agency and co-ownership of property
- unlimited liability of owners (partners)
- transferability of ownership
- no partnership taxation
- capital account (and sometimes also current accounts) for each partner.

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EASE OF FORMATION

Partnerships require no formal agreement and no registration with a government agency. Partnerships are attractive because they combine the financial and human resources of two to 20 individuals, often gaining synergistic benefits. Partnerships often have only two partners; but in some professional groups, like large accounting firms, several hundred partners are permitted (limit is 1000). You cannot be forced to join a partnership, nor can you be forced to accept a new partner in the partnership. A business partnership is somewhat like a marriage, requiring cooperation and mutual respect to work successfully. You do not need a partnership agreement, but without one the provisions in the relevant partnership Act will determine any disputes. A partnership is not a separate legal or taxable entity. A partnership does not own assets in its name; they are jointly owned by the partners.

PARTNERSHIP AGREEMENT

Although a partnership does not require a formal agreement, it is highly advisable to have one. While a business is prospering, partners are friends and partners' memories of the arrangements entered into are similar, there may be no disputes. But when partners fall out and are no longer of one mind, memories differ and the sharing of risks and rewards often can no longer be agreed on. In these cases the provisions of the relevant partnership Act usually take precedence. One of those provisions – equal sharing of profits and losses – can become contentious. This will often be the case where substantially different amounts of capital have been contributed and vastly different amounts of personal effort put into the partnership. Not surprisingly, when disputes arise each partner sees their contribution as being critical to the success of the partnership business or the other partners' decisions as leading to financial failure. The court will be left to decide if a partnership exists, and how business success or failure will be returned to or burdened upon each partner.

MUTUAL AGENCY AND CO-OWNERSHIP OF PROPERTY

An advantage and disadvantage of a partnership is mutual agency. Any partner can contract on behalf of the partnership. The advantage is partnerships do not need to have every partner sign a contract; the disadvantage is any partner can bind the partnership in an agreement which could reasonably be believed to be partnership business. So, a partner in an accounting partnership could buy an office building on behalf of the partnership – each partner then becomes responsible for the repayments and each partner becomes a co-owner of the building. But when buying their own home, a partner does not share the liability and asset ownership with the other partners. Assets contributed to a partnership become the joint assets of each partner. There can be legal disputes about whether both debt and assets are personal or partnership. Not surprisingly, when debts are large and difficult to repay, the claim by individual partners is that the debts are shared, and when assets have substantially increased in value, the claim is that the assets are the individual's.

UNLIMITED LIABILITY OF OWNERS

Under a sole proprietorship and a partnership, owners are personally liable for the actions and obligations of their businesses. As a sole trader, accepting personal liability for your own actions is understood. However, in a partnership, personal liability for the partnership debts is sometimes overlooked, especially when it is the result of the actions of one partner and that partner may not have been acting as mutually agreed. Further, if other partners cannot pay their share of the debt, one partner may end up losing their home and all their other personal assets.

Because of unlimited liability in partnerships, professionals, such as auditors, who may conduct their business without the benefit of the limited liability afforded by a company, will usually place their personal assets in a

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The large audit firms in Australia are partnerships and although they have liability limited by a scheme approved under the professional standards legislation, all other partners are ultimately personally liable when an auditor is successfully sued

trust to protect them from the actions of creditors and other partners. It is not unknown for an auditor in one city to be sued for negligence and the damages to be paid by other partners from the same partnership who conduct business in a different city. Apart from ensuring personal assets are not legally available to pay partnership debts, two other mechanisms are available to protect partners of professional partnerships. First, professional indemnity insurance is available to pay in cases of professional negligence; second, liability capping schemes are now in place in all states in Australia, protecting professionals from large damages claims. Limited partnerships only limit the liability of a non-managing (sleeping) partner and are not a vehicle for limiting the liability of partners in business.

TRANSFERABILITY OF OWNERSHIP

A major disadvantage of a partnership is the need to have all partners agree on any partner leaving a partnership, selling their place in the partnership to a new partner and the admittance of any new partner to expand the partnership. In large professional partnerships much attention is given to partners leaving. If terms and payments are too harsh, it can be difficult to attract new partners who could feel trapped into working with people they may discover do not share their business values. Independent valuations of the partners' share of net assets can avoid undesirable situations; for example, a partner who wishes to leave being forced to accept a small fraction of what their share is worth, or a partner who the rest of the partnership wants to leave being able to extract substantially more than their fair share.

NO PARTNERSHIP TAXATION

No taxation sounds wonderful, but this does not mean partnership income is tax free. While companies pay income tax and, as we will discover in the next chapter, shareholders are taxed on dividends received (although they may get the benefit of franking credits), partnerships are not taxable entities. Partnership tax returns are prepared as a convenient way to present the earnings of the partnership and show the distribution of taxable income to each partner. All partnership income must be fully distributed to the partners; unlike in a trust, there is not the option to retain income in the partnership. Each partner then adds partnership income to all their other taxable income. For taxation purposes, in many circumstances a partner who works in the business may be paid a salary (wage) and have tax withheld like any other employee; for accounting purposes, we treat all payments to partners (other than return of capital) as distributions of profits.

CAPITAL ACCOUNTS FOR EACH PARTNER

Accounting is very similar for sole traders, partnerships and companies. The major difference for a partnership is in accounting for contributions, advances, profit (or loss sharing) and drawings. The purchase and recording of assets, borrowings and repayments, the earning of revenue and incurring of expenses are accounted for in the same way for all business entities. For a sole proprietor there is no need to keep separate records of who contributed capital, expertise, clients, etc. because the benefit of all contributions goes to the single owner. Equally it is not important to have a record of why distributions were made because all withdrawals go to the single owner. For companies one main account is kept for all shareholders. Detailed records are kept for ownership and dividends to every shareholder, but these are not part of the main accounting system and the only thing that distinguishes one shareholder from another is the number of shares they hold. For a partnership, detailed accounting records need to be kept for each partner. To facilitate this, accountants maintain a Capital account for each partner. Accountants may also have a Current (or Retained Earnings) account for each partner to deal with the day-to-day transactions between a partner and the partnership. Further, a Drawings account may also be used for each partner in the same way drawings were used for a sole trader in Chapter 3 (and an Advance account if money is borrowed from the partnership by one of the partners). The reason for using several equity accounts for each partner is to reflect the transactions between the partnership and each partner as transparently as possible. Remember, accounting is an information system.

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Partnerships – bringing people together

LO2 COMMENCING A PARTNERSHIP

One of the distinguishing characteristics of a partnership is multiple owners/managers. Unlike shareholders in a company who contribute cash and are not involved in business operations beyond attending and voting at annual general meetings, partners may contribute assets and liabilities and, as discussed above, are entitled to

participate in the management of the business. In large professional partnerships, many of the day-to-day management functions are delegated to a senior management team. Partnerships are often the result of combining two existing businesses with assets such as accounts receivable; plant, property and equipment; and possibly goodwill, as well as liabilities like accounts payable and bank loans. The value of these items in the books of the sole traders before the partnership is formed is irrelevant; it is the value of these items to the partnership that is important. The new partnership is buying the assets and assuming responsibility for the liabilities; we therefore value each contribution at current market (agreed) value.

CAPITAL ACCOUNT FOR EACH PARTNER

capital account for each partner Records the current market value of net assets contributed.

The **capital account for each partner** records the fair market value of net assets contributed. The simplest investment would be cash, as it requires no valuation. Imagine Emma and James each contributed $10 000 cash. This entry is very similar to the first transaction we recorded when we debited cash and credited capital in Chapter 3. In this case we credit each partner's capital account.

Cash			20 000	
Emma, Capital				10 000
James, Capital				10 000
(Emma and James invested cash in the partnership)				
Assets	=	Liabilities	+	Equity
+20 000				+20 000

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A business partnership is somewhat like a marriage

Let us add complexity by imagining Emma was in business as a sole proprietor with the balance sheet shown in Exhibit 10.1 (borrowed from the Aerial Filming example in Chapter 1).

Aerial Filming Balance sheet at 28 February		
Cash	$1 940	
Accounts receivable (money customers owe)	1 200	
Supplies	100	
Drone	1 950	
Total assets		$5 190
Loan from bank	$2 000	
Total liabilities		$2 000
Contributed capital	$1 000	
Retained earnings	2 190	
Total equity		3 190
Total liabilities and equity		$5 190

EXHIBIT 10.1 Balance sheet for Emma Aerial Filming

The current market value of the assets and liabilities is the same as the carrying amount except accounts receivable, of which they only expect to collect $1000; Supplies, which are worth $150, and the drone, which cost $2600, had accumulated depreciation of $650 and has a current market value of $1900. When Emma combines her aerial filming business with James' graphic design, we would record the following journal entry for Emma's contribution:

Cash			1 940	
Accounts Receivable			1 200	
Drone			1 900	
Supplies			150	
Allowance for Bad Debts				200
Note Payable				2 000
Emma, Capital				2 990
(To record Emma's investment in the partnership)				
Assets	=	Liabilities	+	Equity
+4 990		+2 000		+2 990

A few matters to note:

- The drone was entered at the current market value – no accumulated depreciation was recorded because the partnership was 'buying' the asset from Emma, and with the purchase of any asset, the previous owner's accumulated depreciation is irrelevant.
- Accounts receivable are recorded at their full amount and an allowance for bad debts is established because the partnership is unsure which accounts will not be received.
- The original value of Emma's capital and retained earnings is irrelevant because she is contributing net assets which are recorded at their value to the new business.

With James' contribution of assets and liabilities, the partnership balance sheet will be prepared once the journal entries are posted to the ledger and a trial balance is extracted. The statement is the result of the journal entries in the books of the partnership and not a combining of Emma's and James' previous balance sheets.

Review this content with the e-lecture

LO3 ALLOCATE PROFITS AND LOSSES

If there is no partnership agreement or the agreement is silent on the sharing of profits and losses, then they will be shared equally. Much care and attention is usually given in a partnership agreement to the sharing of profits and losses. To be persuaded to join a partnership, each partner must believe they are being fairly rewarded for the different contributions made. Equally, existing partners are likely to accept a new partner only if they believe the new partner will add to the earning potential of the partnership and will not be overcompensated to the detriment of existing partners.

Factors commonly chosen to compensate partners and base distributions on are capital contributed, partners' service and set percentages. In professional partnerships, payments will often be based on a partner's ability to generate profits and/or revenue for the partnership.

SHARING PROFITS BASED ON A SET PERCENTAGE

Regardless of the capital contributed and the partner's human resources applied to the business, the relevant partnership Act applies in the absence of agreement on profit and loss sharing and says they will be shared equally. Imagine that on 30 June, after all adjusting and closing entries (to and from the Profit and Loss Summary account or Income Summary Account, as in Closing Entries in Chapter 4) the balance in the Retained Earnings account is $100 000 and Geoff and Howard have agreed to share profits equally.

The final closing entry would be as follows:

Retained Earnings			100 000	
Geoff, Capital or Current				50 000
Howard, Capital or Current				50 000
(To record profit allocation)				
Assets	=	Liabilities	+	Equity
				+100 000
				–100 000

The entry decreases Retained Earnings because allocations are the transferring of profits to each partner, thus increasing each partner's capital account. It is not uncommon for each partner to also have a Current account where short-term changes in their owner's equity are transacted.

A partner may then withdraw cash (or other assets) from the business. This entry is similar to a sole proprietor, but a record needs to be kept of which partner has withdrawn the cash. In this case let us imagine Geoff withdraws $15 000.

The distribution of cash on the payment date would be recorded as follows:

30 Jun.	Geoff, Drawings		15 000	
	Cash			15 000
	(To record withdrawal of cash by Geoff)			
	Assets	= Liabilities	+	Equity
	–15 000			–15 000

We now have two (or three if we also use a current account) partner's equity accounts for Geoff. At the end of the year each drawings account will be closed to the current account or retained earnings account. If the partnership does not use current or retained earnings accounts for each partner, then drawings would be closed to the specific partner's capital account. This is the same as accounting for profits, drawings and retained earnings of a sole trader except there are now accounts for each partner, and some partnerships may use a current account in addition to a capital account.

SHARING PROFITS BASED ON CAPITAL BALANCES AND ON SERVICE

Often partners seek to be rewarded according to the contributions made: capital, service, ability, talent, etc. This becomes a mathematical exercise in following the partnership agreement and allocating profits accordingly.

Imagine Geoff and Howard had contributed capital of $300 000 and $200 000 respectively for a total of $500 000.

They agree the first $100 000 of profits are to be distributed on the basis of capital contributed, the next $180 000 on the basis of service (where Geoff is to receive $70 000 per annum and Howard $110 000) and any remaining profit or loss shared equally. This year the partnership made a profit of $250 000.

Partners' share of profits			
	Geoff	Howard	Total
Total profit			250 000
First $100 000 share based on capital contributed			
Geoff (300 000 / 500 000) × $100 000	60 000		
Howard (200 000 / 500 000) × $100 000		40 000	
			(100 000)
Share based on service as agreed			
Geoff	70 000		
Howard		110 000	
			(180 000)
Balance remaining			(30 000)
Profit or loss to be shared equally			
Geoff	(15 000)		
Howard		(15 000)	
			30 000
Balance remaining			0
Profits allocated to partners	$115 000	$135 000	$250 000

The journal entry would be as follows:

30 Jun.	Retained Earnings		250 000	
	Geoff, Capital			115 000
	Howard, Capital			135 000
	(To record profit allocation)			
	Assets =	Liabilities +		Equity
				+250 000
				–250 000

LO4 ADMISSION AND WITHDRAWAL OF A PARTNER

Admitting a new partner or the withdrawal of a current partner dissolves the old partnership and a new partnership commences. For partnerships with two or three partners, these changes can have a major impact on the business, but for large professional partnerships, such changes are regular and the business continues much as before. There are several ways of admitting a new partner and a current partner withdrawing. In each case it requires the consent of the other partners. From the perspective of ease in accounting, let's look at the simplest case first.

PURCHASING A CURRENT PARTNER'S INTEREST

When purchasing an existing partner's interest, the new partner pays the former partner directly. The amount paid is a private arrangement and has no effect on the dollar amounts in the partnership accounts. The partnership records the change in partners by debiting the old partner's Capital (and Current) account and crediting the new partner's Capital (and Current) account. Imagine on 31 July the old partner sells their partnership share to the new partner for $9.8 million dollars. At the time the balance in the old partner's Capital account was $1000 (there was no Current account).

The journal entry would be as follows:

31 Jul.	Old Partner, Capital		1 000	
	New Partner, Capital			1 000
	(To record the sale of partnership interest)			
	Assets =	Liabilities +		Equity
				–1 000
				+1 000

Note that the $9.8 million is not recorded; this was a private transaction between the new and old partners and had nothing to do with the partnership. The entry in the books of the partnership simply records one partner leaving and the new partner entering. The same journal entry would be made if the new partner paid the former partner $200. Why would a new partner pay anything other than $1000 when they are receiving capital of $1000? As seen above in the sharing of profits, a partner is entitled to share profits in a particular way and in this partnership the share of profits may have no relation to the dollar amount of capital. Imagine the partnership is expected to have $3 million of profits in the next financial year and the three partners share profits equally. Although the capital balances of each partner may only be $1000, each is entitled to a $1 million profit allocation. Further, as we will discover later, if the partnership is liquidated, each partner will receive a share of the excess assets, and this partnership may own assets worth tens of millions of dollars.

MAKING IT REAL

PARTNERSHIPS AND THE LAW[1]

While partnerships generally reveal little of their financial operations, if there is a dispute between partners, much may come out in court about financial arrangements. Fortunately, such disputes are rarely aired in court because most partnerships have a partnership agreement that sets out the procedures to follow if there is a dispute. One case that looked at dissolution of partnerships is *Trinkler v. Beale & Ors* which concerned 'fair dealing' on dissolution of a partnership. On appeal it was held that the 'Heads of Agreement' (partnership agreement or agreement to dissolve a partnership) was still valid although it did not specify the dollar value of land in the partnership. On appeal it was held that a partner was only required to compensate another partner with the 'fair value' not the 'full value' of partnership property gained in the dissolution of a partnership.

In a more recent case, the *Commissioner of State Revenue (Vic) v Danvest Pty Ltd & Anor*, the ownership and change of ownership of assets was considered, not so much from the partners' perspective but from the government's ability to collect taxes on the 'sale' and 'purchase' of assets which has implications for partnerships.

The Supreme Court decision was upheld that the sale and purchase of the interest of partners in a partnership was not 'a transfer of dutiable property'. The outcome of this case has implications in Victoria for the collection of stamp duty (until the law is changed). In other states the stamp duty legislation has partnership-specific provisions that impose the tax on partnership asset sales. In the judgment Santamaria JA said the interests of the buyers are not interests in an estate in fee simple and therefore duty was not payable. Several High Court cases, when speaking of the interest of a partner in partnership property, refer to it as a 'beneficial interest'.

Better to involve the lawyers at the beginning of a partnership than at the end

INVESTING IN THE PARTNERSHIP

A new partner may invest in the partnership, thus expanding the size of the partnership and adding to the resources of the partnership. This is relatively straightforward when the amount of resources contributed is equal to the capital of the new partner. Imagine a partnership with three existing partners with equal shares. Each partner has a capital account with a credit balance of $100 000 (but for simplification we will ignore the thousands). Imagine the new partner contributes $100 cash on 31 August for an equal share in the partnership.

The journal entry would be as follows:

31 Aug.	Cash	100	
	New Partner, Capital		100
	(To record the admission of a new partner)		

Assets	=	Liabilities	+	Equity
+100				+100

In the old partnership, each partner had a one-third share and a capital balance of $100. In the new (expanded) partnership each partner has a one-quarter share and a capital balance of $100. This does not mean profits and losses will be shared equally; that will depend on the terms in the new partnership agreement.

INVESTING IN THE PARTNERSHIP: BONUS TO NEW PARTNER

To attract a new partner, the current partnership may be willing to allow the new partner a greater amount of capital than the new partner contributes. This could be the case when a financial planning partnership accepts a high-profile business journalist who might be expected to attract many more clients to the firm. When a new partner pays less than the capital received, this is known as a **bonus to the new partner**.

bonus to the new partner When a new partner pays less than the capital received.

Imagine the current partnership's simplified balance sheet is as below:

Assets		Liabilities	
Cash	$500	Loans	$700
Other assets	$400		
		Partners' equity	
		Sharma, Capital	$100
		Wang, Capital	$100
Total assets	**$900**	**Total liabilities and equity**	**$900**

Sharma and Wang share profits and losses: 60 per cent to Sharma and 40 per cent to Wang. On 30 September they decide to admit Haddad with a 33.33 per cent interest in the partnership upon the payment by Haddad of $70.

Before Haddad is admitted the capital in the partnership is	$200 ($100 + $100)
After Haddad is admitted the capital in the partnership is	$270 ($100 + $100 + $70)
Haddad receives a one-third share	$90 ($270/3)
Bonus to Haddad as new partner	$20 ($90 – $70)

The bonus to Haddad comes from the existing partners who share the decrease in their capital according to the *profit and loss sharing arrangement*, unless agreed otherwise:

Bonus to Haddad	$20
60% from Sharma	12
40% from Wang	8

The new Capital balances would be Sharma $88, Wang $92 and Haddad $90, total $270. The profit and loss sharing would depend on the new partnership agreement.

The journal entry would be as follows:

30 Sep.	Cash	70	
	Sharma, Capital		12
	Wang, Capital		8
	Haddad, Capital		90
	(To record the admission of a new partner with bonus to new partner)		

Assets	=	Liabilities	+	Equity
+70				+90
				–20

INVESTING IN THE PARTNERSHIP: BONUS TO EXISTING PARTNERS

Often the advantage in joining a successful partnership outweighs the capital the new partner is willing to accept. In these cases the new partner is willing to contribute more – this is known as **bonus to the existing (old) partners**. Assume the original balance sheet above where Sharma and Wang had $100 of capital each. Now imagine Haddad is willing to contribute $160 to receive a 33.33 per cent share in the partnership.

bonus to the existing (old) partners When a new partner pays more than the capital received.

Before Haddad is admitted the capital in the partnership is	$200 ($100 + $100)
After Haddad is admitted the capital in the partnership is	$360 ($100 + $100 + $160)
Haddad receives a one-third share	$120 (360/3)
Bonus to existing partners	$40 ($160 – $120)

The bonus to the existing partners comes from the new partner and it is shared as an increase in their capital according to the profit and loss sharing arrangement, unless agreed otherwise:

Bonus to existing partners	$40
60% to Sharma	24
40% to Wang	16

The journal entry would be as follows:

30 Sep.	Cash	160	
	Sharma, Capital		24
	Wang, Capital		16
	Haddad, Capital		120
	(To record the admission of a new partner with bonus to old partners)		

Assets	=	Liabilities	+	Equity
+160				+120
				+24
				+16

The new balance sheet would appear as below.

Assets		Liabilities	
Cash	$660	Loans	$700
Other assets	$400		
		Partners' equity	
		Sharma, Capital	$124
		Wang, Capital	$116
		Haddad, Capital	$120
Total assets	**$1 060**	**Total liabilities and equity**	**$1 060**

Just to check, did Haddad end up with 33.33 per cent of the capital?

Total capital	$360 ($124 + $116 + $120)
One third share	$120 ($360/3)

And that is Haddad's Capital balance in the balance sheet above.

WITHDRAWAL OF A PARTNER

Partners leave for many reasons: retirement, moving, other business opportunities, disagreements, etc. When a partner leaves, the old partnership is dissolved and a new one is created. From an accounting perspective the simplest situation is the old partner selling their interest to a new partner. This is the same as illustrated above where the new partner buys the old partner's share in the partnership. The amount paid is not relevant to the accounting of the partnership; we simply debit the old partner's capital account (with the credit balance amount immediately before leaving) and credit the new partner's capital account.

If a partner leaves with cash equal to the balance in their capital account, the accounting is also simple. We debit the old partner's capital account and credit cash.

Complexity arises when the partner who is leaving takes more (or less) cash than their capital balance. This could be accounted for by adjusting the capital balances of the remaining partners as we have done above. Assume the capital balances for Sharma, Wang and Haddad are as before: $124, $116 and $120 respectively. Now imagine the partners share profits and losses equally. The partners agree to Wang leaving on 31 October with $200 cash. Wang's capital account has only a $116 balance. The extra $84 would need to come from the remaining partner capital accounts, shared equally as per their agreement.

The journal entry would be as follows:

30 Oct.	Wang, Capital	116	
	Sharma, Capital	42	
	Haddad, Capital	42	
	Cash		200
	(To record the withdrawal of a partner with bonus)		

Assets	=	Liabilities	+	Equity
–200				–116
				–42
				–42

REVALUATION OF ASSETS BEFORE WITHDRAWAL OF A PARTNER

Partners may take assets other than cash when they leave. The partnership agreement will often specify the revaluation (or valuation) of assets before a partner leaves. Some assets, such as the clients of the business, often simply called goodwill, may not be recorded among the assets of the business. Consider the above example (before Wang withdrew). Imagine this business was a property management business. They do not own the property, but find tenants and collect rent on behalf of the landlord. In a business such as this, the clients (known as the 'rent roll') are the main asset of the business. The business may be valued at current market value of other assets plus two times the annual gross revenue from commission on rent collected.

Listed in the partnership balance sheet before revaluation is cash $660 and other assets $400 (being equipment – carrying amount $150, and buildings – carrying amount $250). An independent valuation places the following value on the partnership assets at 29 November:

Cash	$660
Equipment (reduced $10)	140
Building (increased $110)	360
Goodwill (value of the 'rent roll' newly recognised)	800

The partnership agreement states profits and losses are shared equally. In total there has been an increase in asset value by $900 (–10 + 110 + $800).

The journal entry would be as follows:

30 Nov.	Buildings	110	
	Goodwill	800	
	Equipment		10
	Sharma, Capital		300
	Wang, Capital		300
	Haddad, Capital		300
	(To record revaluation of assets and profit on revaluation to partners equally)		

Assets	=	Liabilities	+	Equity
–10				+300
+910				+300
				+300

The new balance sheet would appear as below:

Assets		Liabilities	
Cash	$ 660	Loans	$ 700
Equipment ($150 – $10)	$ 140		
Buildings ($250 + $110)	$ 360	**Partners' equity**	
Goodwill (newly recognised)	$ 800	Sharma, Capital ($124 + $300)	$ 424
		Wang, Capital ($116 + $300)	$ 416
		Haddad, Capital ($120 + $300)	$ 420
Total assets	**$1 960**	**Total liabilities and equity**	**$1 960**

Such a revaluation is often necessary when personal relationships end and assets need to be divided up. In many cases arbitration is needed to determine how the assets are divided and in some cases the court may be required to decide. This is also the case in some business partnerships if there is no written partnership agreement, dispute as to how the agreement should be interpreted or such changed circumstances that one partner believes parts of the agreement should not apply.

WITHDRAWAL OF A PARTNER AT CARRYING AMOUNT

Imagine the partners agreeing to Sharma leaving on 30 November and taking $124 in cash and part of the rent roll (Goodwill) valued at $300 to set up his own business.

The journal entry would be as follows:

30 Nov.	Sharma, Capital	424	
	Cash		124
	Goodwill		300
	(To record the withdrawal of partner Sharma)		

Assets	=	Liabilities	+	Equity
–124				–424
–300				

WITHDRAWAL OF A PARTNER AT MORE THAN THE CARRYING AMOUNT

Instead imagine the partners agreeing to Sharma leaving on 30 November and taking $199 in cash and part of the rent roll (Goodwill) valued at $300. This is known as a **bonus to the withdrawing partner** because the departing partner takes more than their capital balance ($500 – $425 = $75). This loss or shortfall reduces the remaining partners' capital in proportion to their partnership agreement, which is usually according to their sharing of profits and loss. In this case let us imagine that the sharing ratio before Sharma leaves is 40 per cent Sharma, 40 per cent Wang and 20 per cent Haddad. After Sharma leaves the ratio is 4:2 (40%:20%) or more simply 2:1 (2/3:1/3).

bonus to the withdrawing partner When the departing partner takes more than their capital balance.

The journal entry would be as follows:

30 Nov.	Sharma, Capital		424	
	Wang, Capital (2/3 × $75)		50	
	Haddad, Capital (1/3 × $75)		25	
	Cash			199
	Goodwill			300
	(To record the withdrawal of partner Sharma)			
	Assets	= Liabilities +		Equity
	–499			–424
				–50
				–25

WITHDRAWAL OF A PARTNER AT LESS THAN THE CARRYING AMOUNT

Now imagine Sharma was willing to leave with only $350 in assets. The calculations and journal entry would be very similar to the above, except in this case assets would be credited only $350. Sharma, Capital would still be debited $424 because Sharma is no longer a partner and has no capital in the partnership. The bonus would be credited to the remaining partners' capital account, again in accordance with their agreement to share profits and losses (Wang credit $50, Haddad credit $25). This is known as a **bonus to the remaining partners** because the withdrawing partners take less than their capital balance.

bonus to the remaining partners When the withdrawing partner takes less than their capital balance.

Download the Enrichment Modules for further practice

LO5 LIQUIDATION

Partnerships dissolve and are reformed each time a partner leaves or joins the partnership. But in most cases the business continues much as it had before. The **liquidation of a partnership** is different; it involves the closing down of the business, and partners may take assets other than cash. In an orderly liquidation three basic things happen: non-cash assets are sold, liabilities are paid and the partners receive their share of any cash remaining. This should reduce the balance in all accounts to zero.

liquidation of a partnership The closing down of a business that involves partners taking any remaining assets.

SALE OF ASSETS

Consider the partnership above after revaluation but before any partners leave (with total assets of $1960).

Imagine the partners decide to liquidate the partnership at the end of December. Further imagine all non-cash assets (equipment, property and goodwill) are sold on 27 December for $1500, which is $200 above the carrying amount. The profit on sale is shared among the partners in proportion to their profit and loss sharing ratio. In this example (and for the benefit of a different calculation) let us imagine it is: Sharma 10 per cent, Wang 20 per cent and Haddad 70 per cent.

The journal entry would be as follows:

27 Dec.	Cash		1 500	
	Equipment			140
	Buildings			360
	Goodwill			800
	Sharma, Capital (10% of $200)			20
	Wang, Capital (20% of $200)			40
	Haddad, Capital (70% of $200)			140
	(To record the sale of non-cash assets and profit on sale)			
	Assets	= Liabilities +		Equity
	+1 500			+20
	–140			+40
	–360			+140
	–800			

Let's imagine a less happy outcome where the assets could only be sold for $900, a loss of $400. In this case Cash would be debited $900. Each of the assets would be credited as before, but the $400 shortfall would be divided as a loss among the partners and debited to their capital

accounts: Sharma $40 (10 per cent of $400), Wang $80 (20 per cent of $400) and Haddad $280 (70 per cent of $400). The balance sheet as at 28 December would show:

Assets		Liabilities	
Cash ($660 + $900)	$ 1 560	Loans	$ 700
Equipment	$ 0		
Buildings	$ 0	**Partners' equity**	
Goodwill	$ 0	Sharma, Capital ($424 – $40)	$ 384
		Wang, Capital ($416 – $80)	$ 336
		Haddad, Capital ($420 – $280)	$ 140
Total assets	**$1 560**	**Total liabilities and equity**	**$1 560**

PAYING THE LIABILITIES

Legally this can be difficult because the partners may be responsible for debts against the partnership into the future. As with the finalising of an estate or the winding up of a company, advertisements may need to be placed in newspapers. For our example the accounting is easy, so let's imagine on 29 December we repay the loans. The journal entry would be as follows:

29 Dec.	Loans		700	
	Cash			700
	(Repaid all loans)			
	Assets	= Liabilities	+	Equity
	–700	–700		

The partnership now has $860 cash which exactly equals the combined total of the capital accounts.

PARTNERS RECEIVE REMAINING CASH

We have now arrived at a simple solution. With cash equalling capital, we debit each of the capital accounts with the amount shown as the balance in the above balance sheet and credit cash $860. All partnership accounts – assets, liability and equity accounts – have a zero balance.

But what would happen if the partnership was liquidating because the business had recently appeared on an investigative television program with a journalist and camera operator chasing the three partners down the street? The non-cash assets would be almost worthless. Now imagine we sold these assets on 27 December for $400, a loss on sale of $900. The loss will be shared in the same proportion as before.

The journal entry would be as follows:

27 Dec.	Cash	400	
	Sharma, Capital (10% of $900)	90	
	Wang, Capital (20% of $900)	180	
	Haddad, Capital (70% of $900)	630	
	Equipment		140
	Buildings		360
	Goodwill		800
	(To record the sale of non-cash assets and loss on sale)		
	Assets = Liabilities	+	Equity
	+ 400		–90
	–140		–180
	–360		–630
	–800		

This leaves Haddad's capital account with a negative (debit) balance, a **capital deficiency**.

capital deficiency A partner's capital account with a negative (debit) balance.

Partners' equity	
Sharma, Capital ($424 – $90)	$ 334
Wang, Capital ($416 – $180)	236
Haddad, Capital ($420 – $630)	(210)

If Haddad is willing to contribute $210 cash, the accounting becomes easy. The debit to Cash and credit to Haddad, Capital, increases cash and 'increases' Haddad's capital from minus (debit) $210 to zero. When the loans are repaid, the cash exactly equals the sum of Sharma and Wang's capital account balances. The partnership is liquidated by debiting the remaining capital accounts and crediting cash. All partnership accounts have a zero balance.

But what happens if Haddad cannot cover the capital deficit? Over 110 years ago an English case known as *Garner v. Murray* established the principle that capital deficits are not shared according to profit and loss ratios

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Partners do not always receive cash when they leave the partnership

(unless specified in the partnership agreement) but according to the capital balances prior to liquidation.

Before the liquidation process commenced and the assets were revalued, capital balances were:

Partners' equity	
Sharma, Capital	$124
Wang, Capital	116
Haddad, Capital	120

Therefore, if the partnership agreement is silent on sharing 'capital' losses, the loss will be shared 124:116. The $210 deficit is shared: Sharma $108.5 ($210 × 124/240) and Wang $101.5 ($210 × 116/240).

The journal entry would be as follows:

29 Dec.	Sharma, Capital	108.5	
	Wang, Capital	101.5	
	Haddad, Capital		210
	(To record the sharing of the capital deficit)		

Assets	=	Liabilities	+	Equity
				+210
				–108.5
				–101.5

Capital balances before and after Haddad's deficit was allocated:

Partners' equity before deficit allocated		Partners' equity after deficit allocated	
Sharma, Capital ($424 – $90)	$334	Sharma, Capital ($334 – $108.5)	$225.5
Wang, Capital ($416 – $180)	$236	Wang, Capital ($236 – $101.5)	$134.5
Haddad, Capital ($420 – $630)	($210)	Haddad, Capital ($210 – $210)	0

If the calculations are correct, after the loans (liabilities) are repaid, the cash should equal the combined capital balances.

Original cash (before liquidation began) $660, plus sale of assets (in last example above) $400, less the repayment of the loan $700, gives a final cash balance $360. The final act is to repay the two remaining partners on 30 December.

The journal entry would be as follows:

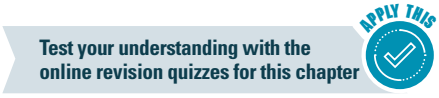
30 Nov.	Sharma, Capital	225.5	
	Wang, Capital	134.5	
	Cash		360
	(Pay remaining partners)		

Assets	=	Liabilities	+	Equity
–360				–225.5
				–134.5

This is of course the opposite of the very first journal entry; when a business was established, we debited Cash and credited Capital. Now to end the business with all accounts at zero balance we debit Capital and credit Cash.

LO6 PARTNERSHIP FINANCIAL STATEMENTS

Because a partnership differs from a sole proprietor only in the number of owners, it is with the multiple owners where the differences in financial statements arise. As we have already seen in this chapter, the balance sheet shows a capital account for each partner. In the income statement, the allocation of profits is shown at the bottom. The statement of changes in equity is the most informative of partners' relationship to the partnership. We commence with the opening balance of each partner's capital. Any additional capital and profits allocated are added and drawings are deducted to give the closing balance. Complexity is increased when partners join or leave, assets are revalued, or the liquidation process commences.



EXERCISES

1 Partnership form of business

LO1

How do each of the following characteristics relate to the partnership form of business?

a not a separate legal entity
b unlimited liability of owners
c ability to raise capital
d limited life
e taxation
f mutual agency
g co-ownership
h partner's individual equity account
i partnership agreement.

2 Partnership taxation

LO1

Most partnerships prepare a partnership tax return. Explain why a partnership tax return would be prepared when a partnership is not a taxable entity. What information is likely to be included in the tax return?

3 Account for partners' investment

LO2

Two sole traders, Amber and Leo, decide to form a partnership and contribute the following:

	Amber	Leo
Cash	$ 3 000	$11 000
Equipment (at cost)	42 000	1 500
Accounts payable	13 000	4 000

The market value of the equipment is $47 000 and $1000 respectively.

REQUIRED

Prepare the journal entries to record the investment by both partners.

4 Recording partnership formation

LO2

Sarah and Lucy formed a partnership by combining their sole trader businesses, contributing the following to the new partnership (all figures in thousands). Sarah contributed cash of $54 and land with a fair value of $390 that had cost $108. The partnership also assumed Sarah's business overdraft of $144. Lucy contributed cash of $120 and equipment that cost $146, and she had accumulated depreciation of $70 with a fair value of $84. The partnership also assumed Lucy's accounts receivable of $22 and the provision for bad debts (which upon review is believed to be adequate) of $2.

REQUIRED

Prepare the journal entries to record the investment by both partners.

5 Allocate profits

LO3

The XYZ partnership recorded a profit of $540 000.

REQUIRED

a If the three partners had nothing in their partnership agreement on profit sharing, how would profits be distributed?
b If the partners agreed on a $144 000 salary allowance for each partner and the remaining balance divided 3:2:1, calculate the amount owed to each partner.
c Assume the same information as in (b) above except profit before salary allowance was only $372 000. What would be the amount owed to each partner?
d Record the journal entries to allocate profits in (c) above.

6 Allocate profits and losses

LO3

Thien and Thu form a partnership. Thien contributes $450 000 and Thu $300 000. Thien spends up to 80 hours per week working on growing the business and servicing their clients. Thu drops into the office from time to time, but spends most of his time studying. In a complex formula they have agreed to share profits: first, $300 000 allocated according to capital contributed; second, the next $300 000 allocated 75 per cent to Thien and 25 per cent to Thu based on their service to the partnership; and any remaining amount to be allocated equally.

REQUIRED

a If the partnership profit before any allocation is $660 000 how much will be allocated to each partner?
b If the partnership had a profit of $372 000 before any allocation, how much would be allocated to each partner?
c If the partnership had a loss of $420 000 before any allocation, how much would be allocated to each partner?

7 Admission of a new partner

LO4

Peter and Paul are partners; they share profits and losses equally. Their capital balances are $19 200 and $13 200 respectively. They admit Mary to a 25 per cent share of the partnership.

REQUIRED

a Prepare the journal entry or entries if Mary pays $10 800 to become a partner.
b Prepare the journal entry or entries if Mary pays $12 800 to become a partner.
c Prepare the journal entry or entries if Mary pays $3800 to become a partner.

8 Withdrawal of a partner

LO4

Nguyen, Tran and Le are partners sharing profits and losses equally and with capital balances of $225, $675 and $450 respectively. Tran decides to leave the partnership and go into business on her own.

REQUIRED

a Prepare the journal entries to record the retirement of Tran if she is allowed to take $675 in cash.

b Prepare the journal entries to record the retirement of Tran if she is allowed to take $375 in cash.

c Prepare the journal entries to record the retirement of Tran if she is allowed to take $825 in cash.

9 Asset revaluation and withdrawal of partner

LO4

Nguyen, Tran and Le are partners sharing profits and losses equally and with capital balances of $225, $675 and $450 respectively. Before Tran leaves the partnership the assets are revalued. Equipment is worth $12 less than the carrying amount (book value), and property $147 more than the carrying amount.

REQUIRED

a Prepare the journal entries to record the revaluation of property and equipment.

b Prepare the journal entries to record the revaluation of property and equipment if the partnership agreement specifies profits and losses are allocated on the basis of the capital balances.

c Prepare the journal entries to record the departure of Tran (after revaluation and profits and losses are allocated on the basis of capital balances as in [b] above) if she is allowed to take $842.50 in cash (record to the nearest cent).

10 Liquidation of a partnership

LO5

The following is the balance sheet for the Hildebrand Partnership (all figures in millions):

Assets		Liabilities	
Cash	$ 98	Loans	$140
Equipment	$ 20		
Property	$ 72	**Partners' equity**	
		Di, Capital	$ 24
		Sue, Capital	$ 16
		Gazza, Capital	$ 10
Total assets	**$ 190**	**Total liabilities and equity**	**$ 190**

The partners share profits and losses equally. Non-cash assets are sold for their carrying amount.

REQUIRED

Prepare the journal entries for the liquidation of the Hildebrand Partnership.

PROBLEMS

11 Formation of a partnership

LO2

Man Li has operated a successful student short-term accommodation business. Currently she has a small apartment block with a book value (carrying amount) of $3 000 000. Other assets are cash, $378 000; accounts receivable, $858 000 and office equipment $1 200 000 with accumulated depreciation of $210 000. Li also has a loan from the bank of $1 455 000 and accounts payable of $330 000. Before Zhijie Yang enters the partnership an independent valuation has all assets and liabilities at current carrying amount except the apartment block that has a current market value of $6 336 000. For a one-half share of the new partnership Yang will put in cash equal to the net assets Li has in the current business.

REQUIRED

Prepare the journal entries for the entry of both partners into the partnership.

12 Distribution of profits

LO3

Lara and Matthew are partners. They share profits 2/3 Lara, 1/3 Matthew (all figures in thousands) – capital is fixed at $540 and $360, respectively. Interest is calculated on partners' drawings, advances and capital at 6 per cent per annum.

The trial balance for the financial year, after adjusting and non-equity closing entries is (all figures in thousands):

The Lara and Matthew Partnership
Trial balance
as at 30 June 2020

	Debit	Credit
Accounts Receivable	$ 306	
Inventory	504	
Buildings	450	
Accumulated Depreciation Buildings		$ 54
Short-Term Bank Loan		64
Accounts Payable		144
Profit and Loss Summary		422
Lara, Salary	216	
Matthew, Salary	144	
Lara, Current	36	
Matthew, Current	108	
Lara, Advance (long term)		180
Lara, Capital		540
Matthew, Capital		360
TOTAL	$1 764	$1 764

Lara withdrew $36 on 1 January 2020 and Matthew withdrew $72 on 1 November 2019 and $36 on 1 March 2020.

REQUIRED

a Prepare a schedule for the profit distribution for the financial year (ignore the thousands).

b Prepare the current accounts for both partners at 30 June 2020.

c Prepare the balance sheet at 30 June 2020.

13 Admission of a partner

LO4

Chris is admitted to the Mary and Peter partnership. Before her admission the partnership accounts show capital balance of $170 000 and $85 000 for Mary and Peter, respectively.

REQUIRED

Prepare the journal entries for the admission of Chris if:

a Chris pays $95 000 directly to Peter for his share of the partnership.

b Chris invests $85 000 for a 25 per cent interest in the new partnership.

c Chris invests $105 000 for a 25 per cent interest in the new partnership.

14 Withdrawal of a partner

LO4

Emily, Judy and Katt are partners. They share profits and losses 5:3:2. Their equity balances are as follows:

	Capital account	Current account
Emily	$270 000	$ 81 000
Judy	315 000	108 000
Katt	126 000	36 000

Before Emily leaves the partnership they have the assets valued at current market value. Land and Buildings is increased by $243 000 and Accounts Receivable decreased by $63 000. Emily is to receive $495 000 when she leaves the partnership.

REQUIRED

Prepare the journal entries for the revaluation of the assets and the withdrawal of Emily from the partnership.

15 Liquidation of a partnership

LO6

Refer to the Hildebrand Partnership balance sheet in Question 10 above. In the process of liquidation, the partnership sells the non-cash assets for $150 million more than the carrying amount. The partnership shares profits on the basis of Capital account balances.

REQUIRED

Prepare the journal entries for the liquidation of the Hildebrand Partnership.

16 Liquidation of a partnership with capital deficiency

LO6

Refer to the Hildebrand Partnership balance sheet in Question 10 above. In the process of liquidation, the partnership sells the non-cash assets for $32 million only. The partners share profits and losses equally, but the partnership agreement has nothing on capital deficiency.

REQUIRED

Prepare the journal entries for the liquidation of the Hildebrand Partnership if (a) Gazza contributes his deficit and (b) Gazza contributes nothing.

17 Partnership, comprehensive example

LO2, 3, 4, 5, 6

X, Y and Z form a criminal investigation partnership and call the business 'Partners in Crime' (PIC). Each partner brings different skills, experience and contacts to the business, but each contributes $70 000 cash. They agree to share profits in two steps. First Y will receive $70 000 and Z will receive $105 000 since they do most of the investigations and this reflects their respective abilities. The money paid to the partners in this first step would be withdrawn monthly. Any remaining profits will be shared 1:2:3 (X:Y:Z). The business started on 1 July 2019. By 30 June 2020 the business had made a loss (after the first-step distributions) of $56 000 and X decided to withdraw from the partnership on 1 July 2020. This left Y and Z without their 'inside contact' and it was mutually agreed that X would take only $21 000 for her equity interest.

REQUIRED

a Prepare the journal entries for the formation of the partnership and the contribution of capital on 1 July 2019.

b Prepare the journal entries for the two stages of profit and/or loss distribution.

c Prepare the journal entries for the withdrawal of X.

d Calculate the ending balance in Y and Z's capital accounts.

e Prepare the balance sheet for the new Y and Z partnership (i.e. after X has withdrawn).

18 Advising partners: formation

LO1, 2

You are a first-year accounting student and also one of the most recognised rowers in the world, having won gold in the coxless pairs at the 2018 Commonwealth Games on the Gold Coast in a time of 5:59.98, the first pairs to ever break the six-minute barrier, smashing the world record by over eight seconds. You have been approached by a highly respected and experienced business advisory firm to join their partnership. This will allow you to apply your business knowledge, gain valuable work experience and potentially earn excellent money. The partnership will only require a modest investment of your money and time, but in recognition of the contribution your name and face will give to the business, it is proposed that profits will be shared equally. The current partnership has profits of over $900 000 per year shared by just two partners; you will become the third partner. You are unsure what to do. You intend to seek legal/accounting advice but first you need to work through this proposal systematically. That way when you pay for professional advice you don't pay for a lot of basic information you could find out yourself.

REQUIRED

a List and explain the advantages and disadvantages of forming this partnership.

b List the items you would like to see specifically included in the partnership agreement.

c When you seek professional advice, what other issues would you like clarified?

d What alternative business arrangements might you propose (unfortunately this business cannot be conducted by a company)?

19 Advising partners: profit distribution

LO1, 3, 6

Dang and Tran have worked together on and off since 2018. Initially they just brought their equipment and did some of the landscaping when the other had a job that was too big or was getting behind schedule. They usually agreed on a price or agreed to do the same amount of work for the other. They worked so well together that they started to tender on larger jobs and share the risks. These larger jobs needed more equipment and during the 2020/21 financial year Dang contributed $176 000 of equipment and Tran $144 000. Dang has an excellent reputation, having worked for 20 years in the local area, while Tran is acknowledged as the quicker and better designer. During 2020/21 they 'paid' themselves a wage of $104 000. After drawing this wage they estimate they have probably made around $480 000 in profits for the 2020/21 financial year and rather than spoil their friendship they have approached you to determine how their profits should be divided, given they don't currently have a partnership agreement, not even a verbal one.

REQUIRED

a Advise Dang and Tran of the potential ways that profits could be divided.

b Recommend one particular formula and why you would propose this as a fair and equitable basis for sharing profits.

c Respond to their proposal that profits be divided according to their respective age.

d Suggest why a client might be able to sue them as a partnership, although they do not think of themselves as partners.

e Explain the consequences of them not agreeing on a distribution of profits and having the matter settled by the courts.

20 Partnership characteristics

LO1

Your mother has been good friends for a number of years with Jonathan, a fellow amateur pastry cook and coffee connoisseur. They have both won several cooking competitions and this season appeared together on MasterKitchen and have just won. She has just sent you an SMS announcing: 'OMG the most amazing news Jonathan and I (BFF) are going into partnership in the most elegant and stylishly fashionable coffee patisserie in the Southern Hemisphere'. You are concerned that she may enter into a partnership based on her euphoria from the show's success and you want to warn her about the potential dangers.

REQUIRED

Reply to her SMS starting with: 'Congrats Mum, so proud of you, please not a partnership …'. You can write a maximum of another 97 characters (spaces don't count) to persuasively warn her of the dangers of a partnership form of business.

21 Partnership profit distribution

LO1, 3

In 2006 Mr Mulvany, a former partner of the law firm Maron and Gould took legal action against his former partners alleging a $1 million bonus paid to the founding partner was a distribution of profits not 'post settlement expenses' as it was classified.

REQUIRED

a Explain how such a bonus could be included in a partnership agreement?

b From an accounting perspective, discuss the ethics of classifying a bonus payment (distribution of profits) as 'post settlement expense'.

11

Shareholders' equity

This chapter examines the accounting for shareholders' equity. We begin with a discussion of the corporate form of business. We then examine how companies account for issuing shares and cash or share dividends distributed on those shares. Then some of the interesting aspects of shares, such as share splits and buybacks are explored. After discussing preference shares and preference share dividends, the chapter concludes with a discussion on how to analyse a company's equity position.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the characteristics of the corporate form of business.
2. Discuss equity and show how it is recorded and reported.
3. Understand cash dividends, share dividends and share splits.
4. Investigate preference shares and how they receive preference in dividends and other ways.
5. Examine share buybacks and how they are recorded and reported.
6. Evaluate equity through the calculation and interpretation of horizontal, vertical and ratio analyses.

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LO1 THE CORPORATE FORM OF BUSINESS

Chapter 2 introduced the three major forms of business: the sole proprietorship, the partnership and the corporation. The following sections describe some of the characteristics of the corporate form of business that distinguish it from sole proprietorships and partnerships. These corporate characteristics are as follows:

- separate legal entity
- ability to raise capital
- limited liability of owners
- transferability of ownership
- dividend imputation
- regulation.

SEPARATE LEGAL ENTITY

A corporation is a separate legal entity. It is formed under the *Corporations Act 2001* (as amended) and administered by the Australian Securities and Investments Commission (ASIC). After the promoter has lodged an application, ASIC registers the company and issues an Australian Company Number (ACN). This costs around $500. All companies must have at least one member (shareholder). Proprietary companies must have no more than fifty members that are not employees of the company. In most cases, this new legal entity can buy, own and sell assets in its name and can also borrow money. It can sue and be sued. In other words, it has most of the rights and responsibilities of an individual in society.

ABILITY TO RAISE CAPITAL

Many sole proprietorships and partnerships have limited access to the capital needed to successfully operate or expand their businesses. In contrast, corporations can access capital through the sale of shares to investors, who then become shareholders. Many companies begin by selling shares privately to a few owners. And while many corporations stay privately owned, others 'go public' by offering shares to the public through an Initial Public Offering (IPO). Such public offerings can generate substantial amounts of capital. In Australia the federal

government sold Telstra in three instalments (T1: 1997 $3.30, T2: 1999 $7.40 and T3: 2006 $3.60) in the 'privatisation' of the telecommunications business. CSL completed its IPO in 1994 at 77 cents per share (the shares were originally issued at $2.30 but a three-for-one share 'split' in 2007 makes current share equivalence price 77c).

A great example familiar to most, if not all of you, is Facebook. When 'going public' Facebook's IPO sold less than 20 per cent of the company and raised $16 billion at $38 per share and made Mark Zuckerberg's (who retained ownership of a little over 20 per cent) stock worth $19 billion in May 2012. The shares did not see the spectacular 'stag profit' of LinkedIn which had doubled on its first day's trading. Google Inc. raised over $1.6 billion in its 2004 IPO. If needed, a corporation can continue to raise capital in the future by selling additional shares. Google followed its IPO with a second share offering in 2005, raising another $4.2 billion in capital. The ability to access capital through the sale of shares is certainly an advantage of the corporate form of business.

iStock.com/bombuscreative

Facebook became a publicly traded corporation in 2012 when it sold shares to the public for the first time. It raised $16 billion in the initial IPO

LIMITED LIABILITY OF OWNERS

Under a sole proprietorship and a non-limited liability partnership, owners are personally liable for the actions and obligations of their businesses. However, shareholders normally have no personal liability for the company's obligations beyond their investment in the company's shares. If a company defaults and cannot meet its obligations, creditors cannot seek the assets of the shareholders as compensation for the company's default. They can only pursue the assets of the company. As a result of this limited liability, shareholders stand to lose only the amount of their investments. This limited liability of owners is a significant advantage of the corporate form of business.

TRANSFERABILITY OF OWNERSHIP

Another advantage of the corporate form of business is the ease with which ownership can be transferred. When a sole proprietor wants to transfer his or her ownership to another individual, the business itself must be sold. When a partner wants to transfer an ownership interest to another investor (as we found in Chapter 10), usually all other partners must agree. Once the transfer occurs, a new partnership is formed. In both cases, the transfer of ownership can be burdensome.

In contrast, when shareholders of a publicly traded company want to transfer ownership to another investor, they need only to sell the shares to other investors. Such sales usually occur through an open share exchange such as the Australian Securities Exchange (ASX). They can be accomplished by calling a broker or logging onto a website such as CommSec and executing a sell order. Hundreds of millions of shares are bought and sold every trading day.

DIVIDEND IMPUTATION

While the corporate form has several advantages over sole proprietorships and partnerships, dividend imputation places companies on an equal footing by the removal of the double taxation of income.

A company's income is taxed by the Commonwealth Government at the flat tax rate, currently 30 per cent for all but small companies. Dividends paid to shareholders are added to its other income (wages, interest) and is also taxed on the shareholders' personal tax returns. But if company income tax has been paid on the income out of which dividends are paid, those dividends are said to be 'franked' and have the tax paid 'attached' to them. As a result, a company's after-tax income paid in dividends is *not* taxed twice.

To illustrate dividend imputation, suppose that a company earns $1000 in pre-tax earnings and is subject to a 30 per cent company tax rate. The company would pay $300 in company tax. Suppose further that the company distributed all $700 of its remaining profits to its only shareholder, who had a marginal personal tax rates of 39 per cent. The shareholder would pay $390 (because the dividend and company tax of $1000 is included in the complexity of the imputation tax calculations) in personal tax on the dividends but would be rebated the $300. Better still, if the shareholder has a marginal tax rate of only 21 per cent, she would pay $210 tax and be rebated the $300, meaning she would pay $90 less tax than if she had not received the $700 dividends.

CSL ANALYSIS

Look at front cover of CSL's Annual Report and the balance sheet in Appendix B. What tells you that CSL is a company?

Analysis:

You can tell in two ways. First, the company name refers to CSL Limited. The 'Limited' stands for limited liability, a characteristic of companies. Second, the balance sheet shows balances in Contributed Equity, and Note 12 has listed 'Ordinary shares issued and fully paid'. Unusually the dollar amount is zero because as explained later in the note 'due to share buybacks being undertaken at higher prices than the original subscription prices, the balance for ordinary share contributed equity has been reduced to nil and a reserve created …'[1]

REGULATION

A disadvantage of a company is the extent of regulation. Consider some of the reporting requirements of a publicly traded company such as CSL. These companies must file numerous reports with ASIC and the ASX if they are a listed company. These include audited annual financial statements, unaudited half-yearly financial statements and any notifications of significant events, such as the hiring of a new chief executive officer, the announcement of a dividend or the closing of a factory under the continuous disclosure regime. Adherence to and compliance with laws and regulations consume significant amounts of the time, labour and resources of companies, but are necessary because stakeholders (especially creditors), due to limited liability, only have the company (and not all the owners as with a sole trader or partnership) to pay debts and compensation.

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LO2 ORDINARY SHARES

One of the distinguishing characteristics of a company is its ability to sell shares to investors to raise funds. The amount raised by issuing shares is called **issued capital** (or **contributed equity**) because the funds are contributed by investors (through the company issuing shares) in exchange for an ownership claim on company assets. The most common type of shares are called **ordinary shares**. Investors who purchase ordinary shares are called shareholders and are the owners of the company. The other part of equity is the retained earnings. These are, as the name suggests, earnings (total comprehensive income) of the company that have not been paid to shareholders in the form of dividends, but have been retained (kept) by the company. Sometimes the directors of the company may decide to signal that some of the retained earnings may not be available for future dividends by transferring them to a reserve. It is important to remember that neither retained earnings nor reserves are a 'store of cash'. The liability and equity sections of the balance sheet show the sources of the entity's resources; the asset section shows how those resources have been used. In most circumstances the retained earnings and reserves have been used to buy plant, property and equipment or inventory. CSL has almost $300 million in reserves and over $7.4 billion in retained earnings, but much less than $1 billion in cash.

issued capital (contributed equity) The amount of capital raised by issuing shares to investors in exchange for an ownership claim on company assets. It is also known as paid-up capital or share capital.

ordinary shares The most common type of share capital.

The asset and liability section of a company's balance sheet is the same as for sole proprietors and partnerships; it is the equity section that is different. Issued capital is known by various names: *paid-up capital*, *share capital* or *contributed equity*. It refers to the money raised directly from new owners when the company issued shares to them. Notice that the description 'sold shares' is not used. Ordinary shares are not always distributed via a sale. For example, some shares are issued to employees (usually senior management) as part of their compensation. Thus, the description '**issued shares**' (or 'paid-up capital', 'shares issued and fully paid') may be used.

issued shares The number of shares a company has distributed to owners to date.

SHAREHOLDER RIGHTS

When a company issues ordinary shares, it usually grants to shareholders the following three rights:

- *The right to vote* – ensures that a shareholder can participate in company governance by voting on issues and actions that require owner consent or approval. Examples of such action are the election of directors and approval (or not) of the 'remuneration report'.
- *The right to participate proportionally in dividends* – ensures that shareholders receive an appropriate amount of any dividends declared by the company. For example, if a shareholder owns 25 per cent of a company's ordinary shares, they have the right to receive 25 per cent of any dividend the company distributes.
- *The right to participate proportionally in residual assets* – ensures that shareholders receive an appropriate amount of assets upon liquidation of the company. For example, if a shareholder owns 10 per cent of a company's ordinary shares when the company ceases operations and liquidates, they have the right to receive 10 per cent of all residual assets.

The *right of pre-emption* is related and ensures that shareholders can maintain their ownership percentage when new shares are issued. This is important in companies with a small number of shareholders and where shares are not easily obtained on the open market as they are with listed companies.

RECORDING ORDINARY SHARES

In Australia and New Zealand shares no longer have a par value. Par values were once used to determine a company's legal capital and are still used in some other countries. For Australian accounting students, this reduced the difficulty of accounting for the issue of shares and means overseas or old textbooks can appear unduly complex.

To illustrate, suppose that a company issues 100 shares for $5 per share on 5 April. The company would record this issuance as follows:

5 Apr.	Cash			500	
	Contributed Equity				500
	(To record issue of 100 shares at $5 per share)				
	Assets	=	Liabilities	+	Equity
	+500				+500

This entry increases Cash for the amount received and increases Contributed Equity (Ordinary Share Capital, Issued Capital) by the same amount. (Note this is very similar to the journal entry made when a sole trader contributed money to the business, back in Chapter 3.)

ISSUING SHARES BY INSTALMENT

Sometimes shares are issued by instalment, requiring applicants for shares to pay some money when they apply and more money later in the process. All three issues of Telstra shares were by instalment, requiring a part payment with the application and a further payment (a call) one year later. Most companies require the full amount to be paid with the application (on application); but a few may require some money on **application**, more on the **allotment or issue** of shares and further payments, appropriately called **calls**. Companies issue a **prospectus** inviting the public to apply for shares by filling out the application form and providing the appropriate application money.

application Both the request to buy shares and the money payable when shares are applied for.

allotment or issue The process of giving shares to (some of) those who have applied for them and also the money required at this stage from shareholders.

call The request for further payment(s) and the money with those further payment(s).

prospectus The legal document offering shares for sale and providing details of the company, past financial performance and future prospects.

Madison forms a company and issues a prospectus seeking applications for 10 000 shares: 50 cents payable on application, 30 cents on allotment and 20 cents call. The application money should initially be banked in a separate bank account (a trust account – for ease we call it 'Cash Trust'), because some or all of it may be refunded. The money received is from investors applying for shares and is therefore called 'Application'. On 1 January the application money was received for 10 000 shares.

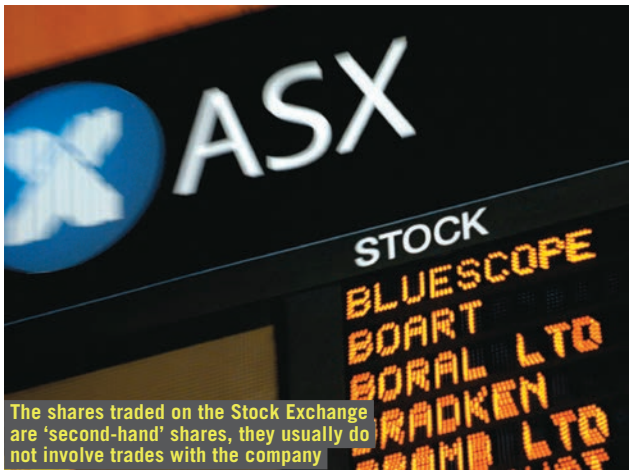
1 Jan.	Cash Trust			5 000	
	Application				5 000
	(Received applications for 10 000 shares)				
	Assets	=	Liabilities	+	Equity
	+5 000		+5 000		

This entry increases the asset Cash Trust and increases the liability Application. We classify it as a liability because the money must be paid back or the applicant given shares.

When the shares are issued or allotted, the applications are accepted as purchasing the shares (contributed equity), the allotment money becomes due and the money in the trust account is transferred into the company's normal bank account. On 2 February Madison issued (allotted) the 10 000 shares:

2 Feb.	Application			5 000	
	Allotment			3 000	
	Contributed Equity				8 000
	(Allotted 10 000 shares)				
	Assets	=	Liabilities	+	Equity
	+3 000		–5 000		+8000

Getty Images/ Bloomberg/ Jeremy Piper



The shares traded on the Stock Exchange are 'second-hand' shares, they usually do not involve trades with the company

This entry increases the asset Allotment, decreases the liability Application and increases the equity Contributed Equity (or Paid-up Capital). We have classified allotment as an asset because once the shares are issued, the company has a legal right to receive the money. At the same time, Madison can now claim application money as the company's and the money in Cash Trust can be credited and Cash debited.

On 3 March Madison receives the allotment money:

3 Mar.	Cash			3000	
	Allotment				3000
	(Received application money)				
	Assets	=	Liabilities	+	Equity
	+3000				
	–3000				

This transaction reduces one asset – Allotment – and increases another asset – Cash.

When the call is made, it follows the same pattern as the allotment: debit Call and credit Contributed Equity. The receipt of the cash follows the same pattern: debit Cash, credit Call.

OVERSUBSCRIPTION

oversubscription
When more shares are applied for than are available to be issued.

The process of selling shares by asking for applications often results in more shares being applied for than are available for sale. This is known as **oversubscription**. Let us assume Madison received applications for 12000 shares on 2 February. The company would record the application as before by debiting Cash Trust and crediting Application, but this time with $6000 (12000 shares × 50c). Depending on the conditions set out in the prospectus, the company has two options in how it treats the excess application money.

Option #1

On 8 February the company gives the excess money back to the investor (i.e. refund). Madison also accepts the application for 10000 shares and in addition to refunding the excess application money it will allot the shares as above on 2 February.

8 Feb.	Application			1000	
	Cash Trust				1000
	(Refund excess application money)				
	Assets	=	Liabilities	+	Equity
	–1000		–1000		

This entry recognises the refund part of the transactions on 8 February by decreasing the asset Cash Trust and decreasing the liability Application.

Option #2

Alternatively, on 8 February, rather than refund the money and then ask for the allotment money, Madison applies the excess Application to Allotment (and Calls in Advance if there were applications for more than 16000 shares).

8 Feb.	Application			1000	
	Allotment				1000
	(Apply excess application to allotment)				
	Assets	=	Liabilities	+	Equity
	–1000		–1000		

This entry decreases the liability Application and also decreases the asset Allotment. Or we could combine the two transactions – the refund and the allotment – in one entry.

8 Feb.	Application			6000	
	Allotment			2000	
	Contributed Equity				8000
	(Allotted 10000 shares)				
	Assets	=	Liabilities	+	Equity
	+2000		–6000		+8000

This entry decreases the liability Application by the full $6000 received, increases the asset Allotment (recognising the new shareholders have only $2000 to pay on allotment) and increases the equity Contributed Equity by the amount of the application and allotment monies. Later, when the cash is received for allotment and call, less will be received because some or all has been paid on application.

CSL ANALYSIS

Look at CSL's *Annual Report 2017* 'Share Information' and 'Shareholder Information' How many ordinary shares do CSL have issued in 2017?

Analysis:

CSL has almost 453454237 shares issued. The majority of shareholders (115731 or 79.9%) own between one and one thousand shares, but they own only 7.1 per cent of the company. The largest shareholder, HSBC Custody Nominees (Australia) Limited, holds (owns) over 156 million shares or 34.47 per cent of CSL – worth over $21 billion – but this depends on the current share price.

HSBC Custody Nominees (Australia) Limited is also the largest shareholder in the largest companies in Australia: CBA 22 per cent; Westpac 24 per cent; BHP 25 per cent; ANZ 26 per cent; NAB 24 per cent; Wesfarmers 17 per cent; Telstra 16 per cent; Woolworths 22 per cent; Macquarie Bank 29 per cent. HSBC invests on behalf of clients, so most (possibly all) of the ownership is clients, which could be individuals, superannuation funds, governments or other companies.

Alamy Stock Photo/Kristoffer Tripplaar

HSBC Custody Nominees (Australia) Limited is the largest shareholder in the largest companies in Australia

FORFEITURE

If the allotment or call money is not paid, the company usually has the power to cancel the shares and the shareholder **forfeits** the shares. Money already paid is, at least initially, kept by the company and recorded as part of shareholders' equity (Forfeited Shares Account), but not contributed equity. Assume Madison made a call on 3 March (debit Call $2000 and credit Contributed Equity $2000) but by the closing date of 4 April, money for only 9500 shares had been received (debit Cash $1900 and credit Call $1900). This leaves a debit balance in Call of $100. But for the 500 shares for which the call has not been paid, the application of 50 cents (500 × 50c = $250) and the allotment of 30 cents (500 × 30c = $150) has been paid. On 5 May the shares are forfeited; the shareholder who paid the application and allotment on those shares loses their money and is no longer a shareholder.

forfeit When a shareholder does not pay the allotment and/or call they lose the shares they have paid some of the money to buy.

5 May	Contributed Equity ($1 × 500)	500	
	Call		100
	Forfeited Share Account ($250 + $150)		400
	(Forfeiture of 500 shares)		

Assets	=	Liabilities	+	Equity
–100				–500
				+400

This entry decreases the equity Contributed Equity, decreases the asset Call and increases the equity Forfeited Share Account.

The shares may later be **reissued**, often at a discount, with the discount effectively being paid by the original shareholder. Madison reissues the shares on 6 June for 85 cents as being fully paid:

reissue When forfeited shares are again sold, often at a discount to the original issue price.

6 Jun.	Cash (500 × 85c)	425	
	Forfeited Share Account (500 × 15c)	75	
	Contributed Equity ($1 × 500)		500
	(Reissue 500 at a 15c discount)		

Assets	=	Liabilities	+	Equity
+425				–75
				+500

This entry increases the asset Cash, decreases the equity account Forfeited Share Account and increases the equity account Contributed Equity.

After paying the cost of reissue, any amount left in the Forfeited Shares Account *may* be refunded to the original shareholder.

LO3 DIVIDENDS

The goal of any company is to generate profits. Once generated, a company must decide whether or not to distribute those profits to its owners through dividends. A dividend is a distribution of profits to owners. The decision to distribute any dividend rests with the company's board of directors, which is the group of individuals elected by shareholders to govern the company and represent the interests of all owners. The board will consider many factors in its decisions, including the financial condition of the company, the cash available for dividends and the company's past history of dividends. When dividends are distributed, they are stated as a per-share amount and are paid only on issued shares and paid to the owner of the they on the **date of record**. If shares are sold the day after the date of record, they are sold ex-dividend (without the dividend) and the previous owner will receive the dividend when paid weeks or months later, although they have not owned the shares for some time. This is why the market value of shares (the price they are bought and sold for on the ASX) usually falls by an amount approximately equal to the dividend per share when the shares start trading ex-dividend (without the dividend). Market value of shares will be discussed at the end of the chapter, but suffice to say market value has little relation to the price at which shares were originally issued.

date of record The date that determines who receives the dividend – the shares' owner on the date of record receives the dividend.

When and how a company distributes dividends is called a company's dividend policy. A company's policy can often be found on its website. Dividends are normally paid in cash, but they can also be paid in other forms such as shares. The following sections discuss the practice of distributing dividends, starting with the most common type – the cash dividend.

CASH DIVIDENDS

As the name suggests, a **cash dividend** is a distribution of cash to shareholders. When a company's board decides that a cash dividend is warranted, it will declare publicly that a dividend will be distributed. The date on which the board

cash dividend A distribution of cash to shareholders.

declaration date The date on which a company's board of directors declares a dividend.

payment date The date on which a dividend will be distributed.

declares the dividend is called the **declaration date**. On this date, the board legally obligates the company to pay the dividend, so a liability is created. The board's declaration will also include the date of record and the payment date. The **payment date** is the date on which the dividend will be distributed. The date of record determines who receives the dividend. The shares' owner on the date of record receives the dividend.

Recording cash dividends

The recording of cash dividends usually requires two entries. The first entry records the declaration of the dividend and the resulting liability. The second entry records the actual distribution on the payment date.

To illustrate, suppose that a company with 100 000 issued shares declares a 50 cent per share dividend on 1 November. The dividend is payable on 30 November to shareholders of record on 15 November.

On the date of declaration, the company obligates itself to pay a $50 000 dividend (100 000 × $0.50). This obligation would be recorded as follows:

1 Nov.	Retained Earnings			50 000	
	Dividends Payable				50 000
	(To record declaration of dividend)				
	Assets	=	Liabilities	+	Equity
			+50 000		–50 000

The entry decreases Retained Earnings because dividends reduce retained earnings. The entry also increases Dividends Payable, which is a current liability. The result of the entry is a reduction in equity and an increase in liabilities.

The distribution of cash on the payment date would be recorded as follows:

30 Nov.	Dividends Payable			50 000	
	Cash				50 000
	(To record payment of dividend)				
	Assets	=	Liabilities	+	Equity
	–50 000		–50 000		

This entry is simply a payment of an obligation. Both Dividends Payable and Cash are decreased for the amount of the payment. As a result, both assets and liabilities decrease.

Note that no entry is made on the date of record because no accounting transaction occurs on that date. The date of record only determines who will receive the dividend. Therefore, it is a date with administrative importance only.

Reporting cash dividends

Companies usually report their dividends on two financial statements. Dividends *declared* during the year are reported on the statement of changes in equity. Recall that dividends reduce retained earnings, so they are reported in the retained earnings column. The following is the retained earnings column of CSL's 2017 statement of changes in equity.

	Retained Earnings $m
Balance at the beginning of the year	6 592.3
Profit for the period	1 337.4
Other comprehensive income	75.5
Dividends paid	(601.3)
Balance at end of year	7 403.9

Source: CSL Limited, *Annual Report 2017*, p. 83.

Dividends are presented as negative numbers because they are subtracted from retained earnings.

Dividends *paid* during the year are reported on the cash flow statement. Because a cash dividend is a distribution of assets to an owner, dividends are considered to be a financing activity. Therefore, they are reported in the financing activities of the cash flow statement. The following is the financing activities section of CSL's 2017 cash flow statement.

Financing activities section of CSL's 2017 Statement of cash flows

	2017 US$m	2016 US$m
Cash flows from financing activities		
Proceeds from the issue of shares	12.7	17.4
Dividends paid	(601.4)	(579.0)
Proceeds from borrowings	1 381.4	1 564.3
Repayment of borrowings	(581.3)	(716.9)
Payment for shares bought back	(314.9)	(648.2)
Net cash outflow from financing activities	(103.5)	(362.4)

Source: CSL Limited, *Annual Report 2017*, p. 84.

Because dividends are cash outflows, they are shown as negative numbers on the cash flow statement. The dividends paid as shown in the cash flow statement is the same as the amount of dividend (declared) in retained earnings. This is because CSL declares and pays its dividends in the same financial period (Final dividend declared 88.67c August 2016, Paid October 2016, Interim declared 83.78c February 2017, paid April 2017). The dividend declared (retained earnings) and the dividend paid (cash flow) are often different because of some dividends declared in the current financial year being paid in the next financial year,

and dividends declared in the previous period paid in this period. CSL does not have a dividend reinvestment scheme. In a way they have the reverse: semi-regular share buybacks (discussed in LO5: Share buybacks).

SHARE DIVIDENDS

While cash dividends are by far the most common type of dividend, some companies distribute share dividends.

share dividend
A distribution of a company's ordinary shares to existing shareholders.

A **share dividend** is a distribution of a company's ordinary shares to existing shareholders. Share dividends are declared by a company's board of directors and are usually stated in percentage terms or one share for every number held. For example, a 10 per cent share dividend (one for 10) means that the company will issue additional shares equal to 10 per cent of the issued shares. So, an investor owning 10 000 shares will receive 1000 additional shares (10 000 × 10%).

At first glance, a share dividend appears to be of great value to shareholders because they receive more shares. However, some argue that a share dividend has very little value to shareholders because they are not receiving any cash – they are receiving only shares. Furthermore, because all shareholders receive the same percentage increase in shares, a share dividend does not change a shareholder's ownership percentage, but the ownership is in a company which has not decreased its cash by paying it out in dividends. Finally, a share dividend usually results in a reduction to the market price of individual shares such that the total market value of a shareholder's holdings remains little changed. For example, a company distributing a 100 per cent share dividend will double the shares issued, but this will usually result in the share's market value being cut in half. As a result, each shareholder will have a higher number of shares but no additional monetary value. Share splits, discussed below, also reduce the market value of shares

DIVIDEND REINVESTMENT PLANS IN AUSTRALIA

A Dividend Reinvestment Plan (DRP), allows a shareholder to take some, or all, of their dividend in the form of additional shares. Dividend Reinvestment Plans are similar to share dividends, but it is the shareholder who decides to receive shares not cash rather than it being imposed on all shareholders with a share dividend. The investor can nominate what percentage they wish to split between cash and shares. Often the DRP shares are offered at a discount.

Many companies have DRPs: the five large banks (CBA, Westpac, ANZ, NAB and Macquarie); Wesfarmers (not 2003–2007); Woolworths and Telstra (not 2008–2015). CSL is the only Top 10 company in Australia that does not have a DRP.

MAKING IT REAL

DIVIDEND REINVESTMENT PLAN

Commonwealth Bank, Australia's largest company, offers one of the best known DRPs. Below is a brief extract of information the bank provides about their DRP.

> The DRP allows Shareholders to reinvest all or part of any dividend paid on their Shares in additional Shares instead of receiving the dividend in cash. Shareholders are still entitled to franking credits on dividends reinvested under the DRP. Participation in the DRP is entirely optional. The DRP is administered in accordance with these DRP Rules. You can find out how to participate in the DRP under the FAQs.
>
> It is important that you read these DRP Rules carefully before deciding whether to participate in the DRP. For the avoidance of doubt, the offer of the DRP is made in compliance with Australian law and any code, rules or other requirements relating to the offer of the DRP in Australia. If you have any questions or need advice on whether you should participate in the DRP, please contact an independent professional adviser.
>
> ...
>
> **8.1** Each Share issued or transferred under the DRP will be issued or transferred at the Market Price of Shares less such discount (if any) as the Directors may determine from time to time and notify to ASX (rounded to the nearest cent).[2]

If you had perfect timing or had perfect foresight you could have purchased one hundred Commonwealth Bank of Australia (CBA) shares in early 2009 for just under $2400 (the lowest price during the Global Financial Crisis). Over the next ten years each share has paid over $36 in dividends. If you fully participated in the DRP after ten years you would own over one hundred and seventy shares, probably worth around $15 000.

In the first six months you would have received a dividend of $1.13 per share or $113 for your one hundred shares. This $113 would have been reinvested in shares at the time valued at just over $28, giving you four additional shares. The next dividend of $1.15 per share would be received on the one hundred and four shares, as you now owned the original investment plus the four shares from your first dividend reinvestment. An additional two to five shares are received every six months when the dividend is paid; the more recent the more shares because your portfolio is growing each time the dividend is received and reinvested.

If this strategy was adopted from the IPO in September 1991 when shares were issued for $5.40 (or $540 for one hundred shares) you would, by the end of 2018 own almost five hundred shares worth (based at the time of writing on an estimated share price of around $80 per share) about $40 000. Depending on your personal tax situation you may have also received an imputation credit of over $5000. Hindsight makes the very best investors!

Shares acquired through a DRP are treated as though the investor received a cash dividend and then used this cash to buy additional shares in the company; as such the dividend is taxable (but subject to the same 'franking credit' as cash dividends). While the shares acquired from DRP are treated for capital gains tax as if purchased for cash at the date they are alloted.

So why do companies distribute share dividends or have DRP? There are a couple of potential reasons. First, they can substitute for a cash dividend when a company does not have enough cash on hand and would otherwise be forced to borrow or reduce investing activities. This motivation can be especially strong when a company is trying to maintain a long and uninterrupted history of dividends. Second, share dividends often reduce the market price of shares and like a share split keep them in an 'affordable' range for the average investor. Distributing more shares in the marketplace brings down the price of each individual share.

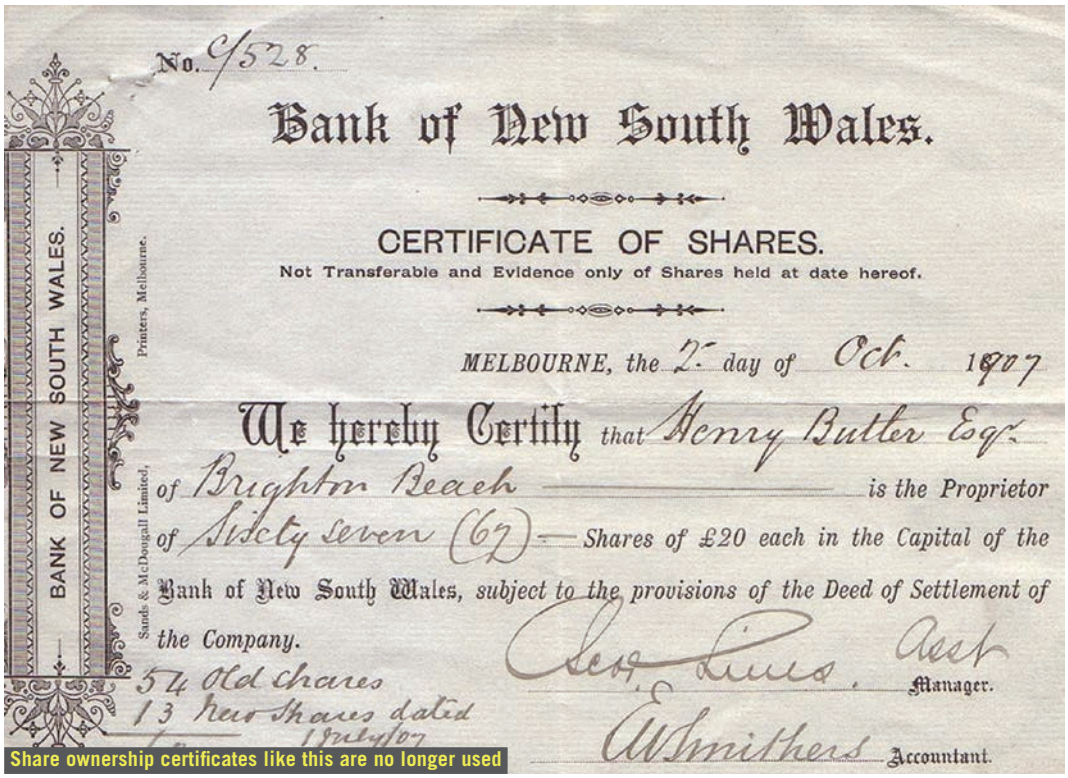
Like cash dividends, a share dividend is paid out of Retained Earnings. However, unlike a cash dividend, a share dividend is not a distribution of assets. It is a distribution of ordinary shares. As a result, a share dividend simply transfers an amount from Retained Earnings to Contributed Equity. In contrast, a share split does not reduce Retained Earnings and increase Contributed Equity; it simply increases the number of shares in the same contributed equity.

SHARE SPLITS

When a company wants to decrease the market price of its shares to make them more affordable, it can use a share split instead of a share dividend. A **share split** is an increase in a company's shares according to some specified ratio; for example, a company that declares a 2-for-1 split recalls all shares from existing shareholders and issues two shares in return, effectively doubling the number of issued shares. As a result of this increase in the number of shares, the market price of the shares usually falls proportionally. In a 2-for-1 split, the share price would be approximately halved. In Australia share splits are common, with companies like BHP 2-for-1 (in 1989, 1995, 2001) and CSL 3-for-1, splitting their shares to reduce the market price to a level the company believes would be more attractive to investors. In Australia companies appear to want to keep the market price under $100; but interestingly, in 2015 CSL did not split its shares when the price approached $100 despite splitting its shares in 2007 (see the Making it Real box 'Share split' for more). In the US, shares sometimes have a market value in the thousands. Famously, Berkshire Hathaway valued at over US$400 000 in 2018.

share split An increase in the number of a company's issued shares according to some specified ratio.

Share splits are very similar to share dividends in that they both result in an additional number of issued shares. In fact, a 2-for-1 share split is the same as a 100 per cent share dividend. However, there are important differences. A share split is not an accounting transaction, so no accounting entry is recorded. Second, while both do not change total equity, a share dividend transfers amounts out of Retained Earnings into Contributed Equity.


No. 9528.

Bank of New South Wales.

CERTIFICATE OF SHARES.

Not Transferable and Evidence only of Shares held at date hereof.

MELBOURNE, the 2nd day of Oct. 1907

We hereby Certify that Henry Butler Esq.

of Brighton Beach is the Proprietor

of Sixty seven (67) Shares of £20 each in the Capital of the

Bank of New South Wales, subject to the provisions of the Deed of Settlement of the Company.

54 Old Shares

13 New Shares dated

Manager.

Accountant.

BANK OF NEW SOUTH WALES.

Sands & McDougall Limited, Printers, Melbourne.

Share ownership certificates like this are no longer used

MAKING IT REAL

SHARE SPLIT

It would appear that in Australia companies like to keep their share price under $100; few companies' share prices have traded above this. The first was Poseidon in 1970 – its share price rose to $280 on a boom nickel price, but it soon went bust. This may go some way to explain share splits as share prices rise towards triple figures. CSL experienced a spectacular rise in its share price and in 2007 when its share price rose above $100, it split its shares in a 3-for-1 share split.

Although CSL does not have a DRP, a shareholder could purchase shares on the ASX with the dividend received. CSL pays less dividends, but one share purchased in 1994 for $2.30 would now have paid over $36 in dividends, and due to the 2007 share split you would now have three shares worth around $420. If only we could all go back in time!

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LO4 PREFERENCE SHARES

While all companies issue ordinary shares, some also issue **preference shares**, which are a form of shares that receive one or more priorities over ordinary shares. Usually, preference (or preferred) shareholders give up the right to vote in exchange for preference to dividends and preference to assets upon liquidation of the company. Preference to dividends means that preference shareholders receive their dividends before ordinary shareholders receive any dividends.

preference shares
A form of shares that receives one or more priorities over ordinary shares.

RECORDING PREFERENCE SHARES

Because it is a form of contributed equity, preference shares are recorded in the same manner as ordinary shares. To illustrate, suppose that a company issues 500 preference shares for $15 per share on 23 August. The company would record this issuance as follows:

23 Aug.	Cash	7 500	
	Preference Shares		7 500
	(To record sale of preference shares)		

Assets	=	Liabilities	+	Equity
+7 500				+7 500

This entry increases Cash by $7500, which is the amount paid by the investor and Preference Shares (Contributed Preference Equity) are increased by $7500. As a result of this entry, both assets and equity increase.

CASH DIVIDENDS ON PREFERENCE SHARES

When a company has both preference and ordinary shares issued, cash dividends must be allocated between the two. Because preference shareholders have dividend preference, they are paid first, followed by ordinary shareholders. The amount that is allocated to preference shareholders depends on the dividend rate and whether the shares are cumulative or non-cumulative.

The dividend rate refers to the annual dividend amount that preference shareholders normally receive. The rate is usually set as a dollar amount per share or as a percentage of issue price. For example, preference shares may carry a dividend of 90 cents per share or a dividend of 6 per cent of issue price.

Preference shares are either cumulative or non-cumulative. **Cumulative preference shares** carry the right to receive current-year dividends and all unpaid dividends from prior years before dividends are paid to ordinary shareholders. This means that if a company fails to pay a dividend one year, the missed dividend will be paid the next time dividends are declared. The accumulated value of unpaid prior-year dividends is called dividends in arrears. Note that **dividends in arrears** are not a liability because dividends are declared at the discretion of the board of directors and become a legal obligation only when declared. Nonetheless, because dividends in arrears are informative, they are disclosed in the notes to the financial statements.

cumulative preference shares
Shares that carry the right to receive current-year dividends and all unpaid dividends from prior years before dividends are paid to ordinary shareholders.

dividends in arrears
The accumulated value of unpaid prior-year dividends.

Non-cumulative preference shares carry the right to receive current-year dividends only. If a company does not declare a dividend in a particular year, non-cumulative preference shareholders lose the right to that annual dividend forever. As a result, a company with non-cumulative preference shares will not have dividends in arrears.

non-cumulative preference shares
Shares that carry the right to receive current-year dividends only.

To illustrate the allocation of dividends to preference and ordinary shareholders, suppose that a company has the following two types of shares:

- Ordinary shares: 100 000 shares issued.
- 5 per cent preference shares: 20 000 shares issued at $10.

Suppose further that they do not pay dividends in 2017 or 2018 but declare $64 000 of dividends in 2019. The allocation of the 2019 dividend depends on whether the preference shares are cumulative or non-cumulative.

Cumulative preference shares

If the shares are cumulative, the preference shareholders receive not only the current-year annual dividend but also the two years of dividends in arrears. The annual dividend on preference shares is 50 cents per share ($10 × 5%) and $10 000 in total ($0.50 per share × 20 000 shares). Therefore, $30 000 is allocated to preference shareholders, with the remainder going to ordinary shareholders. These calculations are illustrated as follows:

Preference shares are cumulative	Preference	Ordinary
	$10 000	
Dividends in arrears: year 2018	10 000	
Current-year preference dividend	10 000	
Distribute remainder to ordinary ($64 000 – $30 000)		$34 000
Total allocated in 2019	$30 000	$34 000

Once the allocation of dividends is calculated, they would record the declaration and payment of the dividend as follows:

Date of declaration				
	Retained Earnings		64 000	
	Ordinary Share Dividend Payable			34 000
	Preference Share Dividend Payable			30 000
	(To record declaration of dividend)			
	Assets	= Liabilities	+	Equity
		+34 000		–64 000
		+30 000		

As is the case with any cash dividend, the net overall result of the declaration and payment of the dividend is a decrease in a company's equity and its assets.

Non-cumulative preference shares

If the company's preference shares are non-cumulative, the preference shareholders receive only the current-year annual dividend. The missed dividends in 2017 and 2018 are irrelevant to the calculation for the current year. Therefore, only $10 000 is allocated to preference shareholders, with the remainder going to ordinary shareholders. These calculations are illustrated as follows:

Preference shares non-cumulative	Preference	Ordinary
Current-year preference dividend	$10 000	
Distribute remainder to ordinary shareholders ($64 000 – $10 000)		$54 000
Total allocated in 2019	$10 000	$54 000

LO5 SHARE BUYBACKS

Like any investor, a company can purchase (buy back) shares of its own in the marketplace. The practice of a company purchasing its own shares is commonplace in publicly traded companies today. One reason why a company purchases its shares is to provide a tax-effective return to some shareholders and increase future returns to the remaining shareholders. Another reason may be to acquire shares from shareholders who hold small parcels of shares, who are expensive to service and who may not know how to (or want to) incur the cost of selling through a broker. Other purchases of shares may be for an employee share scheme or a management incentive scheme. Share buybacks are usually done 'off-market' where a company offers to buy and the shareholder needs to simply sign the form and all transfer details are handled by the company. 'On-market' buybacks involve the company purchasing shares put up for sale on the ASX. For example, CSL buys the shares just like any investor; the seller, as usual, has no knowledge of who the buyer is and CSL reports to the ASX how many shares they have purchased each day. Exhibit 11.1 is the announcement of CSL's on-market share buyback.

RECORDING SHARE BUYBACKS

Apart from removing the shareholders or reducing their holdings on the share register so they no longer receive dividends (or fewer dividends if they did not sell all their shares) and have their voting rights removed or reduced, it is also necessary to reduce the shareholders' equity and the cash paid out.

In October 2016 CSL notified shareholders of its share buyback. The sale of shares (to CSL or another investor) will be attractive to some shareholders as the buyback tends to support the share price as the company is creating further demand for the shares. On-market buybacks do not have the advantage of some off-market buybacks where some current investors take advantage of the tax implications of the buyback price being a substantially 'fully franked' dividend. To illustrate, suppose that a company buys back 1000 of its own ordinary shares on 3 May when the shares are trading for $32 per share. They would record the purchase as follows:

3 May	Contributed Equity		32 000	
	Cash			32 000
	(To record share buyback)			
	Assets	= Liabilities	+	Equity
	–32 000			–32 000

APPENDIX 3C

Rule 3.8A

Announcement of buy-back (*except* minimum holding buy-back)

Information and documents given to ASX become ASX's property and may be made public.
Introduced 1/9/99. Origin: Appendix 7B. Amended 13/3/2000, 30/9/2001, 11/01/10

Name of entity	ABN/ARSN
CSL Limited	99 051 588 348

We (the entity) give ASX the following information.

Information about buy-back

1 Type of buy-back:
On-Market.

2 Class of shares/units which is the subject of the buy-back (eg, ordinary/preference):
Ordinary.

3 Voting rights (*e.g., one for one*):
One for one.

4 Fully paid/partly paid (*and if partly paid, details of how much has been paid and how much is outstanding*):
Fully paid.

5 Number of shares/units in the class on issue:
455,920,280

6 Whether shareholder/unitholder:
No approval is required for buy-back.

7 Reason for buy-back:
Ongoing capital management.

8 Any other information material to a shareholder's/unitholder's decision whether to accept the offer (*e.g., details of any proposed takeover bid*):
None, apart from any information publicly disclosed by CSL Limited (the Company) through ASX on or prior to the date of this notice.

On-market buy-back

9 Name of broker who will act on the company's behalf:
To be advised to ASX no later than the trading day prior to the date of the first trade under the buy-back.

10 Deleted 30/9/2001.

11 If the company/trust intends to buy back a maximum number of shares - that number:
Note: This requires a figure to be included, not a percentage.
Up to that number of shares for which the total buy-back consideration paid or payable is
A$500 million. The Company reserves the right to suspend or terminate the buy-back at any time.

12 If the company/trust intends to buy back shares/units within a period of time – that period of time; if the company/trust intends that the buy-back be of unlimited duration – that intention:
The Company intends to buy-back shares in the period 27 October 2016 to 25 October 2017 (inclusive) or earlier if the maximum number of shares in Item 11 above is bought back prior to that date.
The Company reserves the rights to suspend or terminate the buy-back at any time

13 If the company/trust intends to buy back shares/units if conditions are met - those conditions:
N/A.

Employee share scheme buy-back

14 Number of shares proposed to be bought back:
N/A.

15 Price to be offered for shares:
N/A.

Selective buy-back

16 Name of person or description of class of person whose shares are proposed to be bought back:
N/A.

17 Number of shares proposed to be bought back:
N/A.

18 Price to be offered for shares:
N/A.

Equal access scheme

19 Percentage of shares proposed to be bought back:
N/A.

20 Total number of shares proposed to be bought back if all offers are accepted:
N/A.

21 Price to be offered for shares:
N/A.

22 Record date for participation in offer:
Cross reference: Appendix 7A, clause 9.
N/A.

Compliance statement

1 The company is in compliance with all Corporations Act requirements relevant to this buy-back.
or, for trusts only:
1 The trust is in compliance with all requirements of the Corporations Act as modified by Class Order 07/422, and of the trust's constitution, relevant to this buy-back.
2 There is no information that the listing rules require to be disclosed that has not already been disclosed, or is not contained in, or attached to, this form.

Sign here: _____ Date: _____

(Director/Company secretary)

Print name:

EXHIBIT 11.1 CSL's 2017 share buyback notice to the Australian Securities Exchange

Source: CSL Limited 2007 *Notice of buy-back.*

CSL ANALYSIS

Look at CSL's Statement of changes in equity in Appendix B. How much was spent on share buybacks in 2016 and 2017? Where else in the Annual Report is the share buyback disclosed? How about CSL's own shares and not shares in other companies?

Analysis:

In 2016 CSL spent $670 million and in 2017 $334 million. This resulted in the negative Contributed Equity decreasing even further from ($3560.4) million at the beginning of the 2016 financial year to ($4534.3) million at the end of the 2017 financial year.

In the statement of cash flows, financing activities (discussed in Chapter 1 and in more detail in the Chapter 12) 'payment for shares bought back' is reported. The amounts are not identical because the statement of changes in equity is prepared on an accrual basis, while the statement of cash flows is obviously cash.

For the keen reader, Note 12 explains the share buyback reserve is negative because buybacks are undertaken at higher prices than the original subscription prices.

The entry decreases Contributed Equity and decreases Cash for the $32 000 paid to acquire the shares. Notice that Contributed Equity is decreased with a debit. As a result of this entry, both assets and equity decrease. Buybacks are usually made from contributed equity, but for taxation reasons frequently much of an off-market share buyback is nominated as dividend, which carries franking credits. In these cases it is likely Retained Earnings would also need to be debited. But again, this is a reduction in equity and does not appear on the income statement. The accounting standard AASB 101 *Presentation of Financial Statements* requires share buybacks to be reported in the statement of changes in equity.

MAKING IT REAL

SHARE BUYBACKS

The reference below from the Australian Taxation Office (ATO) website emphasises the importance of the tax implications of share buybacks. Buybacks often appeal to limited groups of shareholders who can take advantage of the significant proportion of the buyback price being classified as a dividend (with the resulting dividend imputation credit) and the corresponding smaller capital gain (or larger capital loss).

ATO Example: Off-market buyback including dividend[3]

Ranjini bought 10 000 shares in Company M in January 2003 at a cost of $6 per share, including brokerage.

In January 2017, the company wrote to its shareholders advising them it was offering to buy back 10 per cent of their shares for $9.60 each. The buyback price was to include a franked dividend of $1.40 per share (and each dividend was to carry a franking credit of 60c).

Ranjini applied to participate in the buyback to sell 1000 of her shares.

Company M approved the buyback on 1 May 2017, on the terms anticipated in its earlier letter to shareholders.

The market value of Company M shares at the time of the buyback (if the buyback didn't occur and was never proposed) is $10.20.

Ranjini received a cheque for $9600 (1000 shares × $9.60) on 8 June 2017.

Because it was an off-market share buyback and the buyback price was less than what the market value of the share would have been if the buyback hadn't occurred, Ranjini works out her capital gain for the 2016–17 year as follows.

Capital proceeds		
Calculations	**Per share**	**For 1000 shares**
Market value	$10.20	$10 200
Dividend	1.40	1 400
Market value minus dividend	8.80	8 800
less cost base	6.00	6 000
Capital gain (before applying any discount)	2.80	2 800

Ranjini takes her capital gain into account in completing Item 18 on her tax return. She also includes her dividend.

In 2016 when Telstra conducted its off-market buyback, the buyback price was $4.43 per share (a 14% discount to the market price), of which $1.78 per share was the capital component and $2.65 the dividend component (fully franked). The buyback was less than 3 per cent of Telstra's issued capital. Demand was so great that the highest discount was applied, and Telstra also needed to scale back the buyback for those offering to sell more than 880 shares.

Download the Enrichment Modules for further practice APPLY THIS

LO6 EVALUATING A COMPANY'S MANAGEMENT OF EQUITY

Because a company's equity represents the owners' claim on company assets, shareholders are particularly interested in a company's ability to manage its equity. Some of the issues that are important to most shareholders are as follows:

1. How does the company generate wealth for shareholders?
2. How does the company reward its shareholders through dividends?
3. How does the company's equity affect its cash flows?

The following sections examine these three issues for a hypothetical biotechnology company. The examination requires information from all four of the company's financial statements. The required information is found in Exhibit 11.2, excerpted from the company's 2020 annual

Source	Account	2020	2019
Balance sheet	Total Assets	$ 2 241	$ 1 931
	Total Equity	1 287	1 110
	Total Comprehensive Income	216	204
Income statement	Earnings per Share	2.18	2.06
	Cash Dividends Declared	40	33
Statement of changes in equity	Dividends per Share	0.40	0.33
	Ordinary Shares Issued	99	99

EXHIBIT 11.2 Account balances from a biotechnology company's 2020 annual report

report. All amounts are rounded to the closest million except the per-share data.

HORIZONTAL AND VERTICAL ANALYSES

A good place to start the analysis of shareholders' equity is horizontal and vertical analyses. Recall from Chapter 2 that horizontal analysis calculates the dollar change in an account balance, defined as the current-year balance less the prior-year balance, and divides that change by the prior-year balance to yield the percentage change. Vertical analysis divides each account balance by a base account, yielding a percentage. The base account is total assets for balance sheet accounts and net sales or total revenues for income statement accounts. These calculations are summarised as follows:

KEY FORMULA 11.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

KEY FORMULA 11.2 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance (For the balance sheet)}}{\text{Total Assets}} \text{ or } \frac{\text{Account Balance (For the income statement)}}{\text{Net Sales or Revenue}}$$

Given the biotech's financial data in Exhibit 11.2, horizontal and vertical analyses result in the following:

Horizontal analysis		
	Change	Percentage change
Total equity	1 287 − 1 110 = 177	$\frac{177}{1\,110} = 15.9\%$
Vertical analysis		
Total equity	$\frac{1\,287}{2\,241} = 57.4\%$	$\frac{1\,110}{1\,931} = 57.5\%$

The horizontal analysis reveals that total equity increased by $177 million during 2020, which is an increase of 15.9 per cent from the prior year. The vertical analysis shows that total equity as a percentage of total assets was stable at a little over 57 per cent in each year. So, while total equity increased, it stayed the same when compared to assets. Although not reported here, a closer look at specific equity accounts would reveal whether the increase in equity was due to an increase in retained earnings or contributed equity.

EARNINGS PER SHARE

The preceding analysis did not show if the biotech's total equity grew due to issuing new shares or to profitable operations. Shareholders want greater claims on assets resulting from profitable operations. Another measure of the ability to generate equity through profitable operations is **earnings per share (EPS)**. Calculating EPS is technical; so technical in fact that an accounting standard AASB 133 *Earnings per Share* has been issued and requires Australian companies to report 'basic' and 'diluted' EPS. This is more complex than we need at this level and we will stay with a simple calculation. EPS compares a company's total comprehensive income to the number of ordinary shares issued. It is calculated as follows:

earnings per share (EPS) A comparison of a company's total comprehensive income to the number of ordinary shares issued that measures the ability to generate wealth through profitable operations.

KEY FORMULA 11.3 EARNINGS PER SHARE

$$\text{Earnings per Share} = \frac{\text{Total Comprehensive Income}}{\text{Average Number of Ordinary Shares Issued}}$$

Where average ordinary shares issued is:

KEY FORMULA 11.4 AVERAGE ORDINARY SHARES OUTSTANDING

$$\frac{\text{Beginning Shares Outstanding} + \text{Ending shares Issued}}{2}$$

Earnings per share is a useful ratio because it 'standardises' earnings for a company, but because each company has a different number of issued shares it cannot be used to compare different companies, only the same company over time. The percentage change in the ratio can be used to compare the relative change in profitability of companies of vastly different sizes.

The biotech's earnings per share is calculated as follows using the information in Exhibit 11.2:

$$\frac{216}{(99 + 99) \div 2} = 2.18$$

The 2.18 ratio reveals that the biotech earned $2.18 in profit for every ordinary share issued. Is this an improvement over the previous years? For a company like BHP or the Commonwealth Bank earning billions of dollars a year, it is difficult for a shareholder to comprehend. But converting that to an EPS of $2 or $3 makes it easy to understand. As a holder of a small number of shares you can easily see if the company is earning more or less each year for you. Telstra had earnings (total comprehensive income) in 2017 of around $4 billion and an EPS of 33 cents while CSL's earnings of around $2 billion and an EPS of $3.81, reflecting the number of shares issued.

RETURN ON EQUITY

Another measure of a company's ability to generate wealth is return on equity. **Return on equity** compares a company's total comprehensive income to its average shareholders' equity and provides an indication of how well a company uses its existing equity to generate additional equity. Shareholders naturally want this ratio to be as high as possible. It is calculated as follows:

return on equity A comparison of a company's net income to average shareholders' equity that measures the ability to use existing equity to generate additional equity.

KEY FORMULA 11.5 RETURN ON EQUITY

$$\text{Return on equity} = \frac{\text{Total Comprehensive Income}}{\text{Average Shareholders' Equity}}$$

Where average shareholders' equity is:

KEY FORMULA 11.6 AVERAGE EQUITY

$$\text{Average Equity} = \frac{\text{Beginning Equity} + \text{Ending Equity}}{2}$$

The biotech's return on equity is calculated as follows from the information in Exhibit 11.2:

$$\frac{216}{(1287 + 1110)/2)} = 18.0\%$$

The 18.0 per cent ratio indicates that for every dollar of equity held during 2020, the biotech generated almost 18 cents of additional wealth through profitable operations. How does this compare to other biotechs?

DIVIDEND PAYOUT RATIO

In addition to examining how well a company generates additional equity, shareholders often examine how a company pays out that equity through dividends. One ratio to do this is the dividend payout ratio.

The **dividend payout ratio** compares a company's dividends to its earnings. The ratio demonstrates the percentage of earnings a company has decided to distribute to owners through cash dividends. The dividend payout ratio is calculated by dividing total dividends by total comprehensive income, or by dividing dividend per share by earnings per share. Either way, the result will be the same (except for small differences due to the rounding of per share values). Both calculations are as follows:

dividend payout ratio A comparison of a company's dividends to its earnings that measures the percentage of current earnings distributed to owners.

KEY FORMULA 11.7 DIVIDEND PAYOUT RATIO

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend}}{\text{Total Comprehensive Income}} \text{ or } \frac{\text{Dividend per Share}}{\text{Earning per Share}}$$

Most companies report both total and per share earnings on their income statement, total dividends on their statement of changes in equity and per-share dividends in the notes to the financial statements. These amounts are included in Exhibit 11.2 and are used to calculate the biotech's dividend payout ratio as follows:

Calculation based on totals:

$$\frac{39}{216} = 18.1\%$$

Calculation based on per share amounts:

$$\frac{0.40}{2.18} = 18.3\%$$

A ratio of 18.3 per cent (or 18.1 per cent – the difference due to rounding) indicates that for every dollar of earnings during 2020, the biotech declared about 18 cents in cash dividends. But is an 18.3 per cent ratio better or worse than a competitor with a 93.8 per cent ratio? The ratios simply reflect each company's dividend policy. For 2020, the biotech paid out more of its earnings than its competitor. Thus, shareholders who want to receive more of the profits in dividends would prefer a higher ratio. However, shareholders who want the company to plough more earnings back into operations instead of paying more dividends would prefer a low payout ratio. The problem some companies face when earnings fall and/or they wish to maintain an increasing dividend is that the payout ratio rises.

CSL ANALYSIS

Using CSL's information in Appendix B, calculate and interpret:

1 horizontal and vertical analyses of total equity
2 earnings per share
3 return on equity
4 dividend payout ratio
5 dividend yield, assuming a market price of $110 on 30 June 2016.

We can round to the closest $ million as the difference is not material.

Analysis:

1 Horizontal analysis

($3164 – $2567) / $2567 = 23.4%

Vertical analysis

$3164 / $9123= 34.7%

The 23.4 per cent horizontal analysis reflects an increase in CSL's total equity, mainly in retained earnings. The 34.7 per cent vertical analysis shows that a little over one-third of the company's assets are financed through equity.

2 Earnings per share

$1337 / 4455 = $2.94

Relying on Note 10 and using Net profits for the period the $2.94 earnings per share indicates that CSL earned $2.94 for each issued share. This ratio is higher than the previous year ($2.69) due to both an increase in net profits (+$95m) and a reduction in average issued shares (–7m). EPS information is given at the bottom of the income statement (as per AASB 133) and the detail given in Note 10. The observant student will note that the CSL and above calculation is based on Net profits. If total comprehensive income is used, EPS is $3.32, but the difference is more impressive when compared to the comprehensive income EPS calculation from the previous year of $2.26, a substantial 47 per cent increase on 2016 (9% increase in EPS based on net profits).

3 Return on equity

$1510 / ($3164 + $2567) / 2 = 52.7%

The 52.7 per cent return on equity ratio indicates that CSL earned almost 53 cents in total comprehensive income after tax for every $1 of total equity. Such a return gives the company many options. One option is to pay dividends to the owners, a second to buy back shares, while another is to retain the profits and grow the company. CSL does all three.

4 Dividend payout ratio

$601 / $1510 = 39.8% or $1.32 /$3.322.09 = 39.8%

The almost 40 per cent dividend payout ratio indicates that CSL paid to owners 40 cents for every dollar after tax it earned during the year. We can use either the total numbers or the per-share numbers; they provide the same approximate 40 per cent. It should be noted CSL provided an additional 'return' to shareholders through its $315 million share buyback.

5 Dividend yield

$1.32 / $110 = 1.2%

The 1.2 per cent dividend yield implies CSL shareholders are not chasing dividends. Telstra had a dividend yield of 7.2 per cent and CommBank was 5.1 per cent in 2017. But remember a shareholder's return is made up of dividends and capital gains or losses (increases or decreases in share price). If you look at CSL's share price between the end of June 2016 and the end of June 2017, it rose from $110 to $138. CSL was a much better investment than the dividend yield alone may indicate. This is even better if you consider the best interest rate was less than 3 per cent during this period. While dividends are often stable, no one knows what share prices will be in the future and there is the potential to make a substantial loss on shares. This is why share investment is considered higher risk than bank deposits.

DIVIDEND YIELD

In addition to knowing what percentage of earnings is paid in dividends, shareholders want to know how much their investment in a company returns to them. Shareholders generate a return on their investment in two ways: an increase in the share price and a receipt of dividends. The return from receiving dividends can be calculated with the dividend yield ratio. The **dividend yield ratio** divides dividends per share by the market price (at the beginning of the period) per share as follows:

dividend yield ratio
A comparison of dividends per share to the market price per share that measures the percentage return from dividends.

KEY FORMULA 11.8 DIVIDEND YIELD

$$\text{Dividend yield} = \frac{\text{Dividends per Share}}{\text{Market Price per Share}}$$

According to Exhibit 11.2, the biotech reports dividends per share of 40 cents on its 2020 statement of changes in equity. We will use a share price of $10, which is the closing price on the last day of the previous financial year (30 June 2020). As a result, the dividend yield reveals the return to a shareholder who bought the shares at the beginning of the financial year.

$$\frac{0.40}{10.00} = 4\%$$

The 4 per cent ratio indicates that an investment in the biotech on 30 June 2019 would yield a return from dividends equal to 4 cents for each dollar invested. This may be considered a high dividend yield for a biotechnology company which is likely to be reinvesting earnings in research and development. If these dividends were fully franked (they have the benefit of dividend imputation), they would have a before-tax return for the investor of almost 6 per cent.

SHAREHOLDERS' EQUITY AND CASH FLOWS

When examining a company's equity, it is always important to analyse how equity has been used to generate or use cash. Equity can significantly affect a company's cash through the issuance of shares, the buyback of shares and the payment of cash dividends. Each of these activities is reported in the financing activities section of the statement of cash flows.

In addition to examining the statement of cash flows, it can be beneficial to examine the notes to the financial statements to find additional information with cash flow consequences.

CSL ANALYSIS

Look at CSL's statement of cash flows in Appendix B. How much cash has the company paid in dividends and for the repurchase of shares over the past two years? How much has the DRP saved the company in cash outflows?

Analysis:

According to the financing activities section of CSL's statement of cash flows, it paid $601 million in dividends in 2017 and $579 million in 2016. It repurchased $315 million shares in 2017 and $648 million in 2016. CSL does not have a DRP.

APPLY THIS

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Corporate form of business

LO1

How does each of the following characteristics relate to the corporate form of business?

a formation/registration
b separate legal entity
c liability of owners
d ability to raise capital
e transferability of ownership
f taxation
g regulation.

2 Recording ordinary shares

LO2

Steggles Limited issued 4000 shares for $10 per share on 1 March and 7500 shares for $5 per share on 1 June.

REQUIRED

Prepare the journal entries to record the share issue.

3 Recording share transactions

LO2, 4, 5

Lucy Limited registered her company on 1 April and entered into the following equity transactions:

5 Apr. Issued 30 000 ordinary shares for $180 000.
31 May Purchased 1000 shares in a buyback for $50 000.
1 Oct. Issued 3000 preference shares for $65 per share.
31 Dec. Paid a $1 dividend on all shares.

REQUIRED

Prepare the journal entries to record the transactions.

4 Recording share transactions, instalments

LO2

Gross Limited released a prospectus seeking 100 000 ordinary shares. The prospectus required investors to pay 80 cents on application, 70 cents on allotment and a call of 60 cents. Applications for 100 000 shares were received on 1 July and the shares were allotted on 2 August. The allotment money was received on 3 September. A call was made on 4 October and the call money was received on 5 November.

REQUIRED

a Prepare the journal entries to record the above transactions.
b Assume the above information, except on 1 July applications were received for 123 000 shares. The prospectus allowed Gross to reject any application the company deemed inappropriate and to scale back other applications and apply the excess application money to allotment. Gross rejected applications for 13 000 shares, refunding the money to the applicants, and scaled back one application for 30 000 shares to 20 000 shares, applying the excess application money to allotment.
c Prepare the journal entries to record the receipt of the application money, the refund, the issue of shares and the receipt of the allotment money for the above transactions.

5 Recording forfeiture and reissue of shares

LO2

Given the information in Question 4, assume when the call was made a shareholder of 2000 shares did not pay the call. In accordance with the prospectus the shareholder forfeited the shares and the company reissued the shares at a 20 cent per share discount.

REQUIRED

Prepare the journal entries to record that the call money was not received the forfeiture of the shares and the reissue of the 2000 shares.

6 Share terminologies

LO2, 5

The shareholders' equity section of Ma Company's balance sheet follows:

Equity	
Contributed equity	$4 020 000
Retained equity	1 425 000
Total shareholders' equity	5 445 000
Note 11 Contributed equity	
Number of ordinary shares	450 000

REQUIRED

a How many ordinary shares are issued?
b How much in total equity has Ma received from the issue of shares?
c What was the opening balance in retained earnings if during the year Ma had total comprehensive income of $1 191 000 and declared dividends of $666 000?

7 Cash dividends

LO3

On 15 December Taylor Limited declared a cash dividend of $1.5477 per share to be paid on 15 January to shareholders of record on 31 December. Taylor has 77 million ordinary shares issued.

REQUIRED

Identify the date of declaration, the date of record and the payment date. Prepare journal entries on those dates as appropriate. Explain why no journal entry is required on one of the dates.

8 Cash dividends

LO3, 4

Chen Company declares a $90 000 dividend. Chen has 80 000 ordinary shares issued. Chen's 20 000 preference shares are cumulative, 5 per cent and had a $12 per share issue price. Chen has not paid dividends in the past three years.

REQUIRED

a Determine how the $90 000 in dividends should be allocated to preference and ordinary shareholders.
b Prepare the journal entry that would be recorded on the declaration date.
c Determine how the $90 000 in dividends should be allocated to preference and ordinary shareholders, assuming that the preference shares are non-cumulative.

9 Share dividends

LO3

Maxfield Manufacturing declared a share dividend of $1.50 per share on 1 July to be distributed on 1 August to shareholders of record on 15 July. On 1 July, Maxfield has 250 000 issued and paid-up ordinary shares. Maxfield's shares are trading at $15 per share on 1 July.

REQUIRED

a Prepare all necessary journal entries to record the share dividend.

b Show your calculations in determining how many shares would the holder of 1000 shares expect to receive in the share dividend?

10 Share dividends versus share splits

LO3

Chan Limited is looking to increase its number of issued shares to bring down its current share price of $11. The board of directors is trying to decide if a 2-for-1 share split or a 100 per cent (or one-for-one) share dividend is more appropriate. Chan's equity is as follows (all figures in millions):

Contributed equity (430 000 shares)	$ 860 000
Retained earnings	7 775 000
Total shareholders' equity	$8 635 000

REQUIRED

a Assess the advantages and disadvantages of the share split versus the share dividend.

b Create a new equity section based on Chan choosing (i) a share dividend or (ii) a share split.

11 Preference shares and preference dividends

LO4

The shareholders' equity section of Restaurant Electronics Limited's balance sheet shows:

Ordinary shares (190 000 shares issued)	$1 440 000
Preference shares (cumulative, 28c annual dividend, 150 000 shares issued)	600 000

The company paid dividends up to and including 2018, but no dividends in 2019.

REQUIRED

a Calculate the dividend on the ordinary and preference shares in 2020 if total dividends are $559 000.

b Prepare the journal entry to record the above dividend transactions if the dividends were declared on 8/8/20 and paid on 10/10/20.

12 Share buyback

LO5

On 15 January, Capital Company purchased on market 10 000 shares of its own ordinary shares when the shares were trading at $45.

REQUIRED

Prepare the journal entry to record the share buyback.

13 Evaluate equity

LO6

The following is selected financial information for Lee Ltd:

(in millions)	2020	2019
Average ordinary shareholders' equity	$3 430.5	$2 921.6
Dividends declared on ordinary shares	125.5	104.3
Total comprehensive income after tax	775.9	691.4

REQUIRED

a Calculate the return on equity for Lee for 2020 and 2019.

b Calculate the dividend payout ratio for both years.

c Compare the financial performance for the two years and comment on which year was more successful based on these measures and possible reasons why.

14 Evaluate equity

LO6

Laura Limited is trying to calculate different financial measures to analyse its performance. The total comprehensive income for the year was $80 million. There are 150 million shares issued.

REQUIRED

a Calculate earnings per share (EPS) for the year.

b What does the EPS indicate about the company's financial performance? What could the EPS be compared to, what could it not be compared to? Why?

c What might the company do to improve this financial measure?

15 Evaluate equity

LO6

The following is from the financial statements of Bond Boomerangs from the last two years:

	2021	2020
Total assets	$1 685	$1 730
Total liabilities	900	875
Total shareholders' equity	785	855

REQUIRED

Conduct a horizontal analysis, and vertical analysis for both years.

16 Evaluate equity

LO6

Beatson Boutiques provided the following information from its financial statements:

Total comprehensive income	$164 500
Average number of ordinary shares	235 000
Average shareholders' equity	576 000

REQUIRED

Calculate the earnings per share and return on equity for Beatson Boutiques. How are the two profitability ratios different?

PROBLEMS

17 Recording and reporting equity

LO2, 3, 5, 6

Czernkowski Company had the following balances in its shareholders' equity at 1 January:

Contributed equity (450 0000 ordinary shares)	$2 100 000
Retained earnings	2 225 000

During the year, Czernkowski had the following transactions:

1 Mar. Issued 200 000 ordinary shares for cash at $8 per share.

1 Jul. Declared a 1 for 10 share dividend, payable 1 August. The shares were trading at $7 per share on 1 July.

15 Aug. Declared a 50 cent per share cash dividend of record on 1 September, payable 15 September.

1 Oct. Bought back 6000 ordinary shares for $45 000.

31 Dec. Revenue for the year $1 620 000, expenses for the year $1 100 000.

REQUIRED

a Prepare the journal entries to record the transactions.

b Prepare Czernkowski's 31 December shareholders' equity section of the balance sheet.

c Calculate earnings per share for the year.

18 Issuing shares: instalments, oversubscription, forfeiture and reissue

LO2, 3

The following information is available for Liu Limited for 2019:

1 January Liu Limited was registered as a new company.

1 February A prospectus was issued inviting applications for 900 000 ordinary shares at $1 per share. The prospectus specified 50 cents payable on application, 30 cents on allotment and the 20 cents balance when called.

1 March Applications were received for 1 400 000 shares.

1 April Directors accepted applications for 700 000 shares and allocated those shares. As per the provision of the prospectus, applications for 300 000 shares were scaled back and allocated 200 000 shares (with the excess application money applied to allotment) and the directors rejected applications for 400 000 shares and refunded the money to the applicants.

1 May All allotment money due was received.

1 June The call was made for the remaining outstanding money.

1 July All call money except that owing on 40 000 shares was received.

1 August The shareholders who did not pay their call had their shares forfeited.

1 September The forfeited shares were reissued at a 5 cent per share discount.

REQUIRED

Prepare the journal entries to record the above transactions.

19 Evaluating equity

LO6

The following are financial measures from the financial statements of Browning Brothers for the past two years:

	This year	Last year
Total assets	$4 255 350	$3 895 700
Total liabilities	2 050 150	1 980 300
Total shareholders' equity	2 205 200	1 915 400

REQUIRED

a Conduct a horizontal analysis of Browning Brothers. Comment on your findings and possible reasons for these findings.

b Conduct a vertical analysis for both years for Browning Brothers. Compare and briefly interpret the results of the two years.

20 Evaluating equity

LO6

Olson Outlet is trying to determine if its equity is comparable to other outlets in the area.

	2021	2020
Total assets	$1 374 000	$1 506 000
Total liabilities	588 000	732 000
Total equity	786 000	774 000
Total comprehensive income	198 500	
Average number of ordinary shares issued	266 000	
Average equity	780 000	
Market price of shares	21	
Total dividends	59 000	
Dividends per share		0.25

REQUIRED

a Conduct horizontal and vertical analyses for Olson.

b Calculate the earnings per share and return on equity.

c Calculate the dividend payout ratio and the dividend yield.

CASES

21 Research and analysis

LO2, 3, 5, 6

Access the latest annual report for a public company of your lecturer's choosing.

REQUIRED

a Examine the company's balance sheet and conduct horizontal and vertical analyses of the company's total (shareholders') equity.

b Calculate the company's return on equity ratio. Using the dividend and price data from the ASX website (or a financial services website), calculate the company's dividend yield, assuming that an investor purchased the shares on the last day of the previous financial year.

c Examine the company's statement of retained earnings and determine the value of share dividends declared during the financial year.

d Examine the financing activities section of the company's cash flow statement. How would you characterise the company's activity over the past two years?

e Based on your answers above, write a paragraph explaining your opinion of the company's position. Use your answers as supporting facts.

22 Raising the money to expand a business

LO1, 2

Lara Steele is an entrepreneur and owner of 'Wood by Steele', a sole proprietorship. The business, which manufactures tables, chairs, cabinets and other furniture from recycling wooden fences, is growing, and Lara is exploring the idea of purchasing a brand-new manufacturing facility. Because she does not have the money to do so, she believes her options are to borrow the money or to convert the business to a corporation and sell shares.

REQUIRED

Describe the alternatives available to Lara. Which alternative would you consider best? Make sure to explain the advantages and disadvantages of the course of action that you recommend.

23 Ordinary or preference shares, investors' perspective

LO1, 4

A friend has emailed you to ask for some investing advice. She is considering buying shares in a certain company and is trying to determine whether she wants to invest in the company's ordinary or preference shares.

REQUIRED

Draft an email to your friend explaining the similarities and differences between ordinary and preference shares. Include reasons why you feel one might be preferable.

24 Ethics

Explain the advantages and disadvantages of investing (buying shares, becoming a shareholder) in companies. Beyond seeking financial return, what other matters might you consider when choosing companies to invest in?

12

Statement of cash flows

As discussed in Chapter 1, the statement of cash flows provides information on how a company generates and distributes cash over a period of time. This chapter examines the purpose and format of the statement of cash flows and demonstrates how the statement is prepared. Emphasis is given to the two approaches to preparing the operating section. The chapter concludes with an analysis of how to use the statement to generate useful information about a company and its cash. Guidance is provided by AASB 107 Statement of Cash Flows.

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Describe the purpose and format of the statement of cash flows.
2. Understand the process of preparing the statement of cash flows.
3. Prepare the operating activities section of the statement of cash flows using the direct method.
4. Prepare the operating activities section of the statement of cash flows using the indirect method.
5. Outline the investing activities section of the statement of cash flows.
6. Summarise the financing activities section of the statement of cash flows.
7. Evaluate the statement of cash flows through the calculation and interpretation of ratio analyses.

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LO1 THE STATEMENT OF CASH FLOWS

One of the most important resources of any company is cash. If a company cannot generate sufficient cash, its ability to continue operations is significantly limited. As a result, management, investors and creditors want to know how a company is managing its cash. How does the company spend its cash? How does it generate cash? What are the prospects of the company paying a cash dividend? Will the company be able to satisfy its upcoming interest and loan obligations? Does the company have enough cash to expand its research facilities? Answers to these and other questions can be found through an examination of the statement of cash flows.

The **statement of cash flows** is a financial statement that summarises a company's inflows and outflows of cash over a period of time. Its purpose is to inform users on how and why a company's cash changed during the period. So that it is as informative as possible, the statement groups and reports cash flows in three major categories: operating, investing and financing. Cash flows from each of the three categories are then combined to determine the company's net change in cash and cash equivalents. This net change will be equal to the difference between the beginning and ending cash and cash equivalents balances from the balance sheet (statement of financial position). Note that from this point forward, the term *cash* will be used to represent cash and cash equivalents.

statement of cash flows A financial statement that summarises a company's inflows and outflows of cash over a period of time with a purpose to inform users on how and why a company's cash changed during the period.

The basic structure of the statement of cash flows is as follows:

+ / – Cash Flows Provided (Used) by Operating Activities
+ / – Cash Flows Provided (Used) by Investing Activities
+ / – Cash Flows Provided (Used) by Financing Activities
= Net Increase (Decrease) in Cash
+ Cash, Beginning of Year
= Cash, End of Year

One of the keys to success for a company like CSL is to convert its products (medicines) into cash

The following sections discuss the three groupings of cash flows. For illustration purposes, Exhibit 12.1 contains CSL's statement of cash flows for the year ending 30 June 2017. All dollar amounts are in US millions.

APPLY THIS **Check out the video summary for Chapter 12**

CASH FLOWS FROM OPERATING ACTIVITIES

cash flows provided (used) by operating activities Cash inflows and outflows arising from the company's operations; sometimes called operating cash flows.

Cash flows provided (used) by operating activities are those cash inflows and outflows arising from the company's operations. These inflows and outflows are sometimes called operating cash flows and would include the following:

- cash inflows from collection of receivables and cash sales or services
- cash outflows for operating items such as payments to creditors, salaries and rent paid and tax paid.

Basically, any cash flow associated with a company's revenues or expenses should be considered an operating cash flow. Because of this, the net cash flow from operating activities can be thought of as net profit or loss on a cash basis. CSL in 2017 reports a 'Net cash inflow from operating activity' of $1246.6 million, up over 5 per cent on 2016.

Operating cash flows are reported first on the statement of cash flows. Like most companies, CSL reports operating cash flows using the direct method. AASB 107 allows the indirect method but encourages entities 'to report cash flows from operating activities using the direct method'.[1] The indirect method calculates operating cash flows by adjusting profit or loss from an accrual basis to a cash basis. This calculation will be demonstrated later. In Australia when reporting entities use the direct method they are required to disclose a reconciliation of cash flows from operating activities to profit or loss, which is similar to the calculation of cash flows from operations used for the indirect method. CSL's reconciliation is in Note 14, reproduced in Exhibit 12.2.

CASH FLOWS FROM INVESTING ACTIVITIES

cash flows provided (used) by investing activities Cash inflows and outflows arising from the acquisition and disposal of non-current assets; often called investing cash flows.

Cash flows provided (used) by investing activities are those cash inflows and outflows arising from the acquisition and disposal of non-current assets. They are often called investing cash flows and would include the following:

- cash inflows from the sale of property, plant, equipment or investments
- cash outflows for the purchase of property, plant, equipment or investments.

Investing cash flows are reported after operating activities. Exhibit 12.1 reveals CSL had net cash outflows from investing activities of $862.9 million in 2017. The main contributor to that total in both years was payments for property, plant and equipment (PPE).

CASH FLOWS FROM FINANCING ACTIVITIES

cash flows provided (used) by financing activities Cash inflows and outflows associated with the generation and return of capital; often called financing cash flows.

Cash flows provided (used) by financing activities are those cash inflows and outflows associated with the generation and return of capital. These are often called financing cash flows and would include the following:

- cash inflows from borrowings or share issues
- cash outflows to satisfy debt obligations or to repurchase shares
- cash outflows for dividends to shareholders.

Basically, any cash flows associated with non-current liabilities or equity (other than interest payments) are considered to be financing cash flows.

CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 30 JUNE 2017

	Consolidated Entity	
	2017 US$m	2016 US$m
Cash flows from Operating Activities		
Receipts from customers (inclusive of goods and services tax)	**6,749.2**	5,982.7
Payments to suppliers and employees (inclusive of goods and services tax)	**(4,946.9)**	(4,417.0)
	1,802.3	1,565.7
Income taxes paid	**(468.3)**	(326.2)
Interest received	**6.7**	14.1
Borrowing costs	**(94.1)**	(75.0)
Net cash inflow from operating activities	**1,246.6**	1,178.6
Cash flows from Investing Activities		
Proceeds from sale of property, plant and equipment	**0.1**	0.1
Payments for property, plant and equipment	**(689.1)**	(495.1)
Payments for intangible assets	**(171.5)**	(70.6)
Payments for business acquisition (Net of cash acquired)	**-**	(244.6)
(Payments)/receipts from other financial assets	**(2.4)**	0.1
Net cash outflow from investing activities	**(862.9)**	(810.1)
Cash flows from Financing Activities		
Proceeds from issue of shares	**12.7**	17.4
Dividends paid	**(601.4)**	(579.0)
Proceeds from borrowings	**1,381.4**	1,564.3
Repayment of borrowings	**(581.3)**	(716.9)
Payment for shares bought back	**(314.9)**	(648.2)
Net cash outflow from financing activities	**(103.5)**	(362.4)
Net increase in cash and cash equivalents	**280.2**	6.1
Cash and cash equivalents at the beginning of the financial year	**555.3**	555.5
Exchange rate variations on foreign cash and cash equivalent balances	**7.5**	(6.3)
Cash and cash equivalents at the end of the financial year	**843.0**	555.3

The consolidated statement of cash flows should be read in conjunction with the accompanying notes.

EXHIBIT 12.1 CSL's Statement of cash flows 2017

Source: CSL Limited, *Annual Report 2017*, p. 84.

Financing cash flows are reported after investing cash flows. Exhibit 12.1 reveals CSL had net cash outflows from financing activities in 2017 of $103.5 million, due to dividends paid, repayment of borrowings and payments for shares bought back. In both 2017 and 2016 CSL borrowed around $1.5 billion but repaid almost half the borrowings.

NET INCREASE (DECREASE) IN CASH

After a company reports its operating, investing and financing cash flows, it sums the three and reconciles the company's beginning and ending cash balances. The following is a condensed version of CSL's Statement of cash flows, showing only the major subtotals:

EFFICIENCY OF OPERATION

Note 14:
Cash and Cash Equivalents, Cash Flows

	2017 US$m	2016 US$m
Reconciliation of cash and cash equivalents		
Cash at bank and on hand	**562.7**	442.0
Cash deposits	**281.8**	114.6
Less bank overdrafts	**(1.5)**	(1.3)
Total cash and cash equivalents	**843.0**	555.3
Reconciliation of Profit after tax to Cash Flows from Operations		
Profit after tax	**1,337.4**	1,242.4
Non-cash items in profit after tax:		
Depreciation, amortisation and impairment charges	**279.2**	220.3
Loss on disposal of property, plant and equipment	**8.7**	2.3
Gain/(loss) on acquisition	**-**	(176.1)
Share-based payments expense	**12.2**	6.1
Changes in assets and liabilities:		
Increase in trade and other receivables	**(72.5)**	(45.3)
Increase in inventories	**(389.2)**	(216.5)
(Increase)/decrease in retirement benefit assets	**(0.4)**	2.3
Increase in net tax assets	**(111.0)**	(12.7)
Increase in trade and other payables	**153.9**	116.0
(Decrease)/increase in deferred government grants	**(0.6)**	4.5
Increase in provisions	**21.4**	19.7
Increase in retirement benefit liabilities	**7.5**	15.6
Net cash inflow from operating activities	**1,246.6**	1,178.6
Non-cash financing activities		
Acquisition of plant and equipment by means of finance leases	**4.0**	3.2

EXHIBIT 12.2 CSL's Reconciliation of Profit after tax to Cash Flows from Operations

Source: CSL Limited, *Annual Report 2017*, Note 14: Cash and Cash Equivalents, Cash Flows, p. 108.

CSL's condensed statement of cash flows	2017	2016
Cash and cash equivalents at the beginning of the financial year	$ 555.3	$ 555.5
Net cash provided by operating activities	1 246.6	1 178.6
Net cash used in investing activities	(862.9)	(810.1)
Net cash used in financing activities	(103.5)	(362.4)
Exchange rate variation on foreign cash [not important]	7.5	(6.3)
Cash and cash equivalents at the end of the financial year	843.0	555.3

CSL, *Annual Report 2017*, p. 84.

In 2017 CSL showed a substantial increase in cash. This increase consisted of the sum of operating, investing and financing cash flows. In the statement of cash flows the cash and cash equivalents are shown 'net of bank overdraft'. In the balance sheet the cash figures are a little over one million higher as we do not subtract the overdraft (part of interest bearing current liabilities) from the current asset cash.

ADDITIONAL DISCLOSURES

All reporting entities prepare a statement of cash flows using a format similar to what has been described. In addition, as required by AASB 107:

Investing and financing transactions that do not require the use of cash or cash equivalents shall be excluded from a statement of cash flows. Such transactions shall be disclosed elsewhere in the financial statements in a way that provides all the relevant information about these investing and financing activities.[2]

In Note 14 CSL reports 'non-cash financing activities – acquisition of plant and equipment by means of finance leases' of $4.0 million 2017, $3.2 million 2016.

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Review this content with the e-lecture

LO2 PREPARING THE STATEMENT OF CASH FLOWS

Chapter 4 discussed the preparation of the statement of comprehensive income, the statement of changes in equity and the balance sheet. Each of these statements is prepared with numbers from an adjusted trial balance. That is, they are prepared by rearranging numbers already provided by the accounting system (trial balance).

The preparation of the statement of cash flows is different. First, information is collected from a variety of sources. Second, preparing the statement requires an examination of the changes in all non-cash accounts. To understand why, consider the fundamental accounting equation:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

Cash can be isolated by breaking it out from other assets to yield the following:

$$\text{Cash} + \text{Non-Cash Assets} = \text{Liabilities} + \text{Equity}$$

Moving non-cash assets from the left side of the equation to the right side then results in the following:

$$\text{Cash} = \text{Liabilities} + \text{Equity} - \text{Non-Cash Assets}$$

Using Δ to denote a change, this equation can also be rewritten to show that the change in cash for a given period is equal to the changes in all other non-cash accounts (liabilities, equity and non-cash assets):

$$\Delta\text{ Cash} = \Delta\text{ Liabilities} + \Delta\text{ Equity} - \Delta\text{ Non-Cash Assets}$$

As a result, to explain a company's change in cash, you must explain the changes in the company's non-cash accounts. And to do that, you need the following three items:

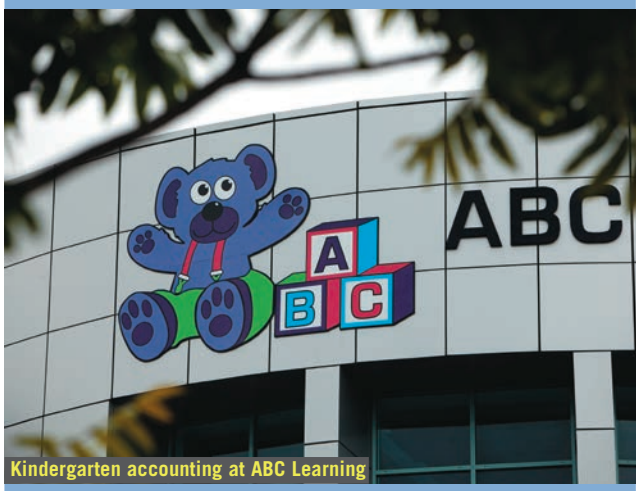
- a comparative balance sheet
- an income statement
- additional information on changes in account balances.

A comparative balance sheet provides the beginning and ending balances of all accounts, but of interest now are the non-cash accounts, from which changes for the period are calculated. A statement of comprehensive income provides a company's revenue and expense balances for the period. These balances are used to prepare the operating activities section of the statement of cash flows. Additional information on changes in account balances is needed to determine if a balance changed because of non-cash activity. For example, the issue of shares to satisfy a debt obligation changes both equity and liability balances, but cash is not affected. Knowledge of such significant non-cash transactions

MAKING IT REAL

ABC LEARNING (OR NOT LEARNING)

Companies cannot function without adequate cash. Therefore, the statement of cash flows is of special interest to stakeholders such as investors and creditors who must determine if the company has the ability to continue operations. The statement of cash flows informs financial statement users on how cash was used and generated during a period.



Fairfax Syndication/Robert Rough

Kindergarten accounting at ABC Learning

During the April 2010 Federal Court public examination of ABC Learning, which went into receivership in November 2008, the court was told that Goldman Sachs had warned the board in April 2008 that without new funding ABC Learning would run out of cash in two months. The cash was required for short-term cash flow requirements and to avoid breaching loan agreements with its bankers. To raise cash, ABC Learning urgently sold over half its US operations to a private equity fund. The treasurer of ABC Learning at the time emailed the CFO, saying the Australian operations were hounding him for money and he needed $20 million from its UK subsidiary held in a Scottish bank. There was a problem because part of the money was held in trust for prepaid childcare. So desperate was the Australian operation for cash, it negotiated that the money be sent as a loan. The court was told the founder and Chief Executive Officer, Mr Groves, began slowing payments to ABC's creditors including the Australian Taxation Office, ABC's auditors, lawyers and accountants.

keeps one from erroneously concluding that the company received cash for the issue of shares and paid cash for the retirement of the debt.

DIRECT AND INDIRECT METHODS FOR OPERATING CASH FLOWS

When preparing the statement of cash flows, all companies report cash flows from operating, investing and financing activities. The manner in which cash flows from investing and financing activities are reported is the same for all companies. However, companies can report their cash flows from operating activities using one of two methods:

- the direct method
- the indirect method.

direct method Method of reporting cash flows from operating activities in which cash inflows and outflows from operations are reported separately on the statement of cash flows.

Under the **direct method**, a company calculates and reports its cash inflows from operations followed by its cash outflows for operations. Typically, cash inflows come from cash sales (or cash received from services paid in cash) and collections of accounts receivables, but are often reported as one figure. Cash outflows are broken out into a few categories including cash payments for: inventory, operating expenses, and interest and tax. The difference between inflows and outflows is the company's net cash flow from operating activities. The method is called 'direct' because both inflows and outflows are shown directly on the statement.

indirect method Method of reporting cash flows from operating activities in which net income is adjusted from an accrual basis to a cash basis.

Under the **indirect method**, a company reports its cash flows from operating activities by adjusting its net income from an accrual basis to a cash basis. The method is called 'indirect' because it does not directly report cash inflows and cash outflows from operations. Rather, it reports the adjustments necessary to convert net income (profit or loss) to the net cash flow from operating activities. Adjustments typically arise from non-cash revenues and expenses (gains and losses) and/or changes in current assets and current liabilities.

Both the indirect and direct methods will yield the same net cash flows from operating activities. The only difference between the methods is the manner in which cash flows are reported. Because the Australian accounting standards require companies that use the direct method to also disclose the reconciliation of cash flows from operations to net profit, we concentrate on the indirect method, which calculates cash flow from operations in the same way as the reconciliation is prepared.

EXAMPLE DATA

To demonstrate how to prepare a statement of cash flows, the information for a hypothetical company in Exhibit 12.3 will be used. Note that the Sunshine Company provides both a statement of comprehensive income and a comparative balance sheet and that all numbers are in millions, but for simplicity, references to the millions will be omitted in the discussions. Additional information will be provided as needed.

The Sunshine Company
Income statement for year ended 30 June 2020
(in millions)

Sales		$432
Cost of goods sold		281
Gross profit		$151
Expenses:		
Depreciation expense	$25	
Insurance expense	14	
Salaries expense	63	
Electricity expense	28	130
Profits before tax		$ 21
Income tax expense		8
Gain on sale of equipment		$ 1
Total comprehensive income		$ 14

The Sunshine Company
Comparative balance sheet as at 30 June 2020

	2020	2019
Cash and cash equivalents	$ 18	$ 45
Accounts receivable	45	41
Inventory	101	92
Prepaid insurance	11	15
Total current assets	$175	$193
Investments	22	0
Property and equipment, at cost	232	166
Less: Accumulated depreciation	(57)	(37)
Total assets	$372	$322
Accounts payable	$ 37	$ 29
Salaries payable	21	21
Electricity payable	27	22
Taxes payable	0	7
Total current liabilities	$ 85	$ 79
Non-current liabilities	45	0
Total liabilities	$130	$ 79
Contributed equity	$155	$165
Retained earnings	87	78
Total equity	$242	$243
Total liabilities and equity	$372	$322

EXHIBIT 12.3 The Sunshine Company financial statements

LO3 REPORTING CASH FLOWS FROM OPERATING ACTIVITIES: DIRECT METHOD

This section demonstrates the calculation of cash flows from operating activities under the direct method.

Great products are only useful if you can receive the cash from customers

When reporting operating cash flows under the direct method, companies calculate and report cash receipts from operating activities and cash payments for operating activities. Cash receipts are calculated by converting revenues from the statement of comprehensive income to cash collections. Cash payments are calculated by converting expenses to cash payments.

The following sections demonstrate this conversion process. The first section considers cash receipts from customers. The next sections consider cash payments in three main groups: cash paid for inventory, for operating expenses and for income taxes. For each calculation, two approaches are demonstrated – one focusing on the changes in account balances and another using a debit/credit approach.

CASH RECEIVED FROM CUSTOMERS

The Sunshine Company's statement of comprehensive income shows that the company generated $432 in sales during the year. To determine cash receipts from those sales, the balance sheet account related to sales – accounts receivable – must be examined.

Sunshine's balance sheet shows that accounts receivable increased $4 during the year. The Accounts Receivable account increases when sales are made but no cash is collected. Therefore, a $4 increase means that $4 of its $432 of sales were not collected during the year. Therefore, cash collections were $428.

Sales for the period	$432
Less: Increase in accounts receivable	4
Cash collected from sales	$428

Note that had Sunshine's accounts receivable decreased during the year, the decrease would have been added to sales.

The conversion of sales to cash collections can be summarised as follows:

Balance from statement of comprehensive income	Adjustment	Balance for statement of cash flows
Sales	– Increase in accounts receivable or + Decrease in accounts receivable	= Cash collected from sales

A second approach for calculating cash receipts from sales is to prepare the journal entry that Sunshine would hypothetically make if it recorded its annual sales and the change in receivables in only one entry.

Given sales of $432, Sunshine would credit Sales for $432. It would also debit Accounts Receivable for $4 to reflect the increase in the account. To balance the entry, it would debit Cash for $428. Thus, cash collections from sales are $428.

Hypothetical entry	Accounts Receivable	4	
	Cash	428	
	Sales		432

CASH PAID FOR INVENTORY

Sunshine shows $281 of cost of goods sold during the year. To convert this expense to cash paid for inventory, it must first calculate total purchases for the period and then calculate the cash paid for those purchases.

To calculate purchases, Sunshine must examine the inventory account. Inventory increased by $9 during the year. An increase in inventory means that it bought more inventory than it sold. Therefore, it must have purchased $290 of inventory during the year.

Inventory sold during the period	$281
Plus: Increase in inventory	9
Inventory purchased during the period	$290

Note that had Sunshine's inventory decreased during the year, the decrease would have been subtracted from inventory to calculate purchases.

Balance from statement of comprehensive income	Adjustment		Adjustment	Balance for statement of cash flows
Cost of goods sold	+ Increase in inventory or – Decrease in inventory	= Purchases	– Increase in accounts payable or + Decrease in accounts payable	= Cash paid for inventory

To calculate cash paid for these purchases, Sunshine must examine accounts payable. Accounts payable increased $8 during the year. The accounts payable account increases when purchases are made but no cash is paid. Therefore, it must have paid for only $282 of its $290 in purchases.

Inventory purchased during the period	$290
Less: Increase in accounts payable	8
Cash paid to suppliers for the period	$282

Note that had Sunshine's accounts payable decreased during the year, the decrease would have been added to purchases to calculate cash paid.

The conversion of cost of goods sold to cash paid for inventory can be summarised as shown in the following table.

Cash paid for inventory can also be determined by preparing the entry that Sunshine would hypothetically make to record the activity in the Cost of Goods Sold, Inventory and Accounts Payable accounts.

Given cost of goods sold of $281, Sunshine would debit Cost of Goods Sold for $281. It would also debit Inventory $9 for its increase during the year and credit Accounts Payable $8 for its increase during the year. To balance the entry, it would credit Cash for $282. Thus, cash paid for inventory is $282.

Hypothetical entry	Cost of Goods Sold	281	
	Inventory	9	
	Accounts Payable		8
	Cash		282

CASH PAID FOR OPERATING EXPENSES

Sunshine's statement of comprehensive income shows several operating expenses. The following sections demonstrate how operating expenses are converted to cash paid. The first section illustrates an expense related to a current asset. The second section illustrates two expenses relating to current liabilities.

Insurance expense

Sunshine's Statement of comprehensive income shows $14 of insurance expense during the year. To determine the cash paid for insurance, the related balance sheet – prepaid insurance – must be examined.

Prepaid insurance decreased $4, meaning that Sunshine used $4 of insurance it had purchased in a previous period. As a result, cash paid for insurance in the current period was only $10.

Insurance expense for the period	$14
Less: Decrease in prepaid insurance	4
Cash paid for insurance	$10

Note that had Sunshine's prepaid insurance increased during the year, the increase would have been added to insurance expense.

The conversion of insurance expense to cash paid for insurance is summarised in the following table:

Balance from statement of comprehensive income	Adjustment	Balance for statement of cash flows
Insurance expense	+ Increase in prepaid insurance or – Decrease in prepaid insurance	= Cash paid for insurance

Using the entry approach to calculate cash payments for insurance, Sunshine would debit Insurance Expense for $14 and credit Prepaid Insurance for $4. Cash would then be credited to balance the entry, showing cash payments for insurance to be $10.

Hypothetical entry	Insurance Expense	14	
	Prepaid Insurance		4
	Cash		10

Salaries expense and electricity expense

Sunshine shows $63 of salaries expense and $28 of electricity expense during the year. To determine the cash paid for these operating expenses, the related accounts – Salaries Payable and Electricity Payable – must be examined.

Salaries payable did not change during the year, so it must have paid exactly $63 to employees.

Salaries expense for the period	$63
Change in salaries payable	0
Cash paid to employees	$63

Electricity Payable increased $5 during the year, meaning that Sunshine used electricity during the year for

which it did not pay. Therefore, it paid only $23 for electricity during the year.

Electricity expense for the period	$28
Less: Increase in electricity payable	5
Cash paid for electricity	$23

Note that had Sunshine's electricity payable decreased during the year, the decrease would have been added to electricity expense.

The conversion of these operating expenses to cash paid for salaries and electricity can be summarised as follows:

Balance from statement of comprehensive income	Adjustment	Balance for statement of cash flows
Salaries expense	– Increase in salaries payable or + Decrease in salaries payable	= Cash paid for salaries
Electricity expense	– Increase in electricity payable or + Decrease in electricity payable	= Cash paid for electricity

Using the entry approach to calculate the cash payments for salaries, Sunshine would debit Salaries Expense for $63. Nothing is recorded for Salaries Payable because the account balance was unchanged. Cash is then credited to balance the entry, showing cash payments to be $63.

Hypothetical entry	Insurance Expense	63	
	Cash		63

For electricity, Sunshine would debit Electricity Expense for $28 and credit Electricity Payable for $5. Cash would be credited to balance the entry, showing cash payments to be $23.

Hypothetical entry	Electricity Expense	28	
	Electricity Payable		5
	Cash		23

CASH PAID FOR TAXES

Sunshine's statement of comprehensive income shows $8 of income tax expense during the year. To determine the cash paid for taxes, the related balance sheet account – taxes payable – must be examined.

Taxes payable decreased $7 during the year, meaning that Sunshine paid not only current-year taxes of $8, but also $7 of prior-year taxes. Thus, taxes paid in this period were $15.

Income tax expense for the period	$ 8
Plus: Decrease in taxes payable	7
Cash paid for taxes	$15

Note that had the taxes payable increased during the year, the increase would have been subtracted from income tax expense.

The conversion of income tax expense to cash paid for taxes is summarised in the following table:

Balance from statement of comprehensive income	Adjustment	Balance for statement of cash flows
Income tax expense	– Increase in taxes payable or + Decrease in taxes payable	= Cash paid for taxes

To calculate cash payments using the entry method, Sunshine would debit Income Tax Expense for $8 and debit Taxes Payable for $7. Cash would be credited to balance the entry, showing cash payments to be $15.

Hypothetical entry	Income Tax Expense	8	
	Taxes Payable	7	
	Cash		15

OTHER REVENUES AND EXPENSES

Sunshine's Statement of comprehensive income contains two additional items: depreciation expense and gain on sale of equipment. For the following reasons, these items are ignored under the direct method.

Recall from Chapter 8 that depreciation expense is a non-cash charge, meaning that cash is not affected when depreciation is recorded. As a result, depreciation expense is not included when preparing the operating activities section under the direct method. This is always the case.

Recall also from Chapter 8 that a gain on the sale of equipment occurs when cash received from the sale exceeds the equipment's carrying value. Because the sale of equipment is an investing activity, all cash received from the sale will be reported as a cash inflow from investing activities. As a result, the gain on the sale is not included when preparing the operating activities section under the direct method. The same would be true for a loss on the sale of equipment.

NET OPERATING CASH FLOWS

Based on the previous calculations, Sunshine's operating activities section of its statement of cash flows is shown in Exhibit 12.4. A summary of adjustments used to generate the numbers is found in Exhibit 12.5.

The Sunshine Company		
Cash flows from operating activities		**2020**
Cash receipts from customers		$428
Less cash payments:		
To suppliers	$282	
To employees	63	
For insurance	10	
For electricity	23	
For taxes	15	393
Net cash provided by operating activities		$ 35

EXHIBIT 12.4 The Sunshine Company's operating cash flows using the direct method

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LO4

REPORTING CASH FLOWS FROM OPERATING ACTIVITIES: INDIRECT METHOD

This section demonstrates the calculation of cash flows from operating activities under the indirect method.

When reporting operating cash flows under the indirect method, companies calculate and report net cash flows from operating activities by adjusting the profit or loss from an accrual basis to a cash basis. This requires many adjustments, but they can be grouped into three main types:

- non-cash effects on net income
- gains and losses from investing and/or financing activities
- changes in current assets and liabilities.

The following sections demonstrate these adjustments using the Sunshine Company information in Exhibit 12.3.

ADJUSTMENTS FOR NON-CASH ITEMS

Accrual-based profit or loss (or net income) often includes expenses that have no related cash consequences. The most common example is depreciation expense, which is an allocation of the historical cost of a fixed asset. While depreciation reduces accrual-based profits, it does not result in any cash payment. Therefore, to adjust profits to a cash basis, the effect of depreciation must be removed. This is accomplished by adding depreciation expense back to profits. Other examples of non-cash expenses are amortisation expense, bad debt expense and impairment losses. Some therefore mistakenly think these are inflows of cash, but they are not. Depreciation and the like are expenses that reduce profits, but they are *not* cash outflows that reduce cash from operating activities.

The general adjustment for all non-cash expenses is therefore as follows:

Adjustment rule for non-cash expenses
Add back to profit all non-cash expenses

Sunshine's statement of comprehensive income in Exhibit 12.3 shows only one non-cash expense: depreciation expense of $25. Therefore, the $25 would be added back to profits.

ADJUSTMENTS FOR GAINS AND LOSSES FROM INVESTING AND FINANCING ACTIVITIES

Sometimes, a company's profits will include a gain or loss arising from an investing or financing activity. For example, a company might generate a gain from the sale of equipment or a 'loss on disposal of property, plant and equipment' or 'reconciliation of profit after tax to cash flows from operations' (see Exhibit 12.2 taken from CSL Note 14). Another company might generate a gain from the early retirement of debt or a 'loss on acquisition' (again see Exhibit 12.2).

Balance from statement of comprehensive income	Adjustment	Balance for statement of cash flows
Sales	– Increase in accounts receivable OR + Decrease in accounts receivable	= Cash collected from sales
Cost of goods sold	+ Increase in inventory OR – Decrease in inventory and – Increase in accounts payable OR + Decrease in accounts payable	= Cash paid for inventory
Operating expenses	+ Increase in current assets OR – Decrease in current assets or – Increase in current liabilities OR + Decrease in current liabilities	= Cash paid for operations
Income tax expense	– Increase in taxes payable OR + Decrease in taxes payable	= Cash paid for taxes

EXHIBIT 12.5 Summary of adjustments used in the direct method

When such activity occurs, the entire cash inflow associated with the transaction will be reported as either an investing or a financing cash flow. As a result, the effect of the gain or loss must be removed from profits so that operating cash flows are not affected by the transaction. Gains must be subtracted from profits, and losses must be added back to profits.

Adjustment rules for gains and losses from investing and financing activities
Subtract from profits any gains arising from investing or financing activities.
Add back to profits any losses arising from investing or financing activities.

Sunshine's Statement of comprehensive income shows only one gain or loss from an investing or financing activity: a $1 gain on the sale of equipment. Because the cash received from the sale will be reported as cash inflow in investing activities, the effect of the gain must be subtracted from profit to determine cash flow from operations. Therefore, profits are reduced by $1 to arrive at the cash flow from the operating activities figure.

ADJUSTMENTS FOR CURRENT ASSETS AND CURRENT LIABILITIES

The third type of adjustment involves the changes in a company's current assets and current liabilities. Current assets and current liabilities change during a period because a company's revenues do not equal cash received and its expenses do not equal cash paid.

For example, a change in accounts receivable means that a company's cash collections do not equal its sales revenue. If accounts receivable increases, sales revenue is greater than cash collections. If accounts receivable decreases, cash collections are greater than sales revenue. Likewise, a change in salaries payable means that a company's cash payments do not equal its salaries expense. If salaries payable increases, salaries expense is greater than cash payments. If salaries payable decreases, cash payments are greater than salaries expense.

Because the indirect method adjusts accrual-based income to cash-based income, these differences must be removed from the accrual-based profit or loss to arrive at cash flows from operating activities. That is, the revenues and expenses must be adjusted so that they reflect cash receipts and cash payments. This is accomplished with the following adjustments:

Adjustment rules for current assets and current liabilities
Add a decrease in current assets to net income.
Subtract an increase in current assets from net income.
Add an increase in current liabilities to net income.
Subtract a decrease in current liabilities from net income.

Sunshine's balance sheet shows changes in several current assets and current liabilities. The following sections describe the adjustment that each change requires.

Change in accounts receivable

Sunshine's balance sheet shows a $4 increase in accounts receivable. Accounts receivable increases when sales are made without receiving cash. Therefore, $4 of the reported sales revenue was not collected in cash and must be removed from revenues. Removing $4 from revenue is accomplished by subtracting $4 from profits.

Change in inventory

Sunshine's inventory increased by $9 during the year. Inventory increases when a company purchases more inventory than it sells. Therefore, it must have purchased $9 more in inventory than it sold during the year. So that cash flows reflect all payments for purchases, the $9 must be added to cost of goods sold. This results in a reduction to profits of $9 to reflect the cash flow associated with inventory.

Change in prepaid insurance

Sunshine has a decrease in prepaid insurance of $4. Prepaid insurance decreases when a company uses insurance that it has already purchased. Thus, a decrease of $4 means that it used $4 of insurance that it purchased in a previous period. As a result, insurance expense is $4 greater than the cash paid for insurance and should be reduced to reflect the cash paid for insurance. Reducing cash paid for expenses by $4 is accomplished by adding $4 to profits.

Change in accounts payable

Sunshine's balance sheet shows that accounts payable increased by $8 during the year. Accounts payable increases when inventory is purchased without paying cash, so an $8 increase means that it did not pay for $8 of its purchases calculated previously. Therefore, the $8 must be removed from expenses. This is accomplished by adding $8 to profit.

Change in electricity payable

Sunshine has an increase of $5 in electricity payable. Electricity payable increases when a company incurs electricity expense but does not pay cash. Thus, the $5 increase means that the expenses are $5 greater than the cash paid. As a result, the $5 of expenses must be removed from profits. This is accomplished by adding $5 to profits to reflect the cash outflow associated with electricity.

Change in taxes payable

Sunshine's balance sheet shows that taxes payable decreased $7 during the period to end at a zero balance. Taxes payable decreases when a company pays not only for current-period taxes but also prior-period taxes. The $7

decrease therefore means that it paid $7 more than it expensed. As a result, the $7 should be added to expenses. This is accomplished by subtracting $7 from profits.

You will note there is a certain repetitiveness to these payables. Rather than trying to learn this as a formula (increase in payable, less cash outflow etc.) try to think of the logic.

A trip down logic lane: the logic of saving cash by not paying your bills (increasing payables), by getting those who owe you to pay quickly (reducing receivables) and running down inventory levels (reducing inventory) are important in preparing the cash flow from operations – but may be critical for the survival of your business

NET OPERATING CASH FLOWS

The six adjustments from changes in current assets and current liabilities, along with the two adjustments for non-cash items, are shown in Exhibit 12.6. The adjustments result is $35 in net cash provided by operating activities. If you are learning both the direct and indirect methods, you should note that the $35 is the same as calculated under the direct method. Note this is the same as shown in CSL's reconciliation earlier in Exhibit 12.2 and in Appendix B (Note 14: Cash and cash equivalents).

The Sunshine Company		
Cash flows from operating activities		**2020**
Profits		$14
Adjustments to reconcile profits after income tax to net cash inflows from operating activities		
Depreciation expense	$25	
Gain on sale of equipment	(1)	
Increase in accounts receivable	(4)	
Increase in inventory	(9)	
Decrease in prepaid insurance	4	
Increase in accounts payable	8	
Increase in electricity payable	5	
Decrease in taxes payable	(7)	21
Net cash provided by operating activities		$35

EXHIBIT 12.6 The Sunshine Company's operating cash flows using the indirect method

LO5

CALCULATING CASH FLOWS FROM INVESTING ACTIVITIES

This section demonstrates the calculation of cash flows from investing activities. Recall that investing activities include the purchase and sale of non-current assets such as PPE, intangible assets and long-term investments.

To calculate cash flows from investing activities, all changes in non-current assets must be examined. In general, an increase in a non-current asset suggests a purchase and therefore a cash outflow. A decrease suggests a sale and therefore a cash inflow. However, to be sure, any available information on the changes must be examined to determine whether the change resulted from a non-cash transaction or whether the change was the net effect of both increases and decreases to the account.

To illustrate, consider again Sunshine's balance sheet in Exhibit 12.3. It shows three non-current asset accounts: Investments, Property and Equipment, and Accumulated Depreciation. In the following sections, each account balance is examined to determine Sunshine's cash flows from investing activities.

INVESTMENTS

According to Sunshine's balance sheet (Exhibit 12.3), investments increased $22. Without any information to the contrary, it is assumed that it purchased investments for $22 cash. Thus, a cash outflow of $22 from the purchase of investments is reported in investing activities.

EQUIPMENT

Sunshine's balance sheet shows a $66 increase in property and equipment during the year. Thus, it must have purchased equipment during the year. The statement of comprehensive income shows a $1 gain on the sale of equipment. Thus, it must have sold equipment during the year. As a result, there are both cash inflows and outflows related to equipment. Each will be considered separately.

Cash inflows

Although the information is not in the financial statements presented, let's assume Sunshine discloses that the $1 gain on the sale of equipment arose from selling equipment with a cost of $10 and accumulated depreciation of $5 for $6. Thus, a $6 inflow from the sale of equipment should be included in investing activities. Note here that the gain from the sale is ignored. Only the cash flow from the sale is of interest at this point. The gain has already been accounted for previously in cash flows from operating activities.

Cash outflows

Sunshine's equipment account increased $66 during the year. Without any additional information, it would be assumed that it purchased $66 in equipment for cash. However, the additional information discloses that equipment with a cost of $10 was sold during the year. Therefore, it must have purchased $76 in equipment during the year.

ACCUMULATED DEPRECIATION

Recall from Chapter 8 that Accumulated Depreciation is the account that 'collects' the depreciation expenses. Therefore, it changes when either depreciation expense is recorded or depreciating non-current assets are sold. Depreciation expense does not affect cash, and any sale of equipment is already considered when examining the equipment account. Gains or losses on the sale of non-current assets are backed-out (taken out) in the reconciliation. Therefore, the change in the accumulated depreciation account can be ignored.

SUMMARY OF INVESTING CASH FLOWS

The three cash flows from investing activities are shown in Exhibit 12.7. The three items resulted in a net cash *outflow* from investing activities of $92. Sunshine was using its cash to invest in additional non-current assets.

The Sunshine Company	
Cash flows from investing activities	**2020**
Purchase of equipment	$(76)
Sale of equipment	6
Purchase of investments	(22)
Net cash used in investing activities	($ 92)

EXHIBIT 12.7 The Sunshine Company's investing cash flows

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LO6 CALCULATING CASH FLOWS FROM FINANCING ACTIVITIES

This section demonstrates the calculation of cash flows from financing activities. Recall that financing activities include borrowing and repaying debt (non-current liabilities) and cash inflows and outflows from/to the shareholders/investors (equity). Common financing activities include the issuing of shares or debt and the repurchase (buyback) of shares, the payment of dividends and the repayment of debt. Note that although payments of dividends to shareholders are considered a financing activity, payments of interest to creditors are not. Because interest is an expense that is reported on the statement of comprehensive income, payments for interest are reported as operating activities rather than financing activities.

To calculate cash flows from financing activities, the balances for non-current liabilities, equity accounts and dividends must be examined. In general, an increase in a liability or an equity account such as ordinary shares suggests a cash inflow from either borrowing or selling shares. A decrease in a liability or dividends suggests a cash outflow from payments to creditors or investors. However, to be sure, any available information on the changes must be examined to determine whether the change resulted from a non-cash transaction or whether the change was the net effect of both increases and decreases to the account.

AAP Image; Alamy Stock Photo/ martin berry; iStock.com/Katharina13

Banks are the primary source of business borrowings

To illustrate, consider again the Sunshine Company's balance sheet in Exhibit 12.3. It shows one non-current liability and two equity accounts. It provides no additional information regarding the accounts. In the following sections, each account balance is examined to determine Sunshine's cash flows from financing activities.

NON-CURRENT LIABILITIES

According to Sunshine's balance sheet, non-current liabilities increased $45 during the year. Without any information to the contrary, it is assumed that it borrowed $45 in cash. Thus, a cash inflow of $45 from the borrowings is reported in financing activities.

CONTRIBUTED EQUITY

Sunshine's balance sheet shows a $10 decrease in shareholders' equity. Thus, without any additional information, it is assumed that Sunshine must have repurchased (bought back) shares for $10 cash. Thus, a cash outflow of $10 from the share buyback is reported in financing activities.

The issue of shares and the buying back of shares are relatively uncommon activities (CSL's semi-regular buybacks are an exception). After the initial public offer (floating the company), some companies may never issue more shares or repurchase shares. Many companies would only undertake these activities every few years. This is not to be confused with the daily trading on the Australian Securities Exchange (ASX) where current owners sell their shares to other owners who wish to

increase their shareholding or new owners (investors). None of the money from this daily trading enters or leaves the company.

RETAINED EARNINGS

The fourth and final account is retained earnings. Recall from earlier chapters that the retained earnings balance is affected by two things; profits or losses and dividends declared. Profits increase the balance while dividends decrease the balance. Sunshine's balance sheet shows that retained earnings increased $9 during the year, from $78 to $87. The statement of comprehensive income shows that profits were $14. Therefore, dividends declared can be calculated as follows:

Retained earnings, beginning balance	$78		
Plus: Profits	14		
Less: Dividends declared	??	×	?? = $5
Retained earnings, ending balance	$87		

Now that dividends declared are known, the amount paid can be calculated. If dividends were not paid, the balance sheet would show a balance in dividends payable in current liabilities. Neither year shows a balance, so all $5 of the dividends must have been paid. Thus, a cash outflow of $5 from the payment of dividends is reported in financing activities.

NET FINANCING CASH FLOWS

The three cash flows from financing activities are shown in Exhibit 12.8. The three items resulted in a net cash inflow from financing activities of $30. Sunshine generated $30 more from financing activities than it paid.

The Sunshine Company	
Cash flows from financing activities	**2020**
Long-term borrowings	$45
Payment of dividends	(5)
Repurchase of shares	(10)
Net cash provided by financing activities	$30

EXHIBIT 12.8 The Sunshine Company's financing cash flows

COMPLETE STATEMENT OF CASH FLOWS: INDIRECT METHOD

Sunshine's final statement of cash flows, using the indirect method, is shown in Exhibit 12.9. The net decrease in cash of $27 corresponds to the change in the cash account from Sunshine's balance sheet. Like the tide, cash flows both ways.

Alamy Stock Photo/tom carter

While building depreciation is an expense but not a cash outflow, repairs are both a cash outflow and an expense

The Sunshine Company Statement of cash flows 30 June 2020		
Cash flows from operating activities		
Profits after income tax		$ 14
Adjustments to reconcile profits after tax to net cash provided by operating activities		
Depreciation expense	$ 25	
Gain on sale of equipment	(1)	
Increase in accounts receivable	(4)	
Increase in inventory	(9)	
Decrease in prepaid insurance	4	
Increase in accounts payable	8	
Increase in electricity payable	5	
Decrease in taxes payable	(7)	21
Net cash provided by operating activities		$ 35
Cash flows from investing activities		
Purchases of equipment	$ (76)	
Sale of equipment	6	
Purchases of investments	(22)	
Net cash used in investing activities		(92)
Cash flows from financing activities		
Long-term borrowings	$ 45	
Payment of dividends	(5)	
Repurchase of ordinary shares	(10)	
Net cash provided by financing activities		30
Net decrease in cash		$ (27)
Cash, beginning of the year		45
Cash, end of the year		$ 18

EXHIBIT 12.9 The Sunshine Company statement of cash flows (indirect method)

For CSL, the cash flow information is summarised in Exhibit 12.10 below.

Source	Accounts	2017	2016
Statement of cash flows	Cash flows from operating activities	$1 247	$1 179
	Net capital expenditures (on PPE)	689	495
	Expenditure on intangibles and business acquisitions	172	315
	Dividends paid	601	579
	Shares bought back	315	648
Notes 11 (d)	Average debt maturing in next five years	($1 373 + $2 259) / 5 = 726	($1 133 + 1 636) / 5 = 554

EXHIBIT 12.10 Account balances from CSL's 2017 Annual Report (rounded to nearest $ million)

Source: Adapted from CSL's *Annual Report 2017*.

LO7 ANALYSING A COMPANY'S STATEMENT OF CASH FLOWS

The statement of cash flows reports how a company generated and used its cash during the year. As a result, the statement can be used to answer many questions about a company's cash. Two of the broader questions that can be addressed are as follows:

1. Is the company able to generate enough cash to grow?
2. Is the company able to generate enough cash to satisfy its obligations?

The following sections examine these questions for CSL.

The examination will require the information from CSL's statement of cash flows and notes to the financial statements.

FREE CASH FLOW

When assessing a company's cash flows, a commonly used calculation is free cash flow. This is the cash a company generates in excess of its investments in productive capacity and payments to shareholders in the form of dividends (and in CSL's case it could be argued share buybacks because of the regular buybacks and the expectation this has built). Free cash flow is a measure of a company's ability to generate cash for expansion, for other forms of improved operations, for the repayment of debt, or for increased returns to shareholders.

While free cash flow can be defined in many ways, the most straightforward definition is as follows:

Cash flows from operating activities
Less: Capital expenditures on PPE (and possibly intangibles and business acquisitions
Less: Dividends (and possibly share buybacks)
= Free cash flow

The calculation starts with cash flows from operating activities, which is a measure of a company's ability to generate cash from its current operations. It then subtracts capital expenditures, which refers to the cash that a company spends on PPE (and in CSL's case it could be argued purchase of intangibles and business acquisitions could also be included because of the regularity of this as a means of expansion), and payments to shareholders during the year. The cash that remains is 'free' to be used as the company chooses.

CSL's free cash flow is calculated as follows from the information in Exhibit 12.10:

	2017	2016
Cash flows from operating activities	$1 247	$1 179
– Capital expenditures on PPE	689	495
– Dividends	601	579
Free cash flow	($ 43)	$ 105

In 2017, CSL had negative free cash flow. That is, it generated less cash from operations than it paid for PPE and dividends. If we included expenditure on intangibles, business acquisitions and share buybacks the figure would be negative $530 million (– $858 million in 2016). To maintain a similar financing and expansion strategy CSL will need to have net borrowings of well over half a billion dollars each year.

CASH FLOW ADEQUACY RATIO

A second ratio that is commonly used to assess a company's cash is the cash flow adequacy ratio. The **cash flow adequacy ratio** compares free cash flow to the average amount of debt maturing in the

cash flow adequacy ratio Compares free cash flow to the average amount of debt maturing in the next five years and measures the ability to pay maturing debt.

next five years. Details are given in Note 11 (d) of CSL's Annual Report 2017 where 'Contractual payments due' are divided into '1 year or less', 'Between 1 year and 5 years' and 'Over 5 years'.

KEY FORMULA 12.1 CASH FLOW ADEQUACY RATIO

$$\text{Cash Flow Adequacy Ratio} = \frac{\text{Free Cash Flow}}{\text{Average Amount of Debt Maturing in Five Years}}$$

Because this ratio compares free cash flow to maturing debt, it represents a company's ability to generate enough cash to pay its debt. In general, companies may like this ratio to be higher rather than lower. All other things being equal, a higher ratio indicates a greater ability to generate sufficient cash from operations to pay upcoming debt.

For CSL in 2017 the calculation is meaningless and in 2016 less than 20 per cent.

The negative free cash flow in 2017 indicated an apparent inability to repay any debt from operations after buying PPE and paying dividends. In fact, cash would need to be raised to maintain the same dividends in 2018. Even in 2016, less than 20 per cent of debt could be repaid from free cash flow. Despite this apparent cash shortage, CSL undertook $387 million in other capital expenditure and share buybacks in 2017. Such an analysis is limited and misses the richer information contained in CSL's statement of cash flows.

During the 2016/17 financial year CSL's share price increased from $111.93 to $138.03, over 23 per cent, while the Australian share market increased on average (All Ordinaries Index) less than 9 per cent. CSL is a large rapidly growing biotechnology company, which warrants deeper analysis; this is undertaken in the next chapter.

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Classify cash flows

LO1

A business enters into the following independent transactions:

i. issued $290 000 of ordinary shares in exchange for cash
ii. borrowed $480 000 from the bank
iii. received $270 000 in cash from accounts receivable
iv. $76 000 is paid to an account payable
v. exchanged (issued) $55 000 of ordinary shares upon conversion of debentures (bonds) with a face value of $55 000
vi. declared and paid a cash dividend of $748 000
vii. sold an investment costing $130 000 for $130 000 in cash
viii. bought back shares, $920 000
ix. paid tax, $110 000
x. purchased property, $800 000.

REQUIRED

Classify each of the preceding transactions as a cash inflow or a cash outflow from operating, investing or financing activities, or as a non-cash transaction.

2 Classify cash flows

LO1

A company enters into the following transactions:

i. interest is paid on a note payable
ii. salaries are paid to the company's employees
iii. bonds are issued in exchange for cash
iv. income taxes are paid by the company
v. new heavy machinery is purchased with cash
vi. convertible bonds are issued in exchange for land
vii. cash dividends are paid to shareholders
viii. the shares of another company are purchased as an investment
ix. the company buys back its own shares on the market and retires them
x. shares are given to the bank in return for cancellation of a loan
xi. an amount due from a customer is collected
xii. intangible assets are purchased from another company for cash.

REQUIRED

Indicate whether each transaction would appear under operating, investing or financing activities. Also note if a transaction is a significant non-cash transaction that would require additional disclosure.

3 Classify cash flows

LO1

A business entered into the following transactions:

i. purchased new machinery for $24 000 cash
ii. paid an account payable relating to inventory of $2500 with cash
iii. recorded cash sales of $52 000 for the period
iv. purchased a new warehouse for $275 000. The seller of the building accepts 10 000 shares as payment
v. issued debentures at face value of $25 000
vi. repurchased 200 of the company's own shares on the open market for $7000
vii. purchased a new light truck for $18 000 by signing a 180-day note payable
viii. collected cash of $3000 from a customer in satisfaction of accounts receivable
ix. sold 550 BHP shares for their book value of $25 000
x. paid $200 for renewal of the meteor insurance policy
xi. paid dividends of $5000 in cash.

REQUIRED

Classify each transaction as a cash inflow or outflow from operating activities, investing activities or financing activities, or as an item reported in a supplemental schedule of the statement of cash flows.

4 Direct versus indirect method

LO2

Illustrate with an example the additional information contained in the indirect method of calculating the cash flow from operations compared to the direct method. In your example show at least one increase and one decrease in current assets and the same in current liabilities that highlight the differences. Also include a profit on sale of property and depreciation of equipment.

5 Calculate cash paid for salaries

LO3

Calculate the cash paid:

i. Salaries expense was $250 000 for the year. During the year salaries payable increased $25 000.
ii. COGS was $980 000. Inventory at the beginning of the year was $66 000 and ending inventory $85 000.
iii. Rent expense $99 000. Opening balance of prepaid rent $8000, closing balance $9000.

REQUIRED

Determine the amount of cash paid for salaries, inventory and rent during the year.

6 Calculate cash collections

LO3

Emma's balance sheet showed an accounts receivable balance of $75 000 at the beginning of the year and $97 000 at the end of the year. Emma reported sales of $1 150 000 on her income statement.

REQUIRED

Using the direct method, determine the amount that Emma will report as cash collections in the operating activities section of the statement of cash flows.

7 Calculate cash paid for purchases

LO3

The Kapyong Company's balance sheet included an inventory balance of $105 000 at 30 June 2019 and $142 000 at 30 June 2020. Accounts payable balances were $78 000 and $47 000 at 30 June 2019 and 30 June 2020, respectively. Kapyong's accounts payable only relate to inventory purchases. Cost of goods sold as reported on the 2020 income statement was $885 000.

REQUIRED

Using the direct method, determine the amount that Kapyong will report as cash paid for inventory in the operating activities section of the statement of cash flows.

8 Calculate cash paid for operating expenses

LO3

The following information is available for a company's rent and income taxes:

Prepaid rent, beginning of year	$25 000
Prepaid rent, end of year	31 000
Rent expense	40 000
Cash paid for rent during the year	(a)
Income taxes payable, beginning of year	25 000
Income taxes payable, end of year	31 000
Income tax expense	40 000
Cash payments for income taxes	(b)
Accounts payable, beginning of year	800
Accounts payable, end of year	300
Inventory purchased during the year	25 500
Cash paid for inventory	(c)

REQUIRED

Calculate the missing information.

9 Identify indirect method adjustments

LO4

A company experiences the following items during the year:

i. depreciation expense
ii. increase in income taxes payable
iii. decrease in accounts receivable
iv. increase in prepaid expenses
v. decrease in inventory
vi. increase in accounts payable
vii. gain on sale of investments.

REQUIRED

a Identify whether each item would be an addition to or subtraction from net income when calculating operating cash flows using the indirect method.

b Choose one of the items and explain on your Facebook wall why the item is treated the way you have stated above.

10 Classify adjustments under the indirect method

LO4

A company that uses the indirect method to report operating activities experiences the following events:

i. decrease in accounts payable
ii. increase in accounts receivable
iii. purchase of a new conveyor belt system
iv. buyback of shares
v. gain on the sale of old conveyor belt system
vi. depreciation expense
vii. increase in inventory
viii. increase in bank loans
ix. bad debt expense.

REQUIRED

Indicate whether each item should be added to profit, deducted from profit or not reported in the reconciliation of profits to cash flow from operations.

11 Prepare operating cash flows under the indirect method

LO4

The following information was reported by Imma Imports:

	2019	2018
Accounts receivable	$110 000	$94 000
Inventory	70 000	90 000
Prepaid insurance	24 000	20 000
Accounts payable	44 000	30 000
Income taxes payable	20 000	28 000
Interest payable	24 000	18 000
Profit after tax	490 000	
Depreciation expense	50 000	

REQUIRED

Prepare the operating activities section of the statement of cash flows using the indirect method and explain why cash flows from operating activities is more or less than profits after tax.

12 Reporting cash flows from sale of equipment

LO3, 4, 5

A company sells equipment with a book value of $23 000 for $25 000 cash.

REQUIRED

a How would the sale of equipment be reported in the cash flow from operating activities under the (i) indirect method and (ii) the direct method?

b Where else on the statement of cash flows would the sale be reported and how?

13 Classifying transactions under the indirect method

LO4, 5, 6

The following is a list of transactions and changes in account balances that occurred during the year:

i. income taxes payable decreased
ii. paid cash in satisfaction of a matured bond payable
iii. declared a cash dividend
iv. accounts payable increased
v. accounts receivable doubled before returning to the beginning of the year balance
vi. sold equipment for cash and made a substantial gain

vii purchased a new warehouse by issuing debentures
viii purchased inventory for cash
ix bought back own shares in open market.

REQUIRED

Assuming the *indirect* method for operating activities, indicate whether each transaction would be included in operating activities, investing activities, financing activities, non-cash disclosures or not reported. Note that some transactions may impact multiple sections.

14 Calculate cash flows from investing activities

LO5

The following information is taken from the balance sheet of The Cheese Board:

	2021	2020
Equipment	$85 000	$120 000
Accumulated depreciation (equipment)	50 000	55 000

Depreciation expense of $15 000 was reported on the statement of comprehensive income for 2021. Equipment with an original cost of $35 000 was sold for $500 profit (gain).

REQUIRED

Calculate the amount of cash received from the sale of the equipment.

15 Calculate cash flows from investing activities

LO5

The following transactions occurred during the year:

a A new warehouse was purchased for cash in the amount of $330 000.
b The company's own shares were purchased (bought back) on market for $280 000.
c An old warehouse costing $240 000 was sold for $135 000, resulting in a gain of $15 000.
d The company purchased shares in Howard and Company for $22 500 cash.
e Shares of Samantha Stores were sold for $37 500, resulting in a gain of $22 500.

REQUIRED

Use this information to calculate cash flows from investing activities.

16 Calculate cash flows from financing activities

LO6

The following transactions occurred during the year:

i ordinary shares were issued in exchange for new equipment
ii a cash dividend of $200 000 was paid
iii a 90-day note payable was issued for $50 000 cash
iv $250 000 was paid to buy back the company's own shares
v depreciation expense for the year was $300 000
vi notes of $250 000 were issued.

REQUIRED

Use this information to calculate cash flows from *financing* activities.

17 Analysing cash flows

LO7

Duong and Dinh are both online retail companies. The following financial information regarding each company is available:

	Duong	Dinh
Cash flows from operating activities	$450 000	$450 000
Profits after income tax	250 000	250 000
Capital expenditures	100 000	130 000
Dividends declared and paid	60 000	20 000
Average amount of debt maturing in five years	40 000	60 000

REQUIRED

a Indicate which company generated more free cash flow.
b Indicate which company has the better cash flow adequacy ratio.

18 Interpreting investing and financing cash flows

LO7

Pazmandy reports the following cash flows from investing and financing activities over the past three years (in thousands):

	2020	2019	2018
Cash flows from investing activities			
Purchase equipment	$(803)	$(2 768)	$ (752)
Sales of investments	–	1 204	–
Purchase of investments	–	(1 204)	–
Net cash used by investing activities	(803)	(2 768)	(752)
Cash flows from financing activities			
Issuance of long-term debt	–	–	3 200
Payment of dividends	(50)	(50)	(66)
Share buyback	–	(1 200)	–
Net cash used/provided by financing activities	(50)	(1 250)	3 134

REQUIRED

From the information above, describe the major ways in which Pazmandy used investing and financing cash flows over the last three years.

PROBLEMS

19 Prepare operating cash flows under the direct method

LO3

The following information is provided for the Hildebrand Company:

Balances at 30 June	2021	2020
Accounts Receivable	$ 2 500	$ 1 500
Inventory	26 000	32 000
Maintenance Supplies	2 000	1 000
Accounts Payable	4 000	3 000
Taxes Payable	2 000	3 500
Interest Payable	1 500	2 500
2021 income statement		
Revenue		$80 000
Cost of goods sold		55 000
Gross profit		25 000
General and administrative expense		6 000
Depreciation expense		2 000
Total operating expenses		8 000
Profit before interest and tax		17 000
Interest expense		4 000
Profit before income tax		13 000
Income tax expense		4 000
Profit after income tax		$ 9 000

REQUIRED

Prepare the operating activities section of the statement of cash flows using the direct method. Prepare the reconciliation of profit after income tax to net cash inflow from operating activities.

20 Prepare a statement of cash flows using the indirect method

LO4, 5, 6

The balance sheets for the Intelligence Company are as follows:

Comparative balance sheets as at 30 June		
	2022	2021
Cash and cash equivalents	$ 65 000	$ 45 000
Accounts receivable	50 000	55 000
Inventory	125 000	175 000
Property, plant and equipment	930 000	745 000
Accumulated depreciation	(270 000)	(200 000)
Total assets	$900 000	$820 000
Accounts payable	$ 110 000	$105 000
Unsecured syndicated bank loan (long-term)	180 000	200 000
Total liabilities	$290 000	$305 000
Ordinary shares	$350 000	$280 000
Retained earnings	260 000	235 000
Total shareholders' equity	610 000	515 000
Total liabilities and shareholders' equity	$900 000	$820 000

The following additional information is available:

i Profits after tax for 2022 were $50 000.
ii Cash dividends of $25 000 were paid during the year.
iii A portion of unsecured syndicated bank loan matured and was repaid during the year.
iv Ordinary shares were issued for cash.
v Property and equipment were purchased for cash. No non-current assets were sold during the year.
vi The change in accumulated depreciation is a result of depreciation expense.

REQUIRED

Prepare a statement of cash flows for the year using the direct method for the operating activities section and prepare a reconciliation of profits after tax to cash flow from operations.

21 Prepare a statement of cash flows

LO3, 4, 5

Available financial information for 2RAR Company is as follows (figures in thousands):

Comparative balance sheets as at 30 June		
	2021	2020
Cash and cash equivalents	$ 75 000	$ 45 000
Accounts receivable	45 000	55 000
Inventory	200 000	175 000
Prepaid insurance	30 000	35 000
Total current assets	350 000	310 000
Property, plant and equipment	800 000	720 000
Accumulated depreciation	(240 000)	(170 000)
Total property, plant and equipment	560 000	550 000
Total assets	910 000	860 000
Accounts payable	110 000	115 000
Accrued salaries	10 000	35 000
Total current liabilities	120 000	150 000
Loans	180 000	230 000
Total liabilities	300 000	380 000
Contributed equity (shares)	350 000	250 000
Retained earnings	260 000	230 000
Total equity	610 000	480 000
Total liabilities and equity	910 000	860 000

Income statement for the year ended 30 June 2021	
Sales revenue	$ 450 000
Cost of goods sold	(225 000)
Gross profit	$ 225 000
Depreciation expense	(70 000)
Other operating expenses	(30 000)
Profit before interest and tax	$ 125 000
Interest expense	(20 000)
Profit before income tax	$ 105 000
Income tax expense	(30 000)
Profit after income tax	$ 75 000

The following additional information is available:

- **i** Cash dividends of $45 000 were declared and paid during the year.
- **ii** Equipment was purchased for cash (no PPE was sold).
- **iii** A portion of the loans were repaid with cash.
- **iv** Shares were issued for cash.

REQUIRED

Prepare a statement of cash flows for 2RAR for 2021 using the direct method and a reconciliation of profit after income tax to net cash flow from operations.

22 Prepare a statement of cash flows

LO2, 3, 4, 5, 6, 7

The following is Complete Company's two financial statements (in millions):

Income statement for the year ending 30 June 2019	
Sales	$ 750
Cost of goods sold	450
Gross profit	$ 300
Operating expenses	100
Income before interest and taxes	$ 200
Interest expense	15
Income before taxes	$ 185
Income tax expense	75
Profits	$ 110

Balance sheet as at 30 June		
	2019	2018
Cash	$ 45	$ 80
Accounts receivable	155	115
Inventory	225	190
Prepaid insurance	22	32
Total current assets	$447	$417
Property and equipment	1 250	1 050
Accumulated depreciation	(175)	(140)
Total property and equipment	$1 075	$ 910
Total assets	$1 522	$1 327
Accounts payable	$ 120	$ 135
Income taxes payable	155	175
Total current liabilities	$ 275	$ 310
Bonds payable	400	325
Total liabilities	$ 675	$ 635
Contributed equity	525	475
Retained earnings	322	217
Total shareholders' equity	$ 847	$ 692
Total liabilities and equity	$1 522	$1 327

The following additional information is available:

- **i** operating expenses include $35 million of depreciation
- **ii** property and equipment were acquired for cash
- **iii** additional contributed equity was shares issued for cash
- **iv** additional cash was obtained by issuing bonds
- **v** dividends were paid.

The CEO has posed some questions regarding this year's results. She is pleased that the profit margin is approaching 15 per cent. However, the decrease in the cash balance during such a profitable year troubles her.

REQUIRED

- **a** Prepare a statement of cash flows for Complete Company using the direct method for operating cash flows. Prepare a separate schedule showing the reconciliation of profit after tax to cash flows from operations.
- **b** Based on your work, explain to the CEO why cash decreased during a profitable year.

CASES

23 Research and analysis

LO1, 7

Access the latest available annual report for both CSL and Cochlear. Please note, both companies financial year ends 30 June, with the latest annual reports usually available in September. They are easy to find by doing an internet search for the company name and 'annual report' and the appropriate year.

REQUIRED

- **a** Examine the companies' statements of cash flows. Identify the major cash inflows and outflows in investing and financing activities. Briefly discuss how these have changed from those shown in this chapter and Appendix B.
- **b** Calculate the companies' free cash flow in the current year. Has this improved?
- **c** Where have both companies obtained their cash?

24 Ethics in accounting

LO7

You are the accountant of a small company that wants to expand. The CEO is negotiating a loan with the bank and the bank requires a statement of cash flows. The CEO is concerned because operating cash flows are down compared to prior years. The main reason is deteriorating collections from accounts receivables. The CEO presents three options to address the situation prior to year-end and the preparation of the statement of cash flows:

- **i** convert some of the oldest receivables to long-term notes receivable
- **ii** sell some receivables to a collector for $0.65 per $1 of receivables
- **iii** delay payment of all outstanding accounts payable until the next year.

REQUIRED

- **a** Comment on the appropriateness of each option.
- **b** Is there an ethical dilemma involved?
- **c** How would you respond to the CEO?

25 SMS Communications: Statement of cash flow (SCF)

LO1

During the CEO's address at the annual general meeting the Chair of the Board of Directors, sends you the following SMS: 'why do we have a stupid @#%& SCF?'. In 140 characters or less prepare a sentence the Chair could read to the meeting simply explaining the reason why the annual report includes a statement of cash flows (SCF).

26 Free cash flow and financing options

LO7

Sarah is an entrepreneur and the founder of Chemical Supply Company. During the last year, Chemical Supply generated $400 000 in operating cash flows, paid $250 000 in capital expenditures (as it does almost every year), and paid $50 000 in dividends. Sarah is interested in significantly expanding this year. To do so, she needs to spend $1 million on equipment in addition to her normal capital expenditures. She believes that if she buys the equipment, her operating cash flows will increase by at least 50 per cent and could possibly double. She has spoken with the bank, which has offered the following two note options where an equal amount of principal is due each year:

- **i** two-year, 5 per cent, $1 000 000 note
- **ii** six-year, 7 per cent, $1 000 000 note.

REQUIRED

- **a** What is Chemical Supply Company's current free cash flow.
- **b** Identify the advantages and disadvantages of each option the bank provides.
- **c** Which option should Sarah choose and why?
- **d** What other alternatives are available for expansion and what are the advantages and disadvantages of these?

13

Financial statement analysis

LEARNING OBJECTIVES

After studying the material in this chapter, you should be able to:

1. Understand the nature of financial statement analysis.
2. Calculate and interpret horizontal and vertical analyses.
3. Assess profitability through the calculation and interpretation of ratios.
4. Assess liquidity through the calculation and interpretation of ratios.
5. Assess solvency through the calculation and interpretation of ratios.
6. Calculate and interpret a DuPont analysis.

CourseMateExpress

Throughout this chapter **apply this** icons indicate an opportunity for online self-study through **CourseMate Express**, linking you to revision quizzes, e-lectures, animations and more.

The first 12 chapters of this book examined the various aspects of financial accounting – the process of identifying, measuring and communicating economic information to external stakeholders to permit informed decisions. This chapter demonstrates how to analyse the products of this process – the statement of comprehensive income, balance sheet, statement of cash flows and statement changes in equity – to make informed decisions about a company; that is, it focuses on financial statement analysis. We will use the financial statements of the biotechnology company Cochlear, which helps 'people hear and be heard'. Cochlear is a Top 50 company, about one-sixth the size of CSL (and not a direct competitor). Although substantially different in size, financial statement analysis allows us to compare and contrast the two companies. This brings together much of the analysis conducted at the end of most chapters, making it more coherent and extending the analysis.

Financial statement analysis can help investors and creditors understand how effectively and efficiently companies like Cochlear and CSL are conducting their businesses and the resulting financial performance, especially in comparison to each other.

Leon Sidik

Cochlear and CSL are two of the largest biotechnology companies in Australia

LO1 FINANCIAL STATEMENT ANALYSIS

Financial statement analysis is the process of applying analytical tools to a business' (usually a company's) financial statements to understand the business' financial health. The goal of such an analysis is to provide some context for

financial statement analysis The process of applying analytical tools to a company's financial statements to understand the business' financial health.

understanding the accounting numbers on the financial statements. Ultimately, financial analysis should help all stakeholders (investors, creditors, employees even management), or any other interested party, better understand a business' financial performance and position, and therefore make better decisions for, and about, that business. Enabling good decisions is one goal of financial accounting, and it should be the product of financial statement analysis.

Financial analysis requires the following:

- financial information
- standards of comparison
- tools of analysis.

Check out the video summary for Chapter 13

FINANCIAL INFORMATION

Reporting entities must file their annual financial statements with the Australian Securities and Investments Commission (ASIC). All publicly listed companies must also prepare audited financial statements each year and file them with the Australian Securities Exchange (ASX). These statements include the income statement, balance sheet, statement of changes in equity and statement of cash flows. Financial statements contain current and prior-year data for comparative purposes and are the starting point for any analysis.

In addition to financial statements, reporting entities provide other information that should be consulted to enhance a financial analysis. For example, a company's notes to its financial statements (as you have seen in Chapter 2) provide further explanation of items on the financial statements and additional disclosures not included on the statements. A company's management's discussion and analysis will contain the most senior insiders (usually the chairperson and CEO) commentary on aspects of company operations, corporate governance, risk analysis and future plans. Even company press releases, earnings conference calls and notifications of shareholder meetings can contain useful information. Finally, it is always a good idea to consult independent, third-party analysis.

For publicly listed companies it is also useful to look at the share price history as investors have a vested interest in knowing all they can about the companies in which they are buying and selling shares.

Exhibit 13.1 shows a five-year increase by CSL of around 160 per cent, and by Cochlear of around 120 per cent, while the weighted average of the top 50 companies listed on the ASX 50 Index is just over 20 per cent.

In this chapter, the financial information provided by Cochlear will be used to illustrate the process of financial analysis. Our focus will be predominantly on information from the income statement and the balance sheet. As a result, only those two statements are shown in the text. However, when information beyond these two statements is required, it will be provided. The most recent financial statements for listed companies are available in their annual reports, online.

STANDARDS OF COMPARISON

When conducting a financial analysis, there should be some benchmarks for comparison. The most common benchmark is the prior year(s) of the same company. This is often called an intracompany comparison because it is a comparison within a company. Horizontal analysis (time series) is an excellent example of intracompany analysis.

Another common benchmark is competitors. Comparisons among competitors are often called intercompany comparisons (cross-sectional analysis) because they are between companies, usually for the same time period. Vertical analysis is an excellent tool for intercompany analysis because it removes the effect of company size.

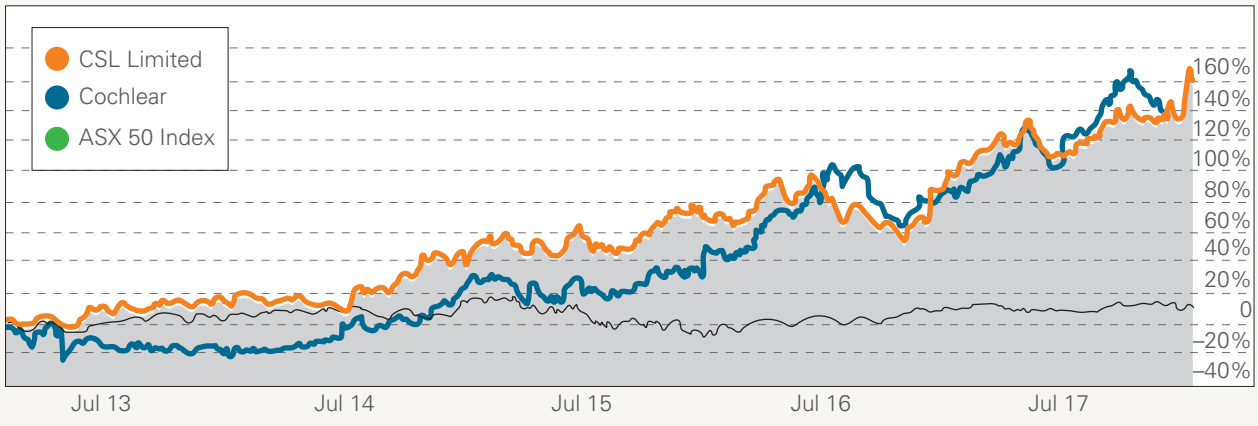

EXHIBIT 13.1 Comparison of CSL, Cochlear and the ASX 50 Index for the five years 2013 to 2017 inclusive

A final benchmark is industry standards. Often, industry benchmarks can be obtained from financial websites and are especially useful when there is more than one main competitor.

The analysis in this text will use both intracompany and intercompany comparisons. Cochlear and CSL are used for intercompany comparisons. Even though comparison seems less ideal because they supply very different types of medical products (hearing implants versus vaccines and plasma), they are ideal to demonstrate the advantages of financial statement analysis due to their substantially different sizes. A comparison of the raw data in the financial statements may not yield much insight as Cochlear had total comprehensive income in 2017 of A$222 million compared to CSL's US$1510; however, analysis we have conducted in previous chapters, such as return on assets, makes the size and currency differences irrelevant.

ANALYSIS TOOLS

There are many tools used to conduct a financial analysis. Three of the more common are:

- horizontal analysis
- vertical analysis
- ratio analysis.

Horizontal analysis is a comparison of a company's financial results across time. Vertical analysis is a comparison of each line in the financial statement to a base account from the same financial statement. Ratio analysis is the comparison of items from the financial statements (and other financial information, such as share price) that are thought to be related (like a person's height and weight) to provide a more comprehensive understanding of the financial results. Typically, individual ratios are grouped together to assess various aspects (profitability, solvency etc.) of a company's financial performance and prospects.

The remainder of this chapter demonstrates and discusses horizontal, vertical and ratio analyses of Cochlear's 2017 financial statements and draws comparisons with CSL.

LO2 HORIZONTAL AND VERTICAL ANALYSES

HORIZONTAL ANALYSIS

Horizontal analysis was first introduced in Chapter 2. Recall that horizontal analysis is a technique that compares account balances over time. Horizontal analysis is a technique that calculates the change in an account balance from one period to the next and expresses that change in both dollar and percentage terms. The actual calculations are as follows:

KEY FORMULA 13.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

Horizontal analysis is a simple but powerful analytical tool. It reveals significant changes in account balances and therefore identifies items for further investigation. For example, a large increase in say carbon capture expense focuses attention on why this expense increased so much or how environmentally active the company has become. That is the nature of horizontal analysis – it often provides the right questions to ask, but care needs to be exercised not to immediately jump to obvious conclusions. Some large percentage changes may be the result of a very small expense in the previous financial year.

Horizontal analysis is calculated for both the balance sheet and the income statement. Changes in critical account balances, such as inventory for a manufacturer or liabilities for a company in financial trouble, are usually examined first. We also examine any significant changes in other account balances. Insignificant changes are often ignored because they would not affect decision-making. For example, an account that grows from $1 million to $3 million experiences a 200 per cent increase, but such an increase is immaterial to a $50 billion company.

Balance sheet horizontal analysis

Exhibit 13.2 contains a horizontal analysis of Cochlear's 2017 (and 2016) balance sheet. The analysis was undertaken on an Excel spreadsheet where the 2016 figure was subtracted from the 2017 figure to obtain the dollar change [=B5–C5] and then the percentage change by dividing the dollar change by the 2016 figure and rounding to two decimal places [=ROUND(D5/C5,2)]. We see Cash has increased 19 per cent.

The analysis shows mixed changes in asset accounts. Overall, Cochlear increased total assets by almost $180 million in 2017, which represents a 19 per cent expansion. Cochlear experienced the largest dollar change in intangible assets – increasing almost $116 million (52%) – but the largest percentage increase on the balance sheet was (current) loans and borrowings up over 2000 per cent (but less than $81m) increase. Caution must be exercised in looking only at the dollar change or only looking at the percentage change.

	A	B	C	D	E
1	**Cochlear Balance Sheet**				
2		**2017 $000**	**2016 $000**	**$change $000**	**%change**
3	ASSETS				
4	Current assets				
5	Cash and cash equivalents	89 540	75 417	14 123	0.19
6	Trade and other receivables	292 139	281 925	10 214	0.04
7	Forward exchange contracts	18 430	11 454	6 976	0.61
8	Inventories	160 011	154 103	5 908	0.04
9	Current tax assets	7 278	6 208	1 070	0.17
10	Prepayments	18 562	13 921	4 641	0.33
11	Total current assets	585 960	543 028	42 932	0.08
12	Non-current assets				
13	Other receivables	906	1 507	–601	–0.40
14	Forward exchange contracts	7 760	10 713	–2 953	–0.28
15	Property, plant and equipment	120 107	86 878	33 229	0.38
16	Intangible assets	339 976	224 338	115 638	0.52
17	Investments	15 064	13 755	1 309	0.10
18	Deferred tax assets	66 586	77 144	–10 558	–0.14
19	Total non-current assets	550 399	414 335	136 064	0.33
20	TOTAL ASSETS	1 136 359	957 363	178 996	0.19
21	LIABILITIES				
22	Current liabilities				
23	Trade and other payables	130 911	110 354	20 557	0.19
24	Forward exchange contracts	2 041	12 643	–10 602	–0.84
25	Loans and borrowings	84 687	3 978	80 709	20.29
26	Current tax liabilities	26 326	13 701	12 625	0.92
27	Employee benefit liabilities	52 412	45 485	6 927	0.15
28	Provisions	24 992	33 675	–8 683	–0.26
29	Deferred revenue	25 246	31 264	–6 018	–0.19
30	Total current liabilities	346 615	251 100	95 515	0.38
31	Non-current liabilities				
32	Trade and other payables	33 917	–	33 917	1.00
33	Forward exchange contracts	3 111	3 547	–436	–0.12
34	Loans and borrowings	134 235	189 260	–55 025	–0.29
35	Employee benefit liabilities	11 038	13 750	–2 712	–0.20
36	Provisions	54 711	44 027	10 684	0.24
37	Deferred tax liabilities	5 837	7 122	–1 285	–0.18
38	Deferred revenue	3 248	–	3 248	1.00
39	Total non-current liabilities	246 097	257 706	–11 609	–0.05
40	TOTAL LIABILITIES	592 712	508 806	83 906	0.16
41	NET ASSETS	543 647	448 557	95 090	0.21
42	EQUITY				
43	Share capital	169 367	158 940	10 427	0.07
44	Reserves	–12 801	–14 662	1 861	–0.13
45	Retained earnings	387 081	304 279	82 802	0.27
46	TOTAL EQUITY	543 647	448 557	95 090	0.21

EXHIBIT 13.2 Horizontal analysis of Cochlear Limited balance sheet as at 30 June 2017 and 2016

Source: Cochlear Limited, *Annual Report 2017*, p. 58.

Overall, total liabilities increased by 16 per cent (almost $84m) – a little less than total assets (19%). However, because the percentage increase in total liabilities was smaller than total assets, the percentage change in equity was greater (21%). In effect, Cochlear grew its assets by increasing equity ($95m) more than liabilities ($84m). Caution needs to be exercised when looking at percentage and dollar changes. If liabilities were $10 and equity $90, a $10 increase in liabilities would be 100 per cent, while a $45 increase in equity would only be 50 per cent. A more detailed examination of equity shows the increase in retained earnings (27%, $83m) was the main driver on increasing total equity. The fall in reserves, although 13 per cent (about half of the increase in retained earnings), was minor in dollar terms (less than $2m). The analysis of the balance sheet alone raises more questions: why did inventory increase only 4 per cent when total assets increased 19 per cent? The income statement may shed more light.

Exhibit 13.3 contains a horizontal analysis of a condensed version of Cochlear's 2017 and 2016 income statement and statement of comprehensive income.

Income statement horizontal analysis

The analysis shows that revenue increased 11 per cent while cost of sales increased only 7 per cent (but it should be noted COS is a relatively small percentage of sales (as we will explore later). This led to an 18 per cent increase in net profits, but only 13 per cent in total comprehensive income due to changes in the fair value of cash flow hedges (but not shown in the condensed version in Exhibit 13.3) – which is beyond our discussion in this book.

Revenue increased by 11 per cent while the percentage increase in expenses was lower, leading to a 20 per cent increase in results from operating activities. This demonstrates how smaller increases in expenses below the increases in revenue can have a substantial impact on results.

VERTICAL ANALYSIS

Vertical analysis was also introduced in Chapter 2. Recall that vertical analysis is a technique that compares account balances within one year. Formally, vertical analysis is an

	A	B	C	D	E
1	**Cochlear Income statement**				
2		**2017 $000**	**2016 $000**	**$ change $000**	**% change**
3	Revenue	1 253 838	1 130 552	123 286	0.11
4	Cost of sales	–358 373	–333 593	–24 780	0.07
5	Gross profit	895 465	796 959	98 506	0.12
6	Selling and general expenses	–348 928	–324 144	–24 784	0.08
7	Administration expenses	–83 474	–79 287	–4 187	0.05
8	Research and development expenses	–151 929	–145 080	–6 849	0.05
9	Other income	4 466	14 156	–9 690	–0.68
10	Results from operating activities	315 600	262 604	52 996	0.20
11	Finance income – interest	742	468	274	0.59
12	Finance expense – interest	–7 517	–8 806	1 289	–0.15
13	Net finance expense	–6 775	–8 338	1 563	–0.19
14	Profit before income tax	308 825	254 266	54 559	0.21
15	Income tax expense	–85 209	–65 345	–19 864	0.30
16	Net profit	223 616	188 921	34 695	0.18
17	Other comprehensive (loss)/income, net of tax	–1 608	6 904	–8 512	–1.23
18	Total Comprehensive Income	222 008	195 825	26 183	0.13

EXHIBIT 13.3 Horizontal analysis of Cochlear Limited (condensed) income statement (and comprehensive income) for the 2017 financial year

Source: Adapted from Cochlear Limited, *Annual Report 2017*, pp. 56–57.

analytical technique that states each account balance on a financial statement as a percentage of a base amount on the statement. The base account is total assets for the balance sheet and revenues for the income statement. The actual calculation is as follows:

KEY FORMULA 13.2 VERTICAL ANALYSIS

	For the balance sheet		For the income statement
Percentage =	$\frac{\text{Account Balance}}{\text{Total Assets}}$	or	$\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

Like horizontal analysis, vertical analysis is a simple but powerful tool. The dividing of each account balance by either assets or revenues accomplishes two purposes. First, it shows the relative importance of each account to the company. Second, it standardises the account balances by firm size so that companies of different sizes can be compared.

To illustrate, suppose a company with $10 million in total assets has $1 million in cash while another company with $100 billion in assets has $2 billion in cash. The $100 billion company has more cash, but it is also a much bigger company. A vertical analysis would show that the smaller company has 10 per cent of its assets in cash ($1/$10 = 10%) while the larger company has only 2 per cent of its assets in cash ($2/$100 = 2%). By dividing by total assets, the analysis makes possible a meaningful comparison of two companies of vastly different sizes. Because vertical analysis removes the effect of size (and for CSL and Cochlear, currency differences), an analysis conducted on a financial statement is appropriately called a common-size financial statement.

Balance sheet vertical analysis

Exhibit 13.4 contains a vertical analysis of Cochlear's 2017 and 2016 balance sheet. Percentage changes have been rounded to the closest 1 per cent.

The analysis shows large percentages of assets in trade and other receivables (2016 29%, 2017 26%) and intangible assets (2016 23%, 2017 30%). In contrast CSL in 2017 had 13 per cent of total assets in receivables and 12 per cent in intangibles. Here the advantage of vertical analysis is highlighted: Cochlear has $292 million in receivables; CSL (when converted to Australian dollars) has $1560 million, which reveals that Cochlear is holding over double the receivables of CSL as a percentage of total assets.

MAKING IT REAL

HEALTHCARE IS A GROWTH SECTOR

This Making it real box goes beyond simple financial statement analysis by adding sector-wide data.

Health insurance: Don't blame young people for your rising premiums[1]

In 2017 the Australian Government announced changes to slow the yearly bump in health insurance premiums, aimed mostly at young health insurance users. But do these measures address what is at the heart of the yearly premium increase?

These measures indicate the problem is that young people are not taking up or retaining private health insurance policies. This therefore means that the age groups who are more likely to claim are the biggest private health care users. This is somewhat supported by 'the proportion of insurance customers aged 20 to 29 falling from 10.3 per cent to 9.4 per cent over the last five years'.

However, this fact alone is not enough to justify the increases in premiums we are seeing. The real reason is simply that the costs of insuring customers is growing rapidly. 'Benefits paid per customer increased by around 4.7 per cent per year over the past five years … the number of hospital visits funded by health insurance increased by an average of 5.5 per cent per year over the past five years'.

This very issue is reflected in public health spending and so it seems this is more likely to be an overall trend than something that can be curbed. 'Australian government spending on health increased by 4.4 per cent in real terms in the decade to 2013–14.' And this trend is also seen worldwide, with OECD countries' health care spending growth at an average of 4 per cent in real terms.

So, it seems we are 'spending more on health care because it is increasingly valuable to us both as a society and as individuals taking out insurance contracts'.

iStock.com/Natali_Mis

	A	B	C	D	E
1	**Cochlear Balance sheet**				
2		**2017 $000**	**% Total assets**	**2016 $000**	**% Total assets**
3	ASSETS				
4	Current assets				
5	Cash and cash equivalents	89 540	0.08	75 417	0.08
6	Trade and other receivables	292 139	0.26	281 925	0.29
7	Forward exchange contracts	18 430	0.02	11 454	0.01
8	Inventories	160 011	0.14	154 103	0.16
9	Current tax assets	7 278	0.01	6 208	0.01
10	Prepayments	18 562	0.02	13 921	0.01
11	Total current assets	585 960	0.52	543 028	0.57
12	Non-current assets				
13	Other receivables	906	0.00	1 507	0.00
14	Forward exchange contracts	7 760	0.01	10 713	0.01
15	Property, plant and equipment	120 107	0.11	86 878	0.09
16	Intangible assets	339 976	0.30	224 338	0.23
17	Investments	15 064	0.01	13755	0.01
18	Deferred tax assets	66 586	0.06	77 144	0.08
19	Total non-current assets	550 399	0.48	414 335	0.43
20	TOTAL ASSETS	1 136 359	1.00	957 363	1.00
21	LIABILITIES				
22	Current liabilities				
23	Trade and other payables	130 911	0.12	110 354	0.12
24	Forward exchange contracts	2 041	0.00	12 643	0.01
25	Loans and borrowings	84 687	0.07	3 978	0.00
26	Current tax liabilities	26 326	0.02	13 701	0.01
27	Employee benefit liabilities	52 412	0.05	45 485	0.05
28	Provisions	24 992	0.02	33 675	0.04
29	Deferred revenue	25 246	0.02	31 264	0.03
30	Total current liabilities	346 615	0.31	251 100	0.26
31	Non-current liabilities				
32	Trade and other payables	33 917	0.03	-	0.00
33	Forward exchange contracts	3 111	0.00	3 547	0.00
34	Loans and borrowings	134 235	0.12	189 260	0.20
35	Employee benefit liabilities	11 038	0.01	13 750	0.01
36	Provisions	54 711	0.05	44 027	0.05
37	Deferred tax liabilities	5 837	0.01	7 122	0.01
38	Deferred revenue	3 248	0.00	-	0.00
39	Total non-current liabilities	246 097	0.22	257 706	0.27
40	TOTAL LIABILITIES	592 712	0.52	508 806	0.53
41	NET ASSETS	543 647	0.48	448 557	0.47
42	EQUITY				
43	Share capital	169 367	0.15	158 940	0.17
44	Reserves	-12 801	-0.01	-14 662	-0.02
45	Retained earnings	387 081	0.34	304 279	0.32
46	TOTAL EQUITY	543 647	0.48	448 557	0.47

EXHIBIT 13.4 Vertical analysis of Cochlear Limited balance sheet as at 30 June 2017 and 2016

Source: Cochlear Limited, *Annual Report 2017*, p. 58.

The analysis of liabilities and equity shows in 2017 over half (52%) of the company's assets are generated by liabilities, but this is a small decrease from 2016 (53%) with the majority of those liabilities in current trade and other payables (12%) and non-current loans and borrowings (also 12%). Between 2016 and 2017 the percentage of assets generated through equity increased marginally from 47 per cent to 48 per cent, which is exactly as expected given the marginal reduction in total liabilities. This takes us back to Chapter 1 where we first discussed Assets = Liabilities + Equity.

Overall, the vertical analysis shows a different balance sheet in contrast to CSL (see Chapter 2), where property, plant and equipment (PPE) (32%) and inventory (28%) were the largest assets. It also highlights CSL's greater reliance on debt (65%) compared to Cochlear (52%).

Income statement vertical analysis

Exhibit 13.5 contains a vertical analysis of Cochlear's 2017 and 2016 income statement (and comprehensive income).

The analysis shows cost of sales is only 29 per cent of revenue, leaving a gross profit of 71 per cent. This is much the same as 2016, but a higher (better) gross profit margin than CSL (54%). While both companies are in the health sector this difference reflects the different products that each company supplies, and no conclusions can be drawn about efficiencies.

At this point comparisons become more difficult. Both have research and development expenses – CSL 10 per cent; Cochlear 12 per cent. Other expenses are listed differently – CSL: selling and marketing expenses, and general and administration expenses: Cochlear: selling and general expenses, and administration expenses. Even a comparison of total comprehensive income requires care. Again, although both are health sector companies the 23 per cent for CSL compared to the 18 per cent for Cochlear may reflect different business models as much as different products. Some businesses rely on small profit margins and large turnovers (the sale of fuel by a service station), while others survive on high profit margins and small turnover (the convenience store side of a service station). Supermarkets thrive on low profit margins (around 5 per cent for the major Australian supermarkets) and very large turnovers. In all this analysis it is important to remember that when annual reports are available to the general public they are also available to competitors.

	A	B	C	D	E
1	**Cochlear Income statement**				
2		**2017 $000**	**% Revenue**	**2016 $000**	**% Revenue**
3	Revenue	1 253 838	1.00	1 130 552	1.00
4	Cost of sales	–358 373	–0.29	–333 593	–0.30
5	Gross profit	895 465	0.71	796 959	0.70
6	Selling and general expenses	–348 928	–0.28	–324 144	–0.29
7	Administration expenses	–83 474	–0.07	–79 287	–0.07
8	Research and development expenses	–151 929	–0.12	–145 080	–0.13
9	Other income	4 466	0.00	14 156	0.01
10	Results from operating activities	315 600	0.25	262 604	0.23
11	Finance income – interest	742	0.00	468	0.00
12	Finance expense – interest	–7 517	–0.01	–8 806	–0.01
13	Net finance expense	–6 775	–0.01	–8 338	–0.01
14	Profit before income tax	308 825	0.25	254 266	0.22
15	Income tax expense	–85 209	–0.07	–65 345	–0.06
16	Net profit	223 616	0.18	188 921	0.17
17	Other comprehensive (loss)/income, net of tax	–1 608	0.00	6 904	0.01
18	Total Comprehensive Income	222 008	0.18	195 825	0.17

EXHIBIT 13.5 Vertical analysis of Cochlear's income statement

Source: Adapted from Cochlear Limited, Annual Report 2017, pp. 56–7.

LO3 PROFITABILITY ANALYSIS

One of the most important aspects of any financial analysis is profitability. Everyone associated with a company – shareholders, creditors, employees and suppliers – all want the company to generate profits; because without profits the business will (eventually) cease. To determine a company's profitability, one can look at profits (or total comprehensive income); but that tells only a portion of the story. It does not reveal how efficiently and effectively those profits were generated. To find out, one must compare profits to other company values such as sales, assets, equity, share capital and market prices.

The following ratios are commonly used to analyse profitability. Note that each ratio compares profits to some other financial aspect of the company. In each case we will use 'total comprehensive income', because this is the figure usually quoted as a company's 'bottom line profit'. Because each ratio reveals something different about a company's profit, they are best used in tandem so that a broad understanding of a company's profitability can be obtained.

Profitability ratio	Relationship
Profit margin	Profit to sales
Return on equity	Profit to average total (shareholders') equity
Return on assets	Profit to average total assets
Earnings per share	Profit to issued shares
Price to earnings	Profit to share price

In the following sections, the text will explain each ratio and show the calculations for Cochlear. Unless otherwise noted, data for each calculation is obtained from Exhibits 13.2 and 13.3. After the calculation of Cochlear's ratios, CSL's ratios will be provided for comparison purposes. Then a summary of what was learned from the ratios about the two companies' profitability will be discussed.

PROFIT MARGIN

profit margin ratio Compares comprehensive income to net sales and measures the ability to generate profits from sales.

The **profit margin ratio** compares profits to net sales. A higher ratio indicates a greater ability to generate profits from sales. Figures are rounded to the nearest million dollars, for ease of calculation. The rounding also acknowledges judgement and choices in accounting, which means the numbers are often not mathematically precise, but not *materially* misstated. Results are usually reported to one decimal place because ratios are guides, unlike, for example, Olympic results where gold medals can be decided by one thousandth of a second.

KEY FORMULA 13.3 PROFITABILITY RATIOS: PROFIT MARGIN

$$\text{Profit Margin} = \frac{\text{Total Comprehensive Income}}{\text{Revenue}}$$

Cochlear 2017: $\frac{222}{1254}$ 17.7%

	2017	2016
Cochlear	17.7%	17.3%
CSL	21.8%	17.1%

Cochlear's 2017 profit margin is 17.7 per cent, meaning that the company generated a little under eighteen cents of profit for every dollar of revenue in 2017. This is a marginal improvement on 2016, but shows Cochlear did not have the substantial increase experienced by CSL. Both companies' annual reports highlight improvement in 2017, especially CSL; its first 'Business Highlight' was 'CSL reports net profit after tax …'

RETURN ON EQUITY

return on equity ratio Compares comprehensive income to average shareholders' equity and measures the ability to generate profits from equity.

The **return on equity ratio** compares comprehensive income to the average balance in (shareholders') equity during the year. The ratio represents how effectively a company uses the resources (equity) provided by shareholders during the year to generate additional resources for its owners. Shareholders naturally want this ratio to be as high as possible.

KEY FORMULA 13.4 PROFITABILITY RATIOS: RETURN ON EQUITY

$$\text{Return on Equity} = \frac{\text{Total Comprehensive Income}}{\text{Average Shareholders Equity}}$$

Where average shareholders' equity is as follows:

$$\frac{(\text{Beginning equity} + \text{Ending equity})}{2}$$

Cochlear 2017: $\frac{222}{(449 + 544)/2} = 44.7\%$

	2017
Cochlear	44.7%
CSL	52.7%

In Australia companies are required to show the figures for the current and previous year. This means if we wished to calculate any ratio involving averages, we would need the previous financial statements to obtain the opening balance for this year.

The 2017 ratio of 44.7 per cent shows that Cochlear generated almost 45 cents in profits for every dollar of resources provided by shareholders. This is lower than CSL, but still substantially higher than the average return on equity for Australian companies of around 10 per cent. The result may be due, at least in CSL's case, to the semi-regular share buybacks and for both companies the high 'gearing', as discussed later in the chapter (LO5 Solvency analysis).

RETURN ON ASSETS

return on assets ratio Compares comprehensive income to average total assets and measures the ability to generate profits from assets.

The **return on assets ratio** compares returns (comprehensive income) to average total assets during the year. It represents a company's ability to generate profits from its entire resource base, not just those resources provided by owners. Like the return on equity, investors would like the ratio as high as possible.

KEY FORMULA 13.5 PROFITABILITY RATIOS: RETURN ON ASSETS

$$\text{Return on Assets} = \frac{\text{Total Comprehensive Income}}{\text{Average Total Assets}}$$

Where average total assets is as follows:

$$\frac{(\text{Beginning Total Assets} + \text{Ending Total Assets})}{2}$$

$$\text{Cochlear 2017: } \frac{222}{(1136 + 957)/2} = 21.2\%$$

	2017
Cochlear	21.2%
CSL	18.9%

The 2017 ratio of 21.2 per cent shows Cochlear generated over 21 cents in profits for every dollar of assets possessed during the year; slightly more than CSL. This result is not surprising given Cochlear has large intangible assets that it has researched and developed rather than purchased, and as such a large amount of intellectual property is not recorded on the balance sheet. CSL has similar research and development. The accounting standards do not allow research costs to be recorded as an asset or 'capitalised' to a limited extent, but does allow this with all development costs.

Sometimes the return on assets is calculated using earnings before interest and tax (EBIT). This is used to measure how efficiently management is using assets and to remove the effect of borrowings (interest expense) and taxes that are levied on taxable income rather than accounting profit.

EARNINGS PER SHARE

Earnings per share (EPS) compares a company's profit to the average number of ordinary shares issued during the year. The ratio represents the return on each share owned by an investor. Although companies normally disclose EPS on their income statement, the calculation will be demonstrated nonetheless.

The beginning and ending outstanding shares might be collected from the notes to the accounts but this does not give a weighted average. Most companies show how their EPS are calculated and the weighted average number of shares is given (for Cochlear, Note 2.5: Equity and reserves, shows the weighted average shares in 2017 as 57.4 million shares issued).

KEY FORMULA 13.6 PROFITABILITY RATIOS: EARNINGS PER SHARE

$$\text{Earnings per Share} = \frac{\text{Total Comprehensive Income}}{\text{Average Number of Ordinary Shares}}$$

Where the average number of ordinary shares is as follows:

$$\frac{(\text{Beginning Balance of Ordinary Shares} + \text{Ending Balance of Ordinary Shares})}{2}$$

$$\text{Cochlear 2017: (all figures in millions) } \frac{222}{57}$$

$$= \$3.89 \text{ per share}$$

This is very similar to the figure provided by Cochlear who calculated EPS on 'net profits attributable to equity holders of the parent entity' and did not include other comprehensive income of minus $1.6 million, which in 2017 was immaterial. This was not the case in 2016 when other comprehensive income added almost 4 per cent to total comprehensive income, nor for CSL when it added over 11 per cent. Therefore, the figure shown here for CSL is significantly different to CSL's calculation in its annual report which is based on net profits. Cochlear, like other listed companies, also reports 'diluted EPS'. Diluted EPS takes into account options that have been issued, but is beyond the scope of our analysis here.

Note that an EPS has not been included for comparison with CSL. While it is very useful comparing Cochlear's 2016 figure ($196 / 57.1 = $3.43 per share) to the 2017 figure to show the substantial increase ($0.46 or 13.4%), comparing CSL EPS of $3.31 (or $2.94 as calculated in its annual report, not including comprehensive income) is meaningless because ownership in companies is divided into different numbers of shares. If a company were to split its shares as we saw in Chapter 11 and profits were to remain the same, the EPS would halve. Further CSL's EPS is in US dollars, which could be easily converted into Australian

dollars, but a simple comparison of figures from the annual report makes such a comparison even more meaningless.

EPS is useful because it reduces a number such as $222 million or 1.5 billion into an easily comprehensible $2 or $3 per share figure. For a shareholder with 1000 shares, they know their share of the profit is only $2000. EPS is vital for probably the single most quoted ratio of a listed company; price earnings ratio.

We have chosen to use total comprehensive income rather than net profits because Accounting Standard AASB 101 *Presentation of Financial Statements*:

> prescribes the basis for presentation of general purpose financial statements to ensure comparability both with the entity's financial statements of previous periods and with the financial statements of other entities. It sets out overall requirements for the presentation of financial statements, guidelines for their structure and minimum requirements for their content.[2]

All public companies need to report comprehensive income.

Alamy Stock Photo/360b; Courtesy CSL

CSL Cochlear and CSL operate in the same health sector, not as direct competitors, but they do compete for similar investors

PRICE TO EARNINGS RATIO

price to earnings (P/E) ratio Compares comprehensive income to a company's share price and provides an indication of investor perceptions of the company.

The **price to earnings ratio (P/E) ratio** compares profits to the current market price of the company's ordinary shares. Because a company's share price represents the value per share, the ratio uses EPS rather than total profits. It is also the first ratio in which profits are in the denominator rather than the numerator. That is why the ratio is called price to earnings rather than earnings to price.

Because the P/E ratio uses share prices, it provides an indication of current investor perceptions of the company. For example, a P/E ratio of 10 means that investors are willing to pay 10 times current EPS to buy one share. A higher P/E ratio generally indicates that investors are more optimistic about the future prospects of a company, and a lower ratio is the reverse. (If you, as a student, sold your future earnings stream you could expect a very high P/E ratio as you are forgoing current earnings to invest in yourself, which should result in substantially higher future earnings compared to current earnings.)

KEY FORMULA 13.7 PROFITABILITY RATIOS: PRICE EARNINGS RATIO

$$\text{Price to Earnings Ratio} = \frac{\text{Current Share Price}}{\text{Earnings per Share}}$$

The following calculation of Cochlear's 2017 P/E ratio uses the $155.45 share price at the close of business on 30 June 2017, the end of the company's financial year (and the last trading day of the financial year).

	2017
Cochlear	40
CSL	42

Cochlear's ratio of 40 shows that a share of Cochlear was selling for 40 times EPS at the close of the 2017 financial year. While we cannot compare one company's EPS to another, we can make valid comparisons of P/E ratios. It would appear investors have marginally more confidence in the future prospects of CSL (P/E 42) when compared to Cochlear, but the difference is small and you should not read too much into this. The higher the P/E ratio the more confidence shareholders have in the future. These two companies can be expected to have substantially increased earnings in future years. These P/E ratios are unlikely to be the same as current quoted P/E ratios, because it is no longer 30 June 2017 and the ratios are usually calculated on profits not comprehensive income as we have done here.

These ratios are significantly higher than the average P/E ratio of 16 for the top 50 companies listed on the ASX. For comparison, let us look at the supermarkets; Woolworths and Wesfarmers (Coles) had P/E ratios of 22 and 19 respectively at the same time. This indicates either their current profits are prudently (conservatively) calculated and/or investors expect the future earnings of these retailers to be better than present earnings, but not as prudent as/better than our two health sector companies. Cochlear's and CSL's earnings are likely to be prudently stated because much of the research and development expenditure is currently expensed when it is likely to (1) not yield immediate benefits and (2) only be undertaken if the expected future payoffs are greater than the expenditure.

SUMMARY OF PROFITABILITY

Based on the five ratios examined, it is clear that Cochlear is profitable and that its profitability has increased over the two years. The Chairman's report began with 'Cochlear reported a record net profit of $224 million, an increase of 18% on the FY16 result …'[3] This is a trend to watch closely, especially in an industry that depends on prosperity and health priorities.

CSL ANALYSIS

Because we have already calculated profitability ratios for CSL in 2017, obtain a copy of CSL's previous Annual Report. Using this information, calculate CSL's profitability ratios and make a general assessment about the company's profitability.

Analysis:

CSL's share price closed on 30 June 2016 at $112.18.

Profit margin has been calculated above: $1044 ÷ $5910 = 17.7%

Return on equity: Total comprehensive income / Average (shareholders') equity = $1044 ÷ [($2747 + $2567) ÷ 2] = 39.3%

Return on assets: Total comprehensive income / Average Total Assets = $1044 ÷ [($6401 + $7563) ÷ 2] = 14.9%

Earnings per share: Total comprehensive income / Average Issued Shares = $1044 ÷ [(465 + 457) ÷ 2] = $2.26

(Here we have used the opening and closing balances which ended up being one million shares less than the CSL reported weighted average.)

Price to earnings ratio: Share Price/Earnings per Share = $112.18 ÷ $2.26 = 29.6

CSL showed many positive signs of profitability growth between 2016 and 2017. All ratios have increased, none more so than EPS up from $2.26 to $3.31 (46% increase) and the P/E ratio up from 29.6 to 42.0 (42% increase). It seems obvious now why the share price rose substantially in the 2017 financial year, but caution needs to be exercised when trying to out-predict the share market. It has been said that no one rings a bell when a stock market reaches its highest point, nor when the market bottoms. What will be the price in June 2020?

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LO4 LIQUIDITY ANALYSIS

A major concern in any financial analysis is an assessment of a company's liquidity, which refers to the ability of a company to satisfy its short-term obligations. A company must maintain the ability to pay its liabilities as they come due. Failing to do so can result in additional expenses and, ultimately, bankruptcy. As a result, everyone associated with a company – shareholders, creditors, employees, suppliers – wants to see adequate liquidity.

The following ratios are commonly used to assess a company's liquidity. While each ratio reveals information on its own, using the ratios together provides a much richer understanding of liquidity. Note that each ratio focuses on some aspect of either current liabilities or current assets.

Liquidity ratios	Relationship
Current ratio	Current assets to current liabilities
Quick ratio	Cash-like assets to current liabilities
Receivables turnover ratio	Sales (Revenue) to accounts receivable
Inventory turnover ratio	Cost of goods sold to inventory

As in the previous section on profitability, the following sections will explain and calculate each ratio for Cochlear using data from Exhibits 13.2 and/or 13.3. A comparison of Cochlear's and CSL's ratios will follow each calculation. After all ratios are presented, a summary of what has been learned about Cochlear's liquidity will be provided.

CURRENT RATIO

The current ratio is one of the most frequently used ratios in financial analysis. It compares current assets to current liabilities. It therefore compares assets that are cash or should be turned into cash within one year to liabilities that should be paid within one year. A higher ratio indicates more assets available to satisfy current obligations and therefore greater liquidity.

KEY FORMULA 13.8 LIQUIDITY RATIOS: CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Cochlear 2017: $\frac{586}{347} = 1.7$ times

	2017	2016
Cochlear	1.7	2.2
CSL	2.8	2.8

Cochlear's ratio of 1.7 shows that it had $1.70 in current assets for every dollar of current liabilities. This is less than both the prior year, and CSL's ratios. This means that Cochlear is becoming more liquid over time.

While the trend in liquidity should be monitored, a ratio near two may, by some unsophisticated analysts, be considered ideal. Some investors may be critical of maintaining a current ratio that is too high. They would rather the company keep only an adequate amount of assets in current assets and invest the rest in more productive and higher-yielding assets such as PPE, or intangibles like intellectual property. Current ratios will 'improve' when sales slow, because inventory (current asset) increases. Further for most individuals and businesses future earnings are likely to be the main source of resources to pay future debts. We may need to look at a more critical liquidity measure such as the quick ratio.

QUICK RATIO

While the current ratio is a useful measure of liquidity, it does have some limitations. In particular, current assets often include inventory that must be sold before cash can be generated to pay off current liabilities. Because of this, several additional ratios are used to provide more detail regarding a company's liquidity. One is the **quick ratio**, which compares a company's cash and 'near-cash assets', called *quick assets*, to its current liabilities. Quick assets include cash, short-term investments and accounts receivable. Sometimes called the acid-test ratio, the quick ratio measures the degree to which a company could pay off its current liabilities in a few weeks rather than many months. Like the current ratio, a higher quick ratio indicates greater liquidity.

quick ratio Compares cash and near-cash assets to current liabilities and measures the ability to pay current liabilities immediately.

KEY FORMULA 13.9 LIQUIDITY RATIOS: QUICK RATIO

$$\text{Quick Ratio} = \frac{\text{Cash + Short-term Investments + Accounts Receivable}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio Simple Calculation} = \frac{\text{Current Assets – Inventory}}{\text{Current Liabilities}}$$

We have adopted the simpler calculation of Current Assets less Inventory divided by Current Liabilities which gives us the same (or similar) answer:

$$\text{Cochlear 2017: } \frac{(586 - 160)}{347} = 1.2$$

	2017	2016
Cochlear	1.2	1.5
CSL	1.3	1.2

These low ratios are not surprising given manufacturers' major current asset is inventory. Cochlear's ratio of 1.2 shows that at the end of its financial year, the company had $1.20 in cash and near-cash assets for every dollar of current liabilities. This indicates that Cochlear could easily pay its current liabilities if they came due in the next few weeks, assuming it could rapidly collect its accounts receivable. Note in passing, the quick ratio for CSL is substantially lower than its current ratio, while the impact on Cochlear is not so pronounced. This is due to the larger percentage inventory make-up of CSL's current assets compared to Cochlear's.

RECEIVABLES TURNOVER RATIO

The receivables turnover ratio compares a company's credit sales during a period to its average accounts receivable balance during that period. It measures a company's ability to make and collect sales. A higher turnover ratio means that the company is better able to generate and collect sales. Therefore, a higher ratio generally leads to better liquidity. The ratio uses net sales as a substitute because credit sales are not usually reported by companies. In the case of a biotechnology manufacturer such as Cochlear or CSL, credit sales are likely to make up most of net sales. For a retailer like Woolworths net sales are likely to be a very poor substitute.

KEY FORMULA 13.10 LIQUIDITY RATIOS: RECEIVABLES TURNOVER RATIO

$$\text{Receivables Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Accounts Receivable}}$$

Where average accounts receivable is:

$$\frac{\text{(Opening Balance of Accounts Receivable + Closing Balance of Accounts Receivable)}}{2}$$

$$\text{Cochlear 2017: } \frac{1254}{(282 + 292)/2} = 4.4 \text{ times per year or a turnover of 83 days } (365 / 4.4)$$

CSL has a turnover of 6.1 times a year or once every 60 days.

In a business where the majority of sales or services are provided on credit, trends in accounts receivables turnover ratios often can indicate whether management is keeping good control of the credit department (responsible for determining which customers are allowed to buy now and pay later) and the collections department (responsible for collecting the money from customers who were supposed to pay later).

INVENTORY TURNOVER RATIO

The inventory turnover ratio compares a company's cost of goods sold during a period to its average inventory balance during that period. It reveals how many times a company can sell its average inventory balance in a period. In general, companies want this ratio to be higher because it indicates that the company sold more inventory while maintaining less inventory on hand. This means that the company generated more sales revenue while reducing the costs of stocking inventory on the shelves; but a fast turnover might also indicate a business is not holding some items and missing out on potential sales. For CSL holding stock of vaccines in case of epidemics may be important not just

for profits but for humanitarian reasons and also for maintaining a reputation for reliability of supply.

KEY FORMULA 13.11 LIQUIDITY RATIOS: INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Where average inventory is as follows:

$$\frac{\text{Beginning inventory} + \text{Ending inventory}}{2}$$

$$\text{Cochlear 2017: } \frac{358}{(160 + 154)/2} = 6.3 \text{ times}$$

	2017
Cochlear	6.3
CSL	1.4

A 6.3 ratio shows that during 2017 Cochlear sold over $6 of inventory for every $1 of inventory it had on average on its shelves. Unlike supermarkets that are likely to closely examine their competitors' inventory turnover ratio, companies in this sector have vastly different biotechnology inventory and no comparisons can be drawn. Inventory turnover is product specific; newspapers turn over daily, while car parts for older model cars may turn over once every five or so years.

SUMMARY OF LIQUIDITY ANALYSIS

Based on the four ratios examined, it appears that Cochlear has sufficient liquidity. The largest current assets are tied to accounts receivable, so for Cochlear, keeping an eye on this turnover is important. For CSL the major asset is inventory and this turnover is critical. While it is commendable/advisable to keep stocks for the good of humanity and reputation for reliability of supply, having large quantities of inventory approaching the use-by- date could be a concern.

CSL ANALYSIS

Using CSL's information from its 2016 Annual Report, calculate CSL's inventory turnover ratio and make an assessment about the company's liquidity compared to 2017.

Analysis:

Inventory turnover = Cost of Goods Sold/ Average Inventory = $3035 / ($2352 + $1756) / 2 = 1.6 (in 2015 the figure was 1.5)

CSL appears to be maintaining around eight months of average inventory levels over the three years. In the 2017 annual report CSL recognises the vulnerability of inventory and discusses it as one of its key manufacturing and supply risks.

LO5 SOLVENCY ANALYSIS

A third component of any financial analysis is an examination of solvency, which refers to a company's ability to satisfy its long-term obligations. If a company cannot satisfy its obligations and becomes *insolvent*, it can fall into bankruptcy, which can result in significant losses to investors and creditors. Therefore, both investors and creditors are interested in assessing solvency.

A company's solvency is related to its use of **financial leverage**, which is the degree to which a company obtains capital (funds) through debt rather than equity in an attempt to increase returns to shareholders. Leverage is beneficial to shareholders when the return on borrowed funds exceeds the cost of borrowing those funds. In that case, leverage is positive. It is harmful, or negative, when the cost of borrowing the funds exceeds the return on those borrowed funds. As a company uses more financial leverage, it creates an opportunity for greater returns to shareholders, but it also creates greater solvency risk.

financial leverage The degree to which a company obtains capital through debt rather than equity in an attempt to increase returns to stockholders.

A simple example will demonstrate this. If a company commences by selling one $1 share and borrows $9 it would have $10 of assets financed 90 per cent from borrowings and 10 per cent equity, and have a debt to equity ratio of 9:1. If it invests the $10 and earns a return on assets of 10 per cent it would have $10 ($100 x 0.1) of revenue. Further assume its only expense is interest of 5 per cent on the money borrowed. Expenses are $4.50 ($90 x 0.05) and therefore profits $5.50 ($10 – $4.50). This provides a return on equity of 55 per cent ($5.50 / $10). But what happens if the assets only earn a 2 per cent return (ROA = 2%). Revenue is $2 ($100 x 0.02), expenses remain $4.50 giving a loss of $2.50 ($2.00 – $4.50). While ROA is small but positive, ROE is negative 25 per cent (–$2.50 / $10). Financial leverage is neither good nor bad, just risky.

Although it is impossible to know whether a company will or will not be able to pay future obligations and remain solvent, the following three ratios can provide some indication of a company's general solvency:

Solvency ratios	Relationship
Debt to assets	Total liabilities to total assets
Debt to equity	Total liabilities to total equity
Times interest earned	Income to interest expenses

As in the previous sections, the following sections will explain and calculate each ratio for Cochlear using data from Exhibits 13.2 and/or 13.3. A comparison of Cochlear's and CSL's ratios will follow each calculation. After all ratios are presented, a summary of what was learned about Cochlear's solvency will be provided.

DEBT TO ASSETS RATIO

The debt to assets ratio compares a company's total liabilities to its total assets and yields the percentage of assets provided by creditors. As such, the ratio provides a measure of a company's capital structure. Capital structure refers to the manner in which a company has financed its assets – either through debt or equity – and how much financial leverage a company is using. Since debt and any related interest must be repaid, companies with a higher percentage of assets provided by creditors may be seen as having a 'riskier' capital structure. In other words, it is using more financial leverage, and therefore has a greater risk of insolvency (but also potentially, the 'risk' of greater returns).


Alamy Stock Photo/Benny Marty

Will a company have the cash to pay back its debts?

KEY FORMULA 13.12 SOLVENCY RATIOS: DEBT TO ASSETS RATIO

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

$$\text{Cochlear 2017: } \frac{593}{1136} = 0.52$$

	2017	2016
Cochlear	52%	53%
CSL	65%	66%

Cochlear's ratio of 52 per cent (or 0.52) shows over half its assets are financed by debt. For CSL the figure is close to two thirds. These ratios have decreased marginally since 2016 for both companies. If there were not advantages in borrowing then few businesses would have debt (liabilities). From a personal perspective it may be considered 'good' to be debt free, but many students within 10 years of graduating may borrow to buy their own home, pushing their debt to asset ratio to 80 per cent (borrow $800 000 to buy $1 000 000 home) or even higher. Debt is not good or bad, debt brings increased risk. With shareholders a dividend is paid if a company makes a profit, but debt-holders require interest regardless of the prosperity of the business.

DEBT TO EQUITY RATIO

The **debt to equity ratio** compares a company's total liabilities to its total equity. Exactly like the debt to assets ratio, this ratio provides a measure of a company's capital structure and financial leverage, but by directly comparing the two aspects of capital structure: liabilities and equity. As with the debt to asset ratio a higher debt to equity ratio indicates a riskier capital structure and therefore greater risk of insolvency. Companies with higher debt to equity ratios are also said to have high leverage.

debt to equity ratio Compares total liabilities to total equity and measures a company's capital structure and financial leverage.

KEY FORMULA 13.13 SOLVENCY RATIOS: DEBT TO EQUITY RATIO

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

$$\text{Cochlear 2017: } \frac{593}{544} = 1.1$$

The 1.1 per cent indicates that for $1 of equity there is $1.10 of debt. The debt to equity ratio is simply a rearrangement of the debt to asset ratio. If assets are financed 52 per cent by debt they must be financed 48 per cent by equity (given the balance sheet equation from Chapter 1: A = L + E). If debt is $52 and equity $48 then the debt to equity ratio is 52 / 48 = 1.08 or rounded to 1.1. The debt to assets and debt to equity ratios are simply different perspectives of exactly the same capital structure; therefore, the debt to equity ratio tells us nothing more about Cochlear's and CSL's solvency than the debt to asset ratio. We could also calculate an equity to asset ratio, which if added to the debt to asset ratio always equals 100 per cent (because assets are financed by either debt or equity – no other sources).

TIMES INTEREST EARNED

In addition to examining a company's capital structure, it is wise to assess whether a company can pay the interest on its debt. Simply because a business has a low debt ratio does not mean it is generating enough revenue to pay all expenses. To answer this question, many use the times interest earned ratio.

The **times interest earned ratio** compares a company's profits to its interest expense. It shows how easily a company can pay interest out of current-year earnings. As such, it helps creditors and investors determine whether a company can service its current debt by making its required interest payments. The numerator is often expressed as EBIT and calculated as profits plus interest plus tax (total comprehensive income or profits has already deducted

times interest earned ratio Compares income to interest expense and measures the ability to pay interest out of current earnings.

interest and tax, so we add them back to get EBIT). It is what a company's profit (comprehensive income) would be if it paid no interest and no tax.

Let us return to the individual (or couple or group) borrowing to buy a home. First, the financial institution (bank) will not lend more than the net proceeds from the future sale of the home (in case it has to repossess and sell the property). Second, the financial institution will usually have restrictions on the amount that repayments are allowed to take up of disposable income. This is a concept very similar to the 'times interest earned ratio', especially at the beginning of a home loan when the vast majority of the repayment is interest.

KEY FORMULA 13.14 SOLVENCY RATIOS: TIMES INTEREST EARNED RATIO

$$\text{Times Interest Earned Ratio} = \frac{\text{Total Comprehensive Income + Interest Expense + Income Tax Expense}}{\text{Interest Expense}}$$

Note that the ratio adjusts income by adding back interest expense (finance costs) and income tax expense. These are added back to 'gross up' income to the amount of earnings that were available to make interest payments (before interest is paid and before tax because if you were paying out all your EBIT in interest payments there would be no earnings and so no tax to pay). Once this adjustment is made, the ratio yields the number of times that current interest payments could be made out of current earnings. A higher ratio indicates a greater ability to make payments, and therefore less risk of insolvency. A high ratio may also indicate an overly cautious approach to the business and that excellent available opportunities are not being taken advantage of.

EBIT is a difficult concept and may take some time to grasp. Further when extracting the numbers from published financial statements often the words 'interest expenses' are not used more often than 'finance costs'.

Cochlear 2017: $\frac{(2706 + 346 + 939)}{346}$ 222 + 8 + 85 / 8 = 39 times

	2017	2016
Cochlear	39	30
CSL	22	20

Cochlear's ratio of 39 indicates that the company earned many times more than its interest expense. Specifically, for every dollar of interest expense, the company earned almost $40 in profits. CSL's ratio, although lower, is still very high, which is curious given its higher debt ratio. Financial institutions often use a similar ratio when individuals seek a home loan. The amount of monthly repayments is limited to a percentage of disposal income. Because interest on home loans is not tax deductible in Australia, after-tax income is usually used and ratios of three may be considered prudent. During the 2016 and 2017 property price 'boom' the Reserve Bank of Australia was suggesting banks needed to be more cautious with respect to both household debt ratios and times interest earned ratios (usually referred to as the percentage of disposable income consumed by repayments). The former is important when (not if) property prices fall, and the latter when interest rates rise and/or household income falls.

SUMMARY OF SOLVENCY

Based on the three ratios examined, it appears that both companies' capital structure is trending toward a little less debt. Thus, its solvency risk has decreased marginally. This chapter is a brief introduction to financial statement analysis and has involved a number of simplifications. Caution should be exercised in reading too much into the superficial analysis we have conducted on Cochlear and CSL.

Download the Enrichment Modules for further practic APPLY THIS

LO6 DUPONT ANALYSIS

All investors want to maximise the returns on their investments in a company. An investor's return is measured by the return on equity. To better understand how the return was generated, investors may conduct a DuPont analysis.

A **DuPont analysis** provides insight into how a company's return on equity was generated by decomposing the return into three components: operating efficiency, asset effectiveness and capital structure. The actual calculations of the analysis are as follows:

DuPont analysis Decomposes a company's return on equity into measures of operating efficiency, asset effectiveness and capital structure.

KEY FORMULA 13.5 DUPONT ANALYSIS

$$\underbrace{\frac{\text{Total Comprehensive Income}}{\text{Sales}}}_{\text{Operating Efficiency}} \times \underbrace{\frac{\text{Sales}}{\text{Assets}}}_{\text{Asset Effectiveness}} \times \underbrace{\frac{\text{Assets}}{\text{Equity}}}_{\text{Capital Structure}} = \underbrace{\frac{\text{Total Comprehensive Income}}{\text{Equity}}}_{\text{Return on Equity}}$$

The first component is a company's operating efficiency. It is calculated as comprehensive income divided by sales, which is also known as the profit margin ratio. This component reveals a company's ability to earn profits from sales. The higher the ratio, the more efficient a company is at turning sales into profits. But remember, different companies adopt different business models and may achieve their financial goals by reducing profit margins and increasing turnover (sales revenue) to more than compensate. We calculated this ratio earlier in this chapter.

The second component is a company's effectiveness at using its assets. It is calculated as sales divided by assets. This ratio is commonly known as the asset turnover ratio. It measures the ability of a company to generate sales from its asset base. The higher the ratio, the more effective a company is in generating sales given its assets (or the lower the carrying amount of assets, due to old assets being recorded at historic cost or assets such as internally generated intangibles not being recorded). Both CSL and Cochlear appear to have little of their intellectual property recorded and as such have a low asset figure. In contrast a company like Westfield, that owns many shopping centres (PPE), has an asset turnover of less than 15 per cent. Asset effectiveness is as much about the operating model of a business and may explain why many businesses lease property rather than buy. While Cochlear has 14 per cent of assets in PPE, CSL has 32 per cent, which may be a function of the requirement for specialist PPE or a strategy of owning rather than renting.

The third component is a company's capital structure. For this analysis, it is calculated as assets divided by equity. This ratio is similar to the debt to assets and debt to equity ratios in that it measures how a company has financed its assets. The higher the ratio, the more a company is financing its assets with debt rather than equity. So, a higher ratio means more financial leverage and a *riskier* capital structure. Sometimes, this ratio is called the leverage multiplier.

Another measure of performance is Economic Value Added, which compares profits before interest with the cost of capital on equity and interest-bearing liabilities. The cost of capital is the return required by resource providers. If a business cannot add value it should return the funds to the providers to be used more economically elsewhere.

For listed companies, current share price reflects all publicly available information. It is unlikely from the simple analysis undertaken in this chapter that you will discover overpriced or underpriced shares. The aim of this chapter as the conclusion to introductory financial accounting is to better understand how the financial reports are used and why production of the financial statements is critical to a well-functioning capital market. This is only the start of the journey.

Now you have made it to the end – welcome to the wonderful world of accounting.

Test your understanding with the online revision quizzes for this chapter

EXERCISES

1 Financial statement analysis

LO1

Financial statement analysis is defined as the process of applying analytical tools to a company's financial statements to understand the company's financial health.

REQUIRED

Identify and briefly describe the three items required to conduct successful financial statement analysis. Why are these items needed?

2 Calculate inventory turnover ratio

LO4

In 2019, Rose Rug Rats generated net sales of $1 136 000 and cost of goods sold of $657 000. Ralph's average inventory of rugs during the year was $86 600.

REQUIRED

Calculate Rose's inventory turnover ratio for the year and briefly explain what the result means.

3 Calculate times interest earned ratio

LO5

Chen Carpet Cleaning Service has total comprehensive income of $125 600 in 2019. Interest expense was $12 550 during the year, and income tax expense was $42 000.

REQUIRED

Calculate Chen's times interest earned ratio and briefly explain the result.

4 Horizontal and vertical analysis

LO2

The following asset information is available for Wakefield Automotive:

	2019	2018
Cash	$ 105 000	$ 180 000
Accounts receivable	180 000	165 000
Inventory	375 000	525 000
Total current assets	$ 660 000	$ 870 000
Property and equipment	525 000	450 000
Total assets	$1 185 000	$1 320 000

REQUIRED

a Calculate a horizontal analysis of Wakefield's assets.

b Calculate a vertical analysis of Wakefield's assets.

5 Horizontal and vertical analysis

LO2

The statements of comprehensive income of the Brancatisano company for the past two years are as follows:

Statements of comprehensive income For the years ending 30 June		
	2021	2020
Revenues	$300 000	$250 000
Cost of goods sold	125 000	100 000
Gross profit	$175 000	$150 000
Operating expenses	75 000	50 000
Profits before interest and taxes	$100 000	$100 000
Interest expense	35 000	15 000
Profits before taxes	$ 65 000	$ 85 000
Income tax expense	25 000	30 000
Comprehensive income net of tax	3 000	7 000
Total comprehensive income	$ 43 000	$ 62 000

REQUIRED

Calculate and interpret a horizontal and vertical analysis of Brancatisano's income statements.

6 Vertical analysis

LO2

The following asset information is available for Samantha Limited:

	2020	2019
Cash	$ 15 000	$ 10 000
Accounts receivable	30 000	25 000
Inventory	75 000	75 000
Total current assets	120 000	110 000
Property and equipment	205 000	210 000
Total assets	$325 000	$320 000

REQUIRED

Calculate a vertical analysis of assets for both years. Comment on any differences that may be material.

7 Interpret vertical analysis

LO2

A supermarket and a jewellery store provide the following vertical analyses of certain accounts from their income statement and balance sheet:

	Company A	Company B
Gross profit	26.0%	55.2%
Operating expenses	22.2%	48.0%
Net income	3.8%	7.2%
Inventory	30.4%	68.2%
Property and equipment	57.8%	12.5%

REQUIRED

Identify which company is likely to be the supermarket and which is likely to be the jewellery store. Explain the reasons for your conclusions.

8 Vertical and horizontal analysis

LO2

Petrulis Petroleum is applying for a substantial increase in its loan from Murray Bank. The income statements of Petrulis for the past year and expected (budgeted) results for the following year are as follows (all figures in millions):

Statements of comprehensive income For the years ending 30 June		
	Budgeted 2021	Actual 2020
Revenues	$725	$700
Cost of goods sold	345	385
Gross profit	$380	$315
Operating expenses	175	180
Earnings before interest and taxes	$205	$135
Interest expense	45	40
Earnings before taxes	$160	$ 95
Income tax expense	55	30
Comprehensive income net of tax	23	29
Total comprehensive income	$128	$ 94

REQUIRED

As the accounting student on internship at the bank you have been asked to calculate a vertical and horizontal analysis of Petrulis' actual 2020 and budgeted 2021 statements of comprehensive income. Provide comment on any unexpected results the analysis reveals and that the bank may wish to discuss with Petrulis.

9 Identify ratios

LO3, 4, 5

Identify each of the following ratios as a profitability, liquidity or solvency ratio. Which ratio is likely to best indicate what equity investors believe is the future of the company compared to the present? Why?

a return on equity
b debt to assets ratio
c times interest earned
d quick ratio
e inventory turnover ratio
f accounts receivable turnover ratio
g price to earnings ratio
h profit margin
i current ratio
j debt to equity ratio.

10 Interpret ratios

LO3, 4, 5

The following information is available for Radovich Researchers:

	2020	2019
Profit margin	8.7%	8.3%
Return on assets	10.2%	10.4%
Price to earnings ratio	13.5	12.0
Quick ratio	0.8	0.9
Inventory turnover ratio	5.5	7.2
Receivable turnover ratio	11.3	15.5
Times interest earned	7.2	6.4

REQUIRED

For each ratio, indicate whether the change in the ratio is favourable, unfavourable or indeterminate and why.

11 Define ratios

LO3, 4, 5

Identify the appropriate ratio or ratios for each of the following descriptions:

a shows the return to each share owned by an investor
b measures the difference between current assets and current liabilities
c measures the ability of a company to generate profits from sales
d provides a measure of a company's capital structure
e shows a company's ability to generate profits from its entire resource base
f gives information as to how a company manages its inventory
g measures a company's capital structure using liabilities and equity
h shows how effectively a company uses its current equity to generate additional equity
i measures a company's ability to meet its obligations in a few weeks rather than many months
j shows how well a company can pay interest on debt out of current-year earnings
k measures a company's ability to collect sales on credit
l provides an indication of current investor perceptions of the company.

12 Profitability ratios

LO3

The following financial information about Howard Enterprises is available:

Sales	$1 200 000
Net profit	260 000
Average total assets	1 800 000
Average shareholders' equity	880 000

The following additional information is available:

i The contributed capital was made up of 250 000 ordinary shares. No shares were issued during the year.
ii The shares were recently trading for $10.00 (per share).

REQUIRED

Calculate the following ratios:

a profit margin
b return on equity
c return on assets
d earnings per share
e price to earnings.

13 Profitability ratios

LO3

The following financial information is available about Lim Limited for the financial year ended 31 December:

Net profits	$ 150 000
Ordinary shares, 1 January	400 000
Ordinary shares, 31 December	500 000
Share (market) price at 31 December	10.00
Sales	945 000
Total assets, 1 January	800 000
Total assets, 31 December	1 000 000
Shareholders' equity, 1 January	450 000
Shareholders' equity, 31 December	475 000

REQUIRED

Calculate and interpret the following:

a profit margin
b return on equity
c return on assets
d earnings per share
e price earnings ratio.

14 Liquidity ratios

LO4

The following information was taken from the financial statements of Connor Cookers and Olson Ovens:

(in millions)	2019	2018
Total current assets		
Connor Cookers	$ 46 448	$249 664
Olson Ovens	155 117	153 188
Cash		
Connor Cookers	24 311	48 936
Olson Ovens	28 894	28 406
Accounts receivable		
Connor Cookers	8 216	186 766
Olson Ovens	114 645	114 511
Inventory		
Connor Cookers	13 921	13 962
Olson Ovens	11 578	10 271
Current liabilities		
Connor Cookers	69 036	74 457
Olson Ovens	80 220	85 037
Revenues (sales)		
Connor Cookers	207 349	194 655
Olson Ovens	160 123	176 896
Cost of goods sold		
Connor Cookers	80 153	79 411
Olson Ovens	76 740	71 561

REQUIRED

a For each company, calculate the following for 2019:
  i accounts receivable turnover ratio
  ii inventory turnover ratio
  iii current ratio
  iv quick ratio.
b Based on your calculations, discuss the liquidity of both companies and indicate what caution needs to be exercised in drawing conclusions about either company's ability to pay their debts in the short term.

15 Transactions affecting liquidity ratios

LO4

Taylor Tools has $50 000 of cash and accounts receivable, $135 000 of total current assets and $100 000 of total current liabilities prior to the following transactions:

i sales on account of $10 000
ii paid cash for accounts due to suppliers, $15 000
iii received cash for accounts receivable of $1500
iv prepaid expenses of $7500 with cash
v purchased inventory of $20 000 on account
vi paid a $5000 cash dividend
vii repaid short-term loans of $10 000 with cash
viii purchased short-term investments of $15 000 with cash
ix borrowed $25 000 from the bank by signing a 90-day note
x sold inventory of $30 000 for cash.

REQUIRED

Indicate whether each transaction would increase, decrease or have no effect on Taylor's current and quick ratios. Treat each transaction independently.

16 Solvency ratios

LO5

The following information was taken from the financial statements of TK Company:

	2021	2020
Total assets	$400 000	$250 000
Total liabilities	150 000	150 000
Total equity	250 000	100 000
Earnings before interest and tax	70 000	60 000
Interest expense	14 000	15 000

REQUIRED

Calculate:

a the debt to assets ratio
b the debt to equity ratio
c times interest earned for both years.

17 Solvency ratios

LO5

The following financial information regarding Emily's Editors Pty Ltd is available:

	2019
Total assets	$ 530 000
Total liabilities	140 000
Total shareholders' equity	390 000

2019 Statement of comprehensive income	
Revenue	$ 250 000
Cost of goods sold	125 000
Gross profit	125 000
Operating expenses	40 000
Profits before interest and taxes	85 000
Interest expense	10 000
Profits before taxes	75 000
Income tax expense	25 000
Comprehensive income (no tax)	12 000
Total comprehensive income	$ 62 000

REQUIRED

a Calculate the following ratios:
- **i** debt to assets
- **ii** debt to equity
- **iii** equity to assets
- **iv** times interest earned.

b Discuss the solvency of Emily Editors. Does the company rely more on equity or debt to finance its operations?

c What is the relation between the first three ratios?

18 DuPont analysis

LO6

The following financial information about Pazmandy Pulmonary Proprietary is available:

	2019
Total average assets	$400 000
Total average equity	250 000
Sales	70 000
Net profits	14 000

REQUIRED

Prepare a DuPont analysis for Pazmandy.

19 DuPont analysis

LO6

Discuss the limitations of DuPont analysis for a technology company like Google, Apple, Facebook or LinkedIn. Why do accounting standards not generally recognise internally generated intangible assets?

PROBLEMS

20 Analysing financial statements

LO2, 3, 4, 5

The following financial information is available for Porch Posers at 30 June:

Comparative balance sheet		
	2020	2019
Cash	$ 25 000	$ 25 000
Accounts receivable	30 000	25 000
Inventory	75 000	75 000
Total current assets	130 000	125 000
Property, plant and equipment at carrying amount	400 000	315 000
Total assets	530 000	440 000
Accounts payable	40 000	50 000
Other current liabilities	25 000	40 000
Total current liabilities	65 000	90 000
Debentures payable	75 000	150 000
Total liabilities	140 000	240 000
Share equity	290 000	150 000
Retained earnings	100 000	50 000
Total shareholders' equity	390 000	200 000
Total liabilities and equity	$530 000	$440 000

During the period Porch issued 140 000 shares in addition to the 150 000 already issued. The share price at 30 June 2020 was $11.00.

2020 Income Statement	
Revenue	$400 000
Cost of goods sold	210 000
Gross profit	190 000
Operating expenses	55 000
Profits before interest and taxes	135 000
Interest expense	15 000
Profits before income tax	120 000
Income tax expense	50 000
Net profits	$ 70 000

REQUIRED

a Calculate all profitability, liquidity and solvency ratios.

b Comment on Porch Poser's overall profitability, liquidity and solvency.

21 Analysing financial statements

LO2, 3, 4, 5

Amanda's Anchors has applied for a loan from a local bank. The bank is basing its decision on the following information:

Ratio	Industry average
Current ratio	1.5
Quick ratio	0.80
Receivable turnover ratio	18
Inventory turnover ratio	20
Debt to assets ratio	0.56
Times interest earned	6.52
Profit margin	10.25%
Return on assets	11.50%
Return on equity	20.30%

Amanda's Anchors Statement of comprehensive income For the year ended 30 June 2020	
Sales revenues	$600 000
Cost of goods sold	350 000
Gross profit	250 000
Other expenses	100 000
Profits before interest and taxes	150 000
Interest expense	25 000
Profits before taxes	125 000
Income tax expense	65 000
Net profits	$ 60 000

Amanda's Anchors Statement of financial position		
	30 June 2020	30 June 2019
Cash	$ 75 000	$ 60 000
Accounts receivable	30 000	20 000
Inventory	30 000	20 000
Prepaid insurance	5 000	5 000
Total current assets	140 000	105 000
Property and equipment	600 000	550 000
Accumulated depreciation	(140 000)	(110 000)
Total property and equipment	460 000	440 000
Total assets	600 000	545 000
Accounts payable	60 000	60 000
Other current liabilities	40 000	45 000
Total current liabilities	100 000	105 000
Bonds payable	150 000	150 000
Total liabilities	250 000	255 000
Issued capital	250 000	250 000
Retained earnings	100 000	40 000
Total shareholders' equity	350 000	290 000
Total liabilities and shareholders' equity	$600 000	$545 000

REQUIRED

a For Amanda's Anchors, calculate the ratios for which the bank has an industry average. After comparing Amanda's ratios to the industry averages, should the bank approve the loan? Why or why not?

b As Amanda's accountant, present a case to the bank on why comparing ratios to industry averages is a limited way to analyse a business and the other factors the bank might consider in lending the business money (such as security for the loan, future prospects and why some ratios might be more important than others). Use Cochlear's or CSL's ratios calculated in this chapter to support your case.

c The bank has also asked why Amanda's earnings per share is only $0.83 when the industry average is $2.56. Politely point out to the bank why this is irrelevant.

22 Using ratios to evaluate a business purchase

LO3, 4, 5

You are a senior analyst for Xeon Zoom, a large corporation whose sole activity is the acquisition of quality subsidiary companies. Your manager has just come to you with the following financial statements for Ahem Biscuit Company (ABC), a confectionery business based in Thirroul, which is currently trading at $5 per share. She wants you to analyse the company and give a recommendation on whether or not to submit a bid for ABC. All dollar figures are in thousands.

Comparative balance sheet at 30 June for ABC		
	2019	2018
Cash	$ 10 000	$ 20 000
Accounts receivable	30 000	45 000
Inventory	105 000	75 000
Prepaid insurance	5 000	15 000
Total current assets	150 000	155 000
Property and equipment	220 000	200 000
Intangible intellectual property	100 000	85 000
Total assets	470 000	440 000
Accounts payable	60 000	50 000
Notes payable	25 000	25 000
Total current liabilities	85 000	5 000
Bonds payable	280 000	280 000
Total liabilities	365 000	355 000
Issued equity (Avg. 100 000 shares)	75 000	75 000
Retained earnings	30 000	10 000
Total equity	105 000	85 000
Total liabilities and equity	$470 000	$440 000

Income statement for ABC for the financial year ended 30 June 2019	
Sales	$250 000
Cost of goods sold	150 000
Gross profit	100 000
Administrative expenses	25 000
Depreciation expense	15 000
Total operating expenses	40 000
Operating income	60 000
Interest expense	10 000
Income before taxes	50 000
Income tax expense	25 000
Net income	$ 25 000

23 Research and analysis

LO1, 3, 4, 5, 6

Access the most recent publicly available annual report for Cochlear and/or CSL (as instructed by your lecturer) through the company website(s).

REQUIRED

a Examine the company's financial statements and calculate all profitability, liquidity and solvency ratios (or a subset of these chosen by your lecturer) for the most recent year. To calculate the P/E ratio, use the ASX or similar website (or even an old-fashioned newspaper) to determine current share price.

b Based on your answers to (a), write a paragraph explaining your opinion of the financial health of the company(s).

c If you have calculated selected ratios for both companies, discuss their relative performance. Is the change in share price over the last two or three years consistent with your analysis?

24 Ethics in accounting

LO4

Kim Company currently has a line of credit with Murray River Bank. The interest rate on the line of credit increases from 4.25 per cent to 8.25 per cent if the following terms of the credit agreement are not met:

i Kim's current ratio must remain above 1.2 at all times

ii Kim's times interest earned must be 3.0 or greater at all times.

The following preliminary financial information has been prepared by the accountants of Kim Company. All figures in millions:

Current assets	$100
Current liabilities	75
Income before interest and taxes	25
Interest expense	7

Your senior accounting manager calls to your attention that the $100 million of current assets include $10 million worth of an investment in callable bonds, which do not mature for five years but will be callable if the company so desires in 10 months. She also notes $5 million of the current revenue is attributed to a service contract for which Kim has received payment but has not yet performed the services. There is no reason why the contract will not be fulfilled.

REQUIRED

a Based on the financial information presented above, is Kim within the guidelines in its credit agreement?

b Would you change the treatment of the two items your senior manager brought to your attention? Do you see any problem with the way these items are classified? Explain your answer.

c Based on your response to (b), prepare revised financial information if it is necessary. If you revised the information, is Kim still compliant with its loan agreement?

25 Written communications

LO1, 2, 3, 4, 5

You have been given the following information about the company you work for by your CFO (chief financial officer). Analysts have been predicting a strong year in 2021.

	2020	2019	2018
Horizontal analysis of sales	37.0%	22.0%	15.0%
Profit margin	8.2%	7.5%	6.8%
Return on equity	13.1%	12.3%	11.1%
Current ratio	2.4	2.1	1.8
Quick ratio	0.6	1.0	1.2
Inventory turnover ratio	2.6	4.0	4.7
Debt to assets ratio	0.8	0.7	0.6
Times interest earned ratio	4.4	5.5	6.6

REQUIRED

a Prepare a *brief* press release highlighting the strong performance of the company. Use the analysis above to support your positive conclusions.

b SMS your CFO expressing concern about the press release you have written. Point out the negative financial indicators that would indicate the company's financial future may not be all positive, especially given predictions of rising interest rates.

APPENDIX A Time value of money

INTRODUCTION

When decisions are affected by cash flows that are paid or received in different time periods, it is necessary to adjust those cash flows for the time value of money (TVM). Because of our ability to earn interest on money invested, we would prefer to receive $1 today rather than a year from now. Likewise, we would prefer to pay $1 a year from now rather than today. A common technique used to adjust cash flows received or paid in different time periods is to discount those cash flows by finding their **present value (PV)**, which is the amount of future cash flows discounted to their equivalent worth today. To fully understand the calculations involved in finding the PV of future cash flows, it is necessary to step back and examine the nature of interest and the calculation of interest received and paid. Interest is simply a payment made to use someone else's money. When you invest money in a bank account, the bank pays you interest for the use of your money for a period of time. If you invest $100 and the bank pays you $106 at the end of the year, it is clear that you earned $6 of interest on your money (and 6 per cent interest for the year).

present value (PV)
The amount of future cash flows discounted to their equivalent worth today.

FUTURE VALUE

Mathematically, the relationship between your initial investment (present value *PV*), the amount in the bank at the end of the year (future value *FV*), and the interest rate (*r*) is as follows:

$$FV_{(\text{Year 1})} = PV(1 + r)$$

In our example, $FV_{(\text{Year 1})} = 100(1 + 0.06) = \$106$. If you leave your money in the bank for a second year, what happens? Will you earn an additional $6 of interest? It depends on whether the bank pays you simple interest or compound interest. **Simple interest** is interest on the invested amount only, whereas **compound interest** is interest on the invested amount plus interest on previous interest earned but not withdrawn. Simple interest is sometimes computed on short-term investments and debts (that is, those that are shorter than six months to a year). Compound interest is typically computed for financial arrangements longer than one year. We will assume that interest is compounded in all examples in this book. Extending the future-value formula to find the amount we have in the bank in two years gives us the following formula:

simple interest
Interest on the invested amount only.

compound interest
Interest on the invested amount plus interest on previous interest earned but not withdrawn.

$$FV_{(\text{Year 2})} = PV(1 + r)(1 + r)$$

or

$$FV_{(\text{Year 2})} = PV(1 + r)^2$$

In our example, $FV_{(\text{Year 2})} = 100(1 + 0.06)^2$, or $112.36. We earned $6.36 of interest in Year 2, which is $6 on our original $100 investment and $0.36 on the $6 of interest earned but not withdrawn in Year 1 ($6 × 0.06).

In this example, we have assumed that compounding is on an annual basis. Compounding can also be calculated semi-annually, quarterly, monthly, daily or even continually. Go back to our original $100 investment in the bank. If the bank pays 6 per cent interest compounded semi-annually instead of annually, we would have $106.09 after one year. Note that the interest rate is typically expressed as a percentage rate per year. We are really earning 3 per cent for each semi-annual period, not 6 per cent. It is usually easier to visualise the concept of interest rate compounding graphically, with the help of timelines. Exhibit A.1 graphically

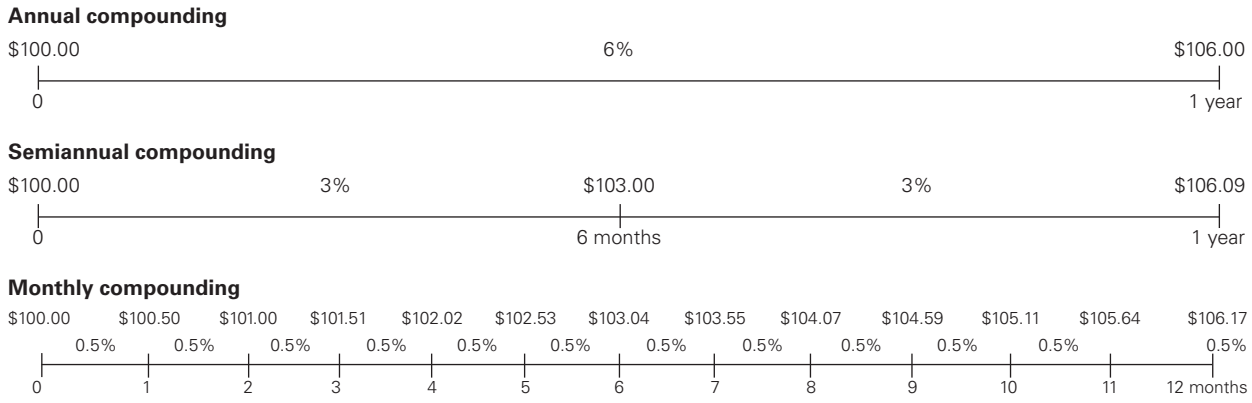


EXHIBIT A.1 The impact of more frequent compounding on the future value of $100

demonstrates the impact of annual, semi-annual and monthly compounding of the 6 per cent annual rate on our original $100 investment.

Mathematically, our formula for future value can once again be modified slightly to account for interest rates compounded at different intervals. $FV_{(\text{n periods in the future})} = PV(1 + r)^n$, where n is the number of compounding periods per year multiplied by the number of years, and r is the annual interest rate divided by the number of compounding periods per year. Before the advent of handheld calculators and computers, tables were developed to simplify the calculation of FV by providing values for $(1 + r)^n$ for several combinations of n and r. These tables are still commonly used, and an example is provided in Exhibit A.2. The factors in the Exhibit are commonly referred to as cumulative factors (CFs) and are simply calculations of $(1 + r)^n$ for various values of n and r.

Using this new terminology, the future value formula is simply:

$$FV_{(n \text{ periods in the future})} = PV(CF_{n,r})$$

With 6 per cent annual compounding, our $100 investment grows to:

$$\$100(CF_{1,6\%}) = \$100(1.060) = \$106.00$$

n/*r*	0.5%	1%	2%	3%	4%	5%	6%	7%	8%	10%	12%
1	1.0050	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.1000	1.1200
2	1.0100	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.2100	1.2544
3	1.0151	1.0303	1.0612	1.0927	1.1249	1.1576	1.1910	1.2250	1.2597	1.3310	1.4049
4	1.0202	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4641	1.5735
5	1.0253	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.6105	1.7623
6	1.0304	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.7716	1.9738
7	1.0355	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.9487	2.2107
8	1.0407	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	2.1436	2.4760
9	1.0459	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.3579	2.7731
10	1.0511	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.5937	3.1058
11	1.0564	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.8531	3.4785
12	1.0617	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	3.1384	3.8960
24	1.1272	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	9.8497	15.1786
36	1.1967	1.4308	2.0399	2.8983	4.1039	5.7918	8.1473	11.4239	15.9682	30.9127	59.1356
48	1.2705	1.6122	2.5871	4.1323	6.5705	10.4013	16.3939	25.7289	40.2106	97.0172	230.3908

EXHIBIT A.2 Future value of $1

With 6 per cent semi-annual compounding:

$$\$100(CF_{2.3\%}) = \$100(1.0609) = \$106.09$$

With 6 per cent monthly compounding:

$$\$100(CF_{12.5\%}) = \$100(1.0617) = \$106.17$$

Most financial calculators will compute future value after the user inputs data for PV, the annual interest rate, the number of compounding periods per year, and the number of years. For example, using a business calculator to compute the future value of $100.00 with 6 per cent annual compounding requires the following steps:

Keys	Display	Description
1 P/YR	1.00	Sets compounding periods per year to 1 because interest is compounded annually.
100 ± PV	–100.00	Stores the present value as a negative number.
6.0 I/YR	6.0	Stores the annual interest rate.
1 N	1	Sets the number of years or compounding periods to 1.
FV	106.00	Calculates the future value.

Calculating the future value of $100 with 6 per cent monthly compounding simply requires changing both the compounding periods per year (*P/YR*) and number of compounding periods (*N*) to 12.

Keys	Display	Description
12 P/YR	12	Sets compounding periods per year to 12.
12 N	12	Sets the number of compounding periods to 12.
FV	106.17	Calculates the future value.

Likewise, many spreadsheet programs have built-in functions (formulas) that calculate future value. The Excel function called FV simply requires input of an interest rate (Rate), number of compounding periods (Nper) and present value (Pv) in the following format: = FV(Rate, Nper, Pmt, Pv, Type).[1] Entries for Pmt and Type are not applicable to simple future-value problems. To calculate the future value of $100 in one year at 6 per cent interest compounded monthly, enter = FV(0.5%, 12, –100). Excel returns a value of $106.17 (see Exhibit A.3).

PRESENT VALUE

A PV formula can be derived directly from the future value formula. If:

$$FV_{(n \text{ periods in the future})} = PV(1 + r)^n$$

then:

$$PV = \frac{FV}{(1 + r)^n} \quad \text{or} \quad PV = FV\left[\frac{1}{(1 + r)^n}\right]$$

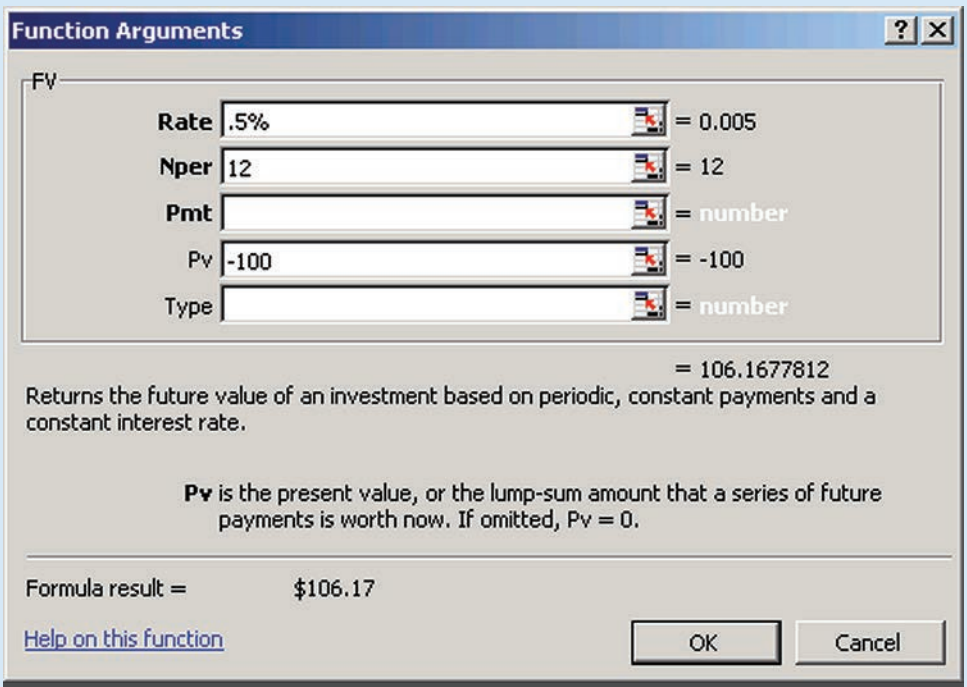


EXHIBIT A.3 Finding the future value using the FV function in Excel

Just as a CF table was developed to calculate $(1 + r)^n$, PV tables calculate $1 \div (1 + r)^n$ for various combinations of n and r. These factors are called discount factors, or DFs. An example of a DF table is provided in Exhibit A.4. Our PV formula can now be rewritten as follows:

$$PV = FV(DF_{n,r})$$

Now we are ready to calculate the PV of a future cash flow. For example, how much must be invested today at 8 per cent compounded annually to have $1000 in two years? Mathematically:

$$PV = \$1000\left(\frac{1}{(1 \times 0.08)^2}\right) = \$857.34$$

Or using the DF table:

$$PV = \$1000(DF_{2,\,0.08}) = \$1000(0.8573) = \$857.30 \text{ (rounded)}$$

Once again, the frequency of compounding affects our calculation. Just as more frequent compounding increases future values, increasing the frequency of compounding decreases PVs. This is demonstrated in Exhibit A.5 for annual, semi-annual and quarterly compounding.

n/*r*	0.5%	1%	2%	3%	4%	5%	6%	7%	8%	10%	12%
1	0.9950	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9091	0.8929
2	0.9901	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8264	0.7972
3	0.9851	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7513	0.7118
4	0.9802	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.6830	0.6355
5	0.9754	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6209	0.5674
6	0.9705	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5645	0.5066
7	0.9657	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5132	0.4523
8	0.9609	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.4665	0.4039
9	0.9561	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4241	0.3606
10	0.9513	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.3855	0.3220
11	0.9466	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3505	0.2875
12	0.9419	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3186	0.2567
24	0.8872	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1015	0.0659
36	0.8356	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0323	0.0169
48	0.7871	0.6203	0.3865	0.2420	0.1522	0.0961	0.0610	0.0389	0.0249	0.0103	0.0043

EXHIBIT A.4 Present value of $1

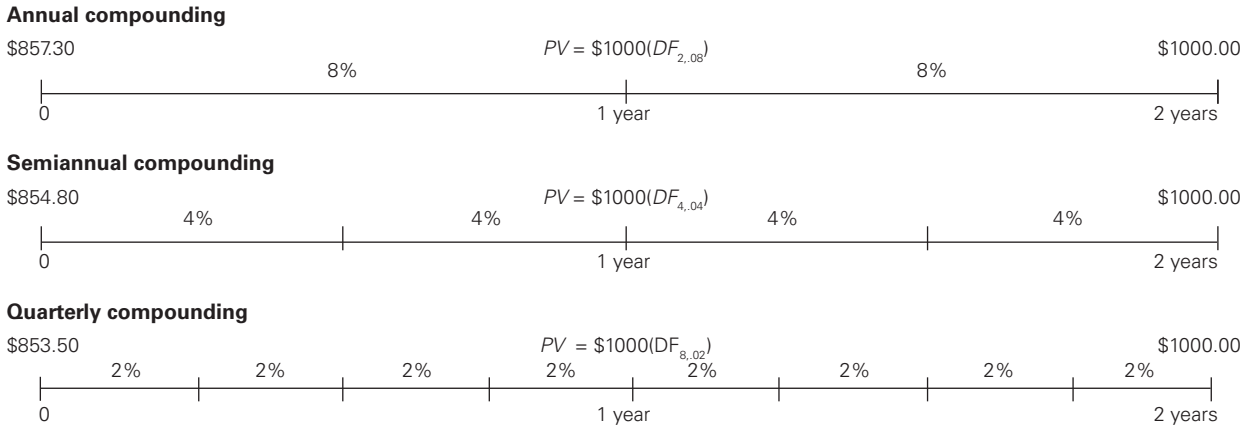


EXHIBIT A.5 The impact of more frequent compounding on the present value of $1000

Using a business calculator to compute PV is similar to computing future value; for example, the PV of $1000 received or paid in two years at 8 per cent compounded quarterly requires the following steps:

Keys	Display	Description
4 P/YR	4.00	Sets the compounding periods per year to 4.
1000 FV	1000.00	Stores the future value as a positive number.
8.0 I/YR	8.0	Stores the annual interest rate.
8 N	8.0	Sets the number of compounding periods to 8.
PV	–853.49	Calculates the present value.

In Microsoft Excel, the built-in function is called PV and requires input of the applicable interest rate (Rate), number of compounding periods (Nper), and future value (Fv) in the following format: = PV(Rate, Nper, Pmt, Fv, Type). In the previous example, entering = PV(2%, 8, –1000) returns a value of $853.49. Note once again that Pmt and Type are left blank in simple PV problems, as they were in future value calculations (see Exhibit A.6).

When *FV* and *PV* are known, either formula can be used to calculate one of the other variables in the equations (*n* or *r*). For example, if you know that your $100 bank deposit is worth $200 in six years, what rate of interest compounded annually did you earn? Using the mathematical PV formula:

$$PV = FV\left(\frac{1}{(1+r)^n}\right) \quad \text{or} \quad \$100 = \$200\left(\frac{1}{(1+r)^6}\right)$$

Simplifying by dividing each side by $100, $1 = 2 \div (1 + r)^6$ and multiplying each side by $(1 + r)^6$, the equation is simplified to $(1 + r)^6 = 2$. The value of *r* can be calculated by using a financial calculator or mathematically by using logarithmic functions.[2] When using a business calculator, the following steps are typical:

Keys	Display	Description
1 P/YR	1.00	Sets compounding periods per year to 1.
200 FV	200	Stores the future value.
100 ± PV	–100	Stores the present value as a negative number.
2 N	2.0	Sets the number of compounding periods to 2.
I/YR	0.122462	Calculates the annual interest rate.

The tables can also be used to solve for *n* and *r*. Using our table formula, $PV = FV(DF_{n,r})$, if $PV = 100$ and $FV = 200$, *DF* must be equal to 0.5. If we know that *n* is equal to 6, we can simply move across the table until we find a factor close to 0.5. The factor at 12 per cent is 0.5066. If we examine the factors at both 10 per cent (0.5645) and 14 per cent (0.456), we can infer that the actual interest rate will be slightly higher than 12 per cent. Our logarithmic calculation is 12.2462 per cent. In Microsoft Excel, the RATE function requires input of Nper, Pv and Fv in the following format: = RATE (Nper,

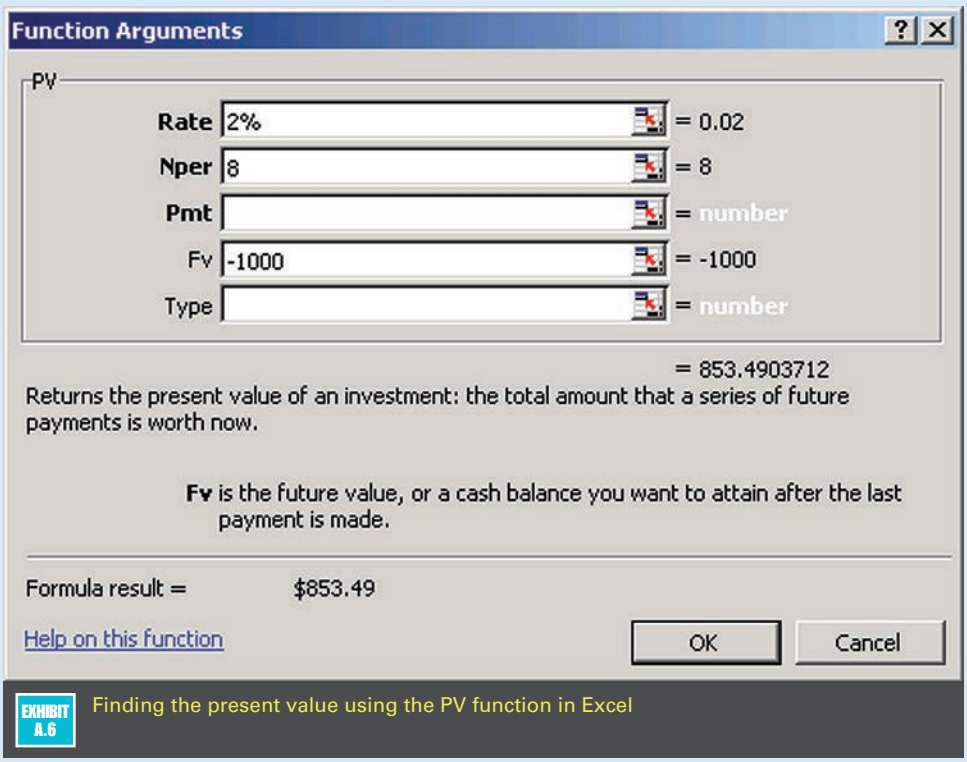


EXHIBIT A.6 Finding the present value using the PV function in Excel

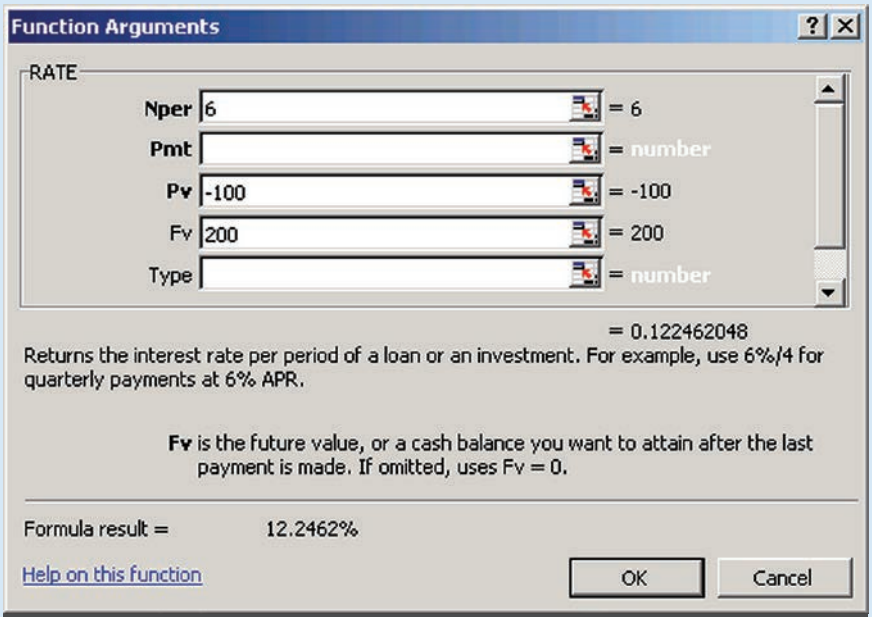


EXHIBIT A.7 Finding the interest rate using the RATE function in Excel

Pmt, Pv, Fv, Type, Guess). Because Excel uses an iterative trial-and-error method to calculate the interest rate, Guess provides a starting point. It is generally not necessary but may be required in complicated problems. Entering = RATE(6, –100, 200) returns an interest rate of 12.2462 per cent (see Exhibit A.7).

The calculation of *n* is done in a similar fashion. If we know that our investment earns 12 per cent, but do not know how long it will take for our $100 to grow to $200, mathematically, we have the following:

$$PV = FV\left(\frac{1}{(1+r)^n}\right) \text{ or } \$100 = \$200\left(\frac{1}{(1+0.12)^n}\right)$$

Solving the equation by using logarithms or a financial calculator gives us an *n* of 6.116 years.[3] Using the DF formula, *DF* must again be equal to 0.5. If *r* is known to be 12 per cent, we simply move down the 12 per cent column until we find a DF close to 0.5. Not surprisingly, we find a factor of 0.5066 for an *n* of 6. Examining the factors for an *n* of 5(0.5674) and 7(0.4523), we can infer that the actual time will be something slightly greater than 6 years. The NPER function in Microsoft Excel requires input of Rate, Pmt, Pv, Fv and Type in the following format: = NPER (12%, –100, 200), and returns a value of 6.116 years. Note that Pv is entered as a negative amount and that Pmt and Type are not necessary, as this is essentially a PV problem (see Exhibit A.8).

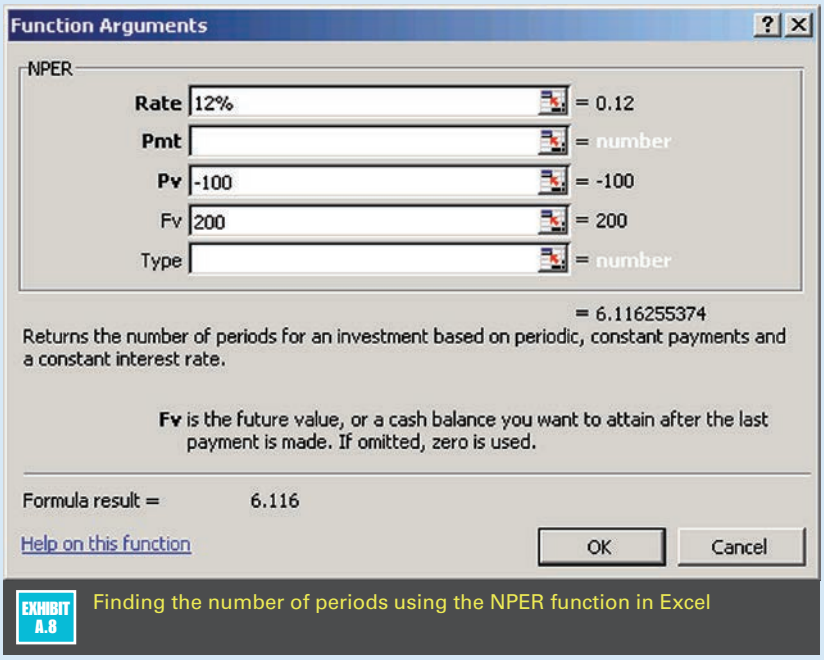
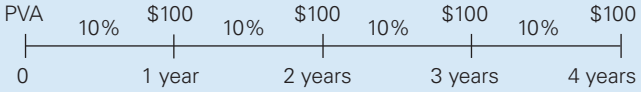


EXHIBIT A.8 Finding the number of periods using the NPER function in Excel

ANNUITIES

annuity
A series of cash flows of equal amounts paid or received at regular intervals.

An **annuity** is a series of cash flows of equal amount paid or received at regular intervals.[4] Common examples include mortgage and loan payments. The PV of an ordinary annuity (PVA) is the amount invested or borrowed today that will provide for a series of withdrawals or payments of equal amount for a set number of periods. Conceptually, the PV of an annuity is simply the sum of the PVs of each withdrawal or payment. For example, the PV of an annuity of $100 paid at the end of each of the next four years at an interest rate of 10 per cent looks like this:



Although cumbersome, the PV of an annuity can be calculated by finding the PV of each $100 payment, using the PV table in Exhibit A.4.

$$PVA = \$100(DF_{1,.10}) + \$100(DF_{2,.10}) + \$100(DF_{3,.10}) + \$100(DF_{4,.10})$$
$$= \$100(0.9091) + \$100(0.8264) + \$100(0.7513) + \$100(0.6830)$$
$$= \$316.98$$

The mathematical formula for PVA can be derived from the formula for PV and is equal to:

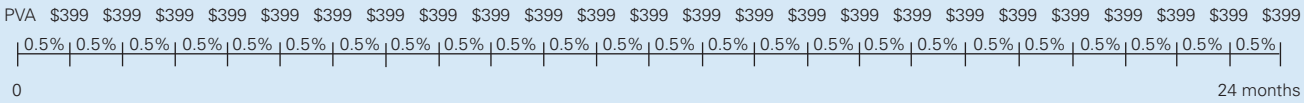
$$PVA_{n,r} = R\left(\frac{1 - \frac{1}{(1+r)^n}}{r}\right)$$

where R refers to the periodic payment or withdrawal (commonly called a rent). Calculated values for various combinations of n and r are provided in Exhibit A.9.

The PVA formula can therefore be rewritten as follows:

$$PVA = R(DFA_{n,r})$$

As previously discussed, common examples of annuities are mortgages and loans. For example, say you are thinking about buying a new car. Your bank offers to lend you money at a special 6 per cent rate compounded monthly for a 24-month term. If the maximum monthly payment you can afford is $399, how large a car loan can you get? In other words, what is the PV of a $399 annuity paid at the end of each of the next 24 months, assuming an interest rate of 6 per cent compounded monthly? Using a timeline, the problem looks like this:



n/*r*	0.5%	1%	2%	3%	4%	5%	6%	7%	8%	10%	12%
1	0.9950	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9091	0.8929
2	1.9851	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7355	1.6901
3	2.9702	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.4869	2.4018
4	3.9505	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.1699	3.0373
5	4.9259	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.7908	3.6048
6	5.8964	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.3553	4.1114
7	6.8621	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	4.8684	4.5638
8	7.8230	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.3349	4.9676
9	8.7791	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.7590	5.3282
10	9.7304	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.1446	5.6502
11	10.67700	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.4951	5.9377
12	11.6189	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	6.8137	6.1944
24	22.5629	21.2434	18.9139	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	8.9847	7.7843
36	32.8710	30.1075	25.4888	21.8323	18.9083	16.5469	14.6210	13.0352	11.7172	9.6765	8.1924
48	42.5803	37.9740	30.6731	25.2667	21.1951	18.0772	15.6500	13.7305	12.1891	9.8969	8.2972

EXHIBIT A.9 Present value of an ordinary annuity

Mathematically:

$$PVA_{24,0.005} = 399\left(\frac{1 - \frac{1}{(1+0.5)^{24}}}{0.005}\right)$$

Using the DFA table:

$PVA_{24,0.005} = \$399(DFA_{24,0.005}) = \$399(22.5629) = \$9002.60$ (rounded)

The following steps are common when using a business calculator:

Keys	Display	Description
12 P/YR	12.00	Set periods per year.
2×12 N	24.00	Stores number of periods in loan.
0 F+V	0	Stores the amount left to pay after 2 years.
6 I/YR	6	Stores interest rate.
399 ± PMT	–399.00	Stores desired payment as a negative number.
PV	9002.58	Calculates the loan you can afford with a $399 per month payment.

In Microsoft Excel, the PV function is used to calculate the PV of an annuity, with additional entries for the payment amount (Pmt) and type of annuity (Type). The payment is entered as a negative number, and the annuity type is 0 for ordinary and 1 for an annuity due. The format is therefore PV (Rate, Nper, Pmt, Fv, Type). Entering = PV(0.5%,24,–399,0,0) returns a value of $9002.58 (see Exhibit A.10).

The PVA formula can also be used to calculate *R*, *r*, and *n* if the other variables are known. This is most easily accomplished using the DFA table or using a financial calculator. If the car you want to buy costs $20 000 and you can afford a $3000 down payment (your loan balance is $17 000), how much will your 36 monthly payments be, assuming that the bank charges you 6 per cent interest compounded monthly?

Using the DFA table:

$$PVA_{36,\,0.005} = R(DFA_{36,\,0.005})$$

$$\$17\,000 = R(32.871)$$

$$R = \$517.17$$

The following steps are common when using a business calculator:

Keys	Display	Description
12 P/YR	12.00	Set periods per year.
3×12 N	36.00	Stores number of periods in loan.
0 F+V	0	Stores the amount left to pay after 3 years.
6 I/YR	6	Stores interest rate.
17 000 P+V	17 000	Stores amount borrowed.
PMT	–517.17	Calculates the monthly payment.

In Microsoft Excel, the calculation is simply = PMT(0.005, 36,–17000,0,0) (see Exhibit A.11).

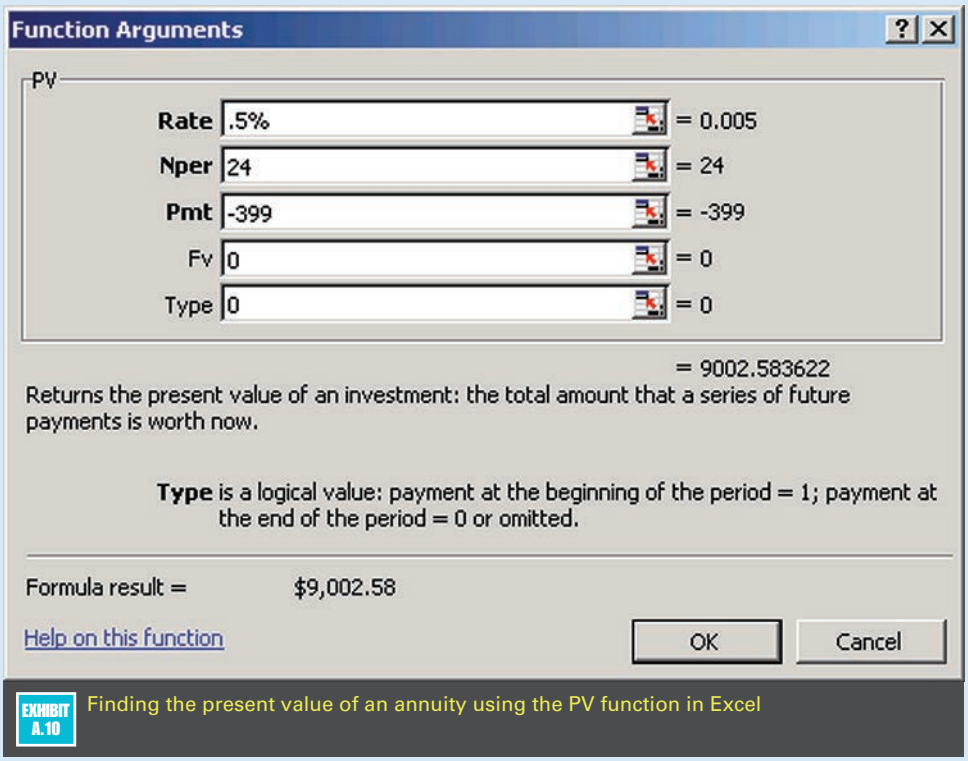


EXHIBIT A.10 Finding the present value of an annuity using the PV function in Excel

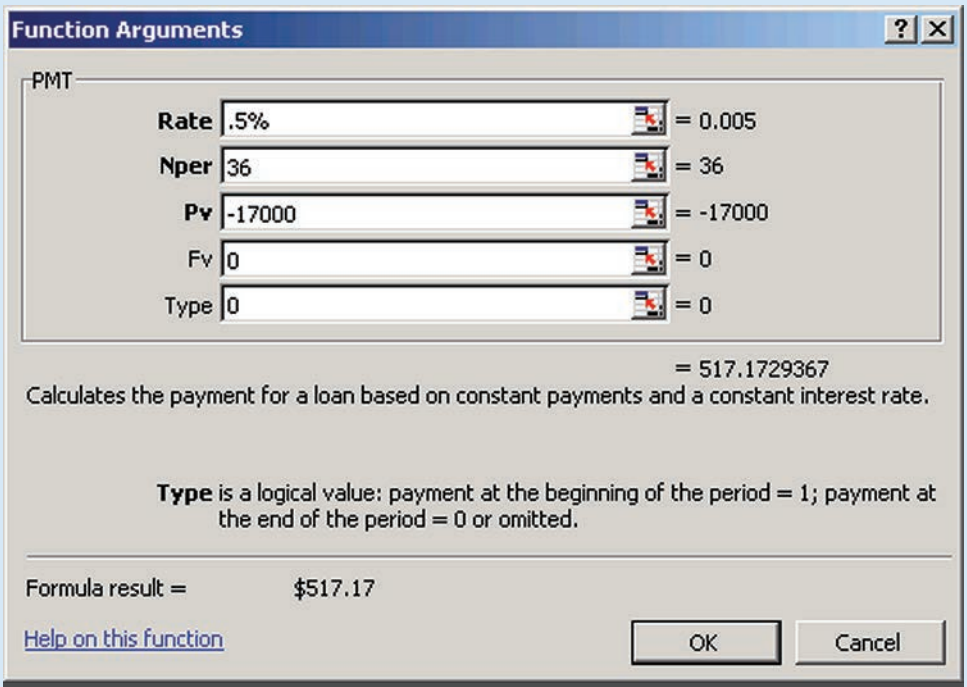


EXHIBIT A.11 Finding the payment using the PMT function in Excel

In a similar fashion, assume that a used-car dealer offers you a 'special deal', in which you can borrow $12 000 with low monthly payments of $350 per month for 48 months. What rate of interest are you being charged in this case? Using the DFA table:

$$PVA_{48,.??} = \$350(DFA_{48,.??})$$

$$\$12000 = 350(DFA_{48,.??})$$

$$DFA_{48,.??} = 34.2857$$

Looking at the row for an n of 48, we see that a DFA of 34.2857 is about halfway between an r of 1 per cent and r of 2 per cent (closer to 1 per cent), which means that you are being charged an annual rate of almost 18 per cent (1.5% × 12) – not such a good deal after all! Using a business calculator, observe the following:

Keys	Display	Description
12 P/YR	12.00	Set periods per year
4×12 N	48.00	Stores number of periods in loan
0 FV	0	Stores the amount left to pay after 4 years
12,000 PV	12,000	Stores amount borrowed
350 +/– PMT	–350	Stores the monthly payment
I/YR	17.60	Calculates the annual interest rate

In Excel, = RATE(48, –350,12,000,0) generates a monthly rate of 1.4667 per cent and an annual rate of 17.60 per cent. The use of the RATE function requires that the payments are the same each period. Excel's IRR function is more flexible, allowing different payments. However, each payment has to be entered separately. For example, if the car is purchased for $17 000 with annual payments of $4000, $5000, $6000 and $7000 at the end of each of the next four years, the interest rate charged on the car loan can be calculated by using the IRR function (see Exhibit A.12).

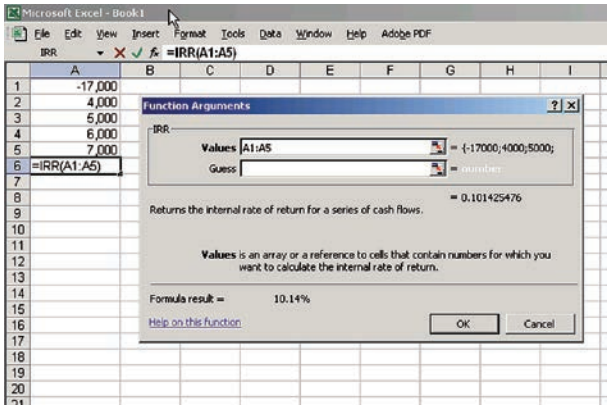
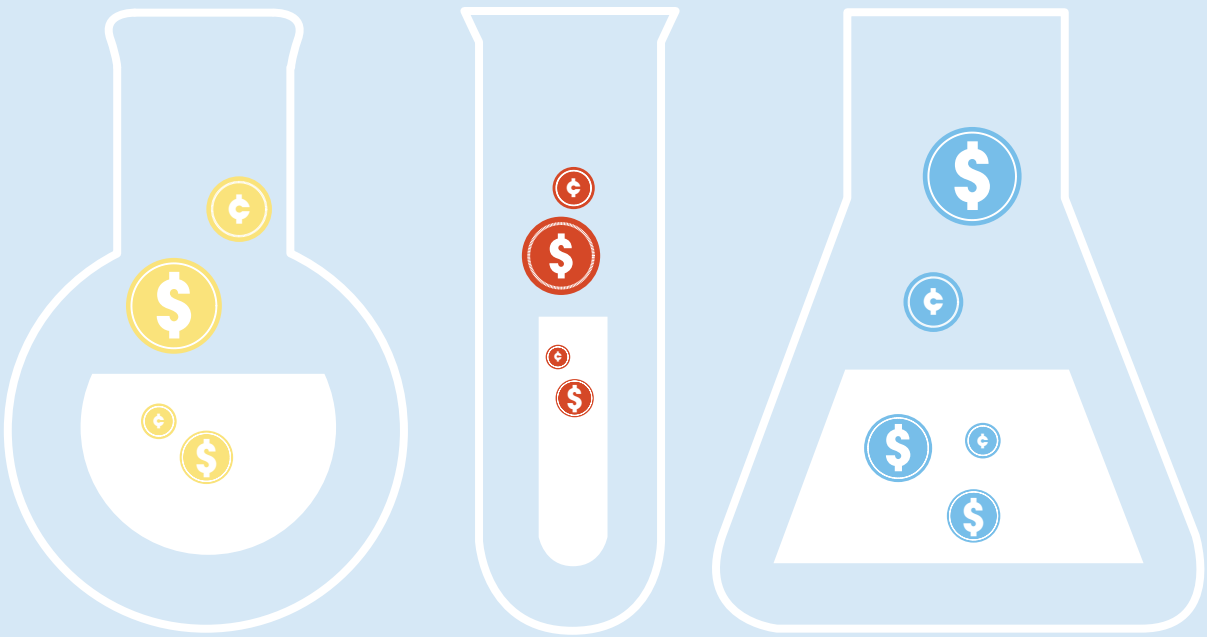


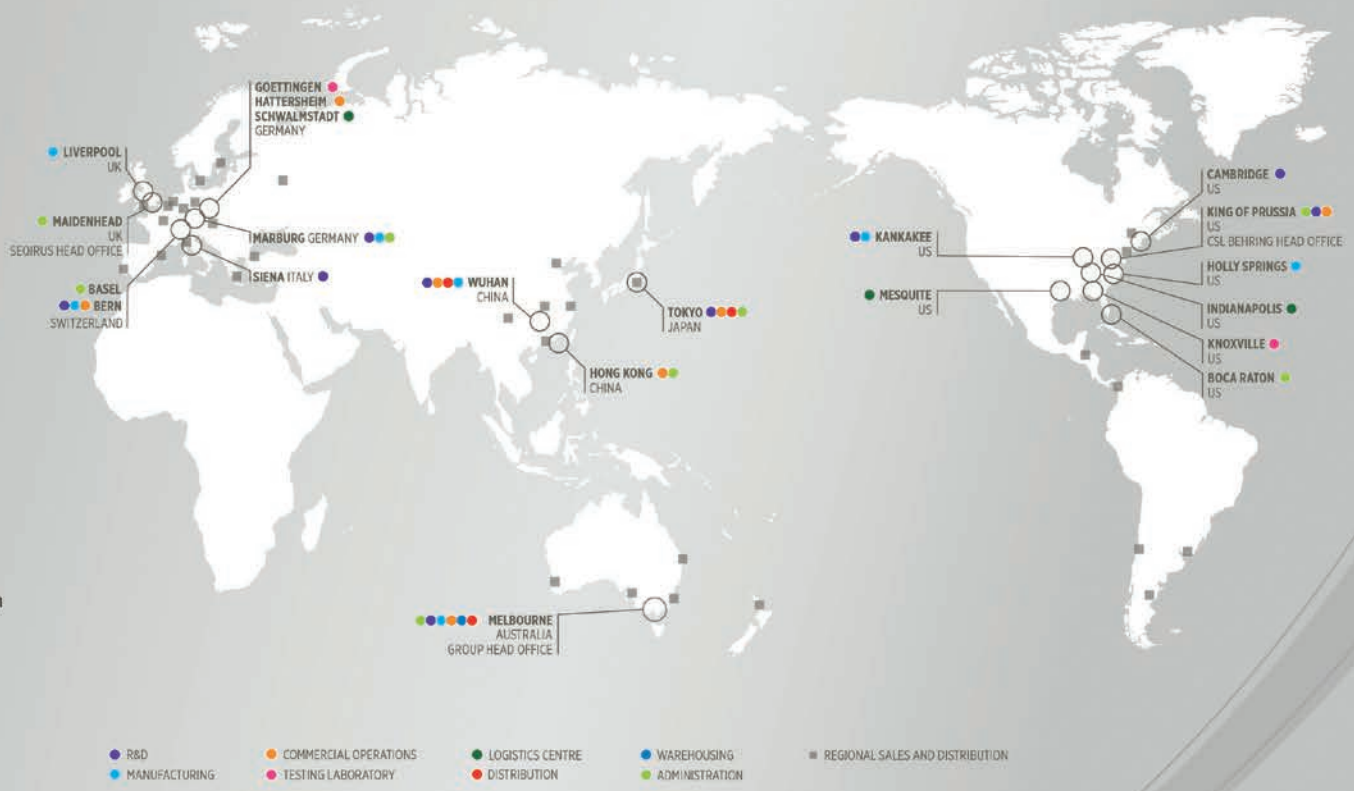
EXHIBIT A.12 Finding the interest rate using the IRR

APPENDIX B

CSL Limited, annual report 2017



CONTENTS



ABOUT CSL

Driven by our promise, CSL is a global biotechnology company that develops and delivers innovative medicines that save lives, protect public health and help people with life-threatening medical conditions live full lives. Our Values guide us in creating sustainable value for our stakeholders.

Delivering on promises is what we do at CSL. Starting a century ago in Melbourne, Australia, we made a promise to save lives and protect the health of people who were stricken with a broad range of serious medical conditions. Today, that same promise has never been stronger. As a leading global biotechnology company, CSL delivers medicines to patients in more than 60 countries, and employs nearly 20,000 people who are driven by a deep passion to serve thousands of patients and other stakeholders around the world.

CSL focuses its world-class research and development (R&D), high-quality manufacturing, and patient-centred management to develop and deliver innovative biotherapies, influenza vaccines and support programs – all to help save lives and treat people with life-threatening medical conditions.

Innovation has been in the DNA of CSL since our beginning in 1916 and continues as the core of everything we do today. Innovation spans all across our organisation - reflected in our 1,400 dedicated scientists who focus every day on solving patients' unmet needs, to our unique capability in creating one of the largest and most efficient plasma collection networks in the world, right through to safely and effectively producing medicines.

CSL supports patient, biomedical and local communities by improving access to therapies, advancing scientific knowledge, supporting future medical researchers, and engaging our staff in the support of local communities. We also contribute to humanitarian programs and relief efforts around the world.

CSL's continuing priority is to ensure the ongoing safety and quality of our medicines, while improving access to innovative therapies that make a real and lasting difference to the lives of people who need them. To achieve this, we drive a culture of continuous improvement in quality and compliance and undertake capacity expansions around the world.

CSL also invests in life-cycle management and market development for our existing products, and in the development of new product opportunities for the longer term. We understand the unique challenges faced by people stricken with life threatening medical conditions because of our long experience, deep knowledge and dedicated focus on preventing and treating serious diseases. We expect that emerging new innovations and support programs can provide unprecedented opportunities to improve patient wellbeing unlike any other time in history.

CSL's operational excellence, commercial capability, combined with a focused global R&D organisation and proven management, give us the confidence to efficiently identify, successfully develop, and dependably deliver innovations that patients need and want.

For more than 100 years, CSL has earned a reputation as a passionate yet responsible organisation which is driven to care for patients and deliver on its commitments. Today, our future has never looked brighter.

BUSINESS HIGHLIGHTS

STRATEGIC OBJECTIVE
GROWTH

Maximise portfolio value & deliver new product launches

CSL's reported net profit after tax was US$1,337 million for the year ended 30 June 2017. On a constant currency basis#, net profit after tax was US$1,427 million.

CSL's total revenue reached US$6,923 million, up 15% on a constant currency basis.

CSL Behring's strong performance resulted in product sales of US$5,811 million, up 12% on a constant currency basis.

Acquired a majority stake in Chinese plasma fractionator Ruide.

STRATEGIC OBJECTIVE
EFFICIENCY

Be the most efficient, highest quality plasma player

Extended CSL Plasma's world leading plasma collection network opening a total of 29 new plasma collection centres.

Capacity expansion projects to position CSL to meet future demand continue across Australia, Germany, Switzerland, the UK and the US.

Exemplary track record of consistent and reliable supply of medicines.

STRATEGIC OBJECTIVE
INFLUENZA

Deliver on influenza strategy

Seqirus is on track to profitability.

A broad product portfolio driving total revenue for the period of US$900 million, up 23% at constant currency#.

Launched three new influenza products in the US:

- FLUAD®;
- FLUCELVAX QUADRIVALENT®; and
- AFLURIA QUADRIVALENT®.

Successful production of cell based candidate influenza vaccine at commercial scale at Holly Springs, US.

STRATEGIC OBJECTIVE
INNOVATION

Pursue new opportunities to diversify portfolio and enhance growth

R&D investment this year reached US$645 million.

Achieved successes in all four R&D strategic areas with new registrations, positive results in some of the largest clinical trials ever conducted in rare diseases and an exciting new collaboration.

Achieved US Food and Drug Administration (FDA) approval, including marketing exclusivity for seven years, of HAEGARDA®, subcutaneous C1-Exterase Inhibitor (C1-INH) replacement therapy to prevent Hereditary Angioedema (HAE) attacks.

Initiation of human trials to investigate three new breakthrough medicines involving monoclonal antibodies.

STRATEGIC OBJECTIVE
PEOPLE & CULTURE

Create a culture that attracts, retains and develops the best talent

More than 19,000 employees in over 30 countries drive CSL's performance.

Publication of CSL's third edition Code of Responsible Business Practice, building on our culture of integrity and responsible business practice.

Measured one point above IBM's global benchmark for employee engagement in our relaunched employee feedback survey.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
FOR THE YEAR ENDED 30 JUNE 2017

	Notes	Consolidated Entity 2017 US$m	2016 US$m
Continuing operations			
Sales revenue		**6,615.8**	5,909.5
Pandemic Facility Reservation fees		**94.0**	68.7
Royalties and Licence revenue		**203.3**	122.7
Other Income		**9.7**	14.4
Total Operating Revenue		**6,922.8**	6,115.3
Cost of sales		**(3,326.8)**	(3,052.8)
Gross profit		**3,596.0**	3,062.5
Research and development expenses	6	**(645.3)**	(613.8)
Selling and marketing expenses		**(697.0)**	(620.9)
General and administration expenses		**(484.8)**	(390.3)
Operating profit		**1,768.9**	1,437.5
Finance costs	2	**(90.0)**	(71.6)
Finance income		**10.9**	13.9
Gain on acquisition	1b	**-**	176.1
Profit before income tax expense		**1,689.8**	1,555.9
Income tax expense	3	**(352.4)**	(313.5)
Net profit for the period		**1,337.4**	1,242.4
Other comprehensive income			
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation of foreign operations, net of hedges on foreign investments	12	**97.5**	(126.9)
Items that will not be reclassified subsequently to profit or loss			
Actuarial gains/(losses) on defined benefit plans, net of tax	18	**75.5**	(71.9)
Total of other comprehensive income/(expenses)		**173.0**	(198.8)
Total comprehensive income for the period		**1,510.4**	1,043.6

Earnings per share (based on net profit for the period)		**US$**	US$
Basic earnings per share	10	**2.937**	2.689
Diluted earnings per share	10	**2.931**	2.683

The consolidated statement of comprehensive income should be read in conjunction with the accompanying notes.

CONSOLIDATED BALANCE SHEET
AS AT 30 JUNE 2017

	Notes	Consolidated Entity 2017 US$m	2016 US$m
CURRENT ASSETS			
Cash and cash equivalents	14	**844.5**	556.6
Trade and other receivables	15	**1,170.4**	1,107.2
Inventories	4	**2,575.8**	2,152.0
Current tax assets		**6.2**	1.6
Other financial assets		**5.2**	0.6
Total Current Assets		**4,602.1**	3,818.0
NON-CURRENT ASSETS			
Other receivables	15	**16.5**	15.6
Other financial assets		**3.9**	2.9
Property, plant and equipment	8	**2,942.7**	2,389.6
Deferred tax assets	3	**496.5**	389.0
Intangible assets	7	**1,055.4**	942.6
Retirement benefit assets	18	**5.6**	5.0
Total Non-Current Assets		**4,520.6**	3,744.7
TOTAL ASSETS		**9,122.7**	7,562.7
CURRENT LIABILITIES			
Trade and other payables	15	**1,155.8**	996.1
Interest-bearing liabilities	11	**122.5**	62.3
Current tax liabilities		**202.5**	207.3
Provisions	16	**134.1**	99.6
Deferred government grants	9	**3.2**	3.1
Derivative financial instruments		**-**	6.0
Total Current Liabilities		**1,618.1**	1,374.4
NON-CURRENT LIABILITIES			
Other non-current liabilities	15	**25.8**	18.8
Interest-bearing liabilities	11	**3,852.7**	3,081.0
Deferred tax liabilities	3	**138.2**	119.2
Provisions	16	**32.9**	40.5
Deferred government grants	9	**35.9**	35.0
Retirement benefit liabilities	18	**255.3**	326.6
Total Non-Current Liabilities		**4,340.8**	3,621.1
TOTAL LIABILITIES		**5,958.9**	4,995.5
NET ASSETS		**3,163.8**	2,567.2
EQUITY			
Contributed equity	12	**(4,534.3)**	(4,213.0)
Reserves	12	**294.2**	187.9
Retained earnings	19	**7,403.9**	6,592.3
TOTAL EQUITY		**3,163.8**	2,567.2

The consolidated balance sheet should be read in conjunction with the accompanying notes.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 30 JUNE 2017

Consolidated Entity	Contributed Equity US$m		Foreign currency translation reserve US$m		Share based payment reserve US$m		Retained earnings US$m		Total US$m	
	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016
As at the beginning of the year	**(4,213.0)**	(3,560.4)	**28.5**	155.4	**159.4**	151.1	**6,592.3**	6,000.8	**2,567.2**	2,746.9
Profit for the period	-	-	-	-	-	-	**1,337.4**	1,242.4	**1,337.4**	1,242.4
Other comprehensive income	-	-	**97.5**	(126.9)	-	-	**75.5**	(71.9)	**173.0**	(198.8)
Total comprehensive income for the full year									**1,510.4**	1,043.6
Transactions with owners in their capacity as owners										
Share based payments	-	-	-	-	**8.8**	8.3	-	-	**8.8**	8.3
Dividends	-	-	-	-	-	-	**(601.3)**	(579.0)	**(601.3)**	(579.0)
Share buy back	**(334.0)**	(670.0)	-	-	-	-	-	-	**(334.0)**	(670.0)
Share issues	-	-	-	-	-	-	-	-	-	-
– Employee share scheme	**12.7**	17.4	-	-	-	-	-	-	**12.7**	17.4
As at the end of the year	**(4,534.3)**	(4,213.0)	**126.0**	28.5	**168.2**	159.4	**7,403.9**	6,592.3	**3,163.8**	2,567.2

The consolidated statement of changes in equity should be read in conjunction with the accompanying notes.

CONSOLIDATED STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED 30 JUNE 2017

	Consolidated Entity	
	2017 US$m	2016 US$m
Cash flows from Operating Activities		
Receipts from customers (inclusive of goods and services tax)	**6,749.2**	5,982.7
Payments to suppliers and employees (inclusive of goods and services tax)	**(4,946.9)**	(4,417.0)
	1,802.3	1,565.7
Income taxes paid	**(468.3)**	(326.2)
Interest received	**6.7**	14.1
Borrowing costs	**(94.1)**	(75.0)
Net cash inflow from operating activities	**1,246.6**	1,178.6
Cash flows from Investing Activities		
Proceeds from sale of property, plant and equipment	**0.1**	0.1
Payments for property, plant and equipment	**(689.1)**	(495.1)
Payments for intangible assets	**(171.5)**	(70.6)
Payments for business acquisition (Net of cash acquired)	**-**	(244.6)
(Payments)/receipts from other financial assets	**(2.4)**	0.1
Net cash outflow from investing activities	**(862.9)**	(810.1)
Cash flows from Financing Activities		
Proceeds from issue of shares	**12.7**	17.4
Dividends paid	**(601.4)**	(579.0)
Proceeds from borrowings	**1,381.4**	1,564.3
Repayment of borrowings	**(581.3)**	(716.9)
Payment for shares bought back	**(314.9)**	(648.2)
Net cash outflow from financing activities	**(103.5)**	(362.4)
Net increase in cash and cash equivalents	**280.2**	6.1
Cash and cash equivalents at the beginning of the financial year	**555.3**	555.5
Exchange rate variations on foreign cash and cash equivalent balances	**7.5**	(6.3)
Cash and cash equivalents at the end of the financial year	**843.0**	555.3

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 30 JUNE 2017

CONTENTS

ABOUT THIS REPORT

Notes to the financial statements:

Corporate information

CSL Limited ("CSL") is a for-profit company incorporated and domiciled in Australia and limited by shares publicly traded on the Australian Securities Exchange. This financial report covers the financial statements for the consolidated entity consisting of CSL and its subsidiaries (together referred to as the Group). The financial report was authorised for issue in accordance with a resolution of directors on 15 August 2017.

A description of the nature of the Group's operations and its principal activities is included in the directors' report.

a. Basis of preparation

This general purpose financial report has been prepared in accordance with Australian Accounting Standards, other authoritative pronouncements of the Australian Accounting Standards Board, International Financial Reporting Standards (IFRS) and the Corporations Act 2001. It presents information on a historical cost basis, except for certain financial instruments including derivatives, which have been measured at fair value. Amounts have been rounded off to the nearest hundred thousand dollars. The presentation of revenue items in the Consolidated Statement of Comprehensive Income and in the Segment Note has been changed from the previous full year financial report. There are no new disclosures; however, revenue items previously disclosed in the Notes have been moved to the Statement. This has been done to provide a comprehensive picture of the components of operating revenue earned by the Group in the Statement. As a result the calculation of Gross Profit has been amended. Prior year comparatives have been presented on a basis consistent with the updated disclosure.

The report is presented in US Dollars, because this currency is the pharmaceutical industry standard currency for reporting purposes. It is the predominant currency of the Group's worldwide sales and operating expenses.

b. Principles of consolidation

The consolidated financial statements comprise the financial statements of CSL and its subsidiaries as at 30 June 2017. CSL has control of its subsidiaries when it is exposed to, and has the rights to, variable returns from its involvement with those entities and when it has the ability to affect those returns. A list of significant controlled entities (subsidiaries) at year-end is contained in Note 17. During the year ended 30 June 2016 CSL assumed control of entities acquired as part of the acquisition of the Novartis Influenza business. Details of the acquisition are contained in Note 1b.

The financial statements of the subsidiaries are prepared using consistent accounting policies and for the same reporting period as the parent company.

In preparing the consolidated financial statements, all intercompany balances and transactions have been eliminated in full. The Group has formed a trust to administer the Group's employee share scheme. This trust is consolidated as it is controlled by the Group.

c. Foreign currency

While the presentation currency of the Group is US dollars, entities in the Group may have other functional currencies, reflecting the currency of the primary economic environment in which the relevant entity operates. The parent entity, CSL Limited, has a functional currency of Australian dollars.

If an entity in the Group has undertaken transactions in foreign currency, these transactions are translated into that entity's functional currency using the exchange rates prevailing at the dates of the transactions. Where the functional currency of a subsidiary is not US dollars, the subsidiary's assets and liabilities are translated on consolidation to US dollars using the exchange rates prevailing at the reporting date, and its profit and loss is translated at average exchange rates. All resulting exchange differences are recognised in other comprehensive income and in the foreign currency translation reserve in equity.

d. Other accounting policies

Significant accounting policies that summarise the measurement basis used and are relevant to an understanding of the financial statements are provided throughout the notes to the financial statements.

e. Key judgements and estimates

In the process of applying the Group's accounting policies, management has made a number of judgements and estimates of future events. Material judgements and estimates are found in the following notes:

f. The notes to the financial statements

The notes to these financial statements have been organised into logical groupings to help users find and understand the information they need. Where possible, related information has been provided in the same place. More detailed information (for example, valuation methodologies and certain reconciliations) has been placed at the rear of the document and cross-referenced where necessary. CSL has also reviewed the notes for materiality and relevance and provided additional information where it is helpful to an understanding of the Group's performance.

g. Significant changes in the current reporting period

There were no changes in accounting policy during the year ended 30 June 2017, nor did the introduction of new accounting standards lead to any change in measurement or disclosure in these financial statements. See Note 24 for details of new accounting standards introduced this financial year.

OUR CURRENT PERFORMANCE

Note 1: Segment Information and Business Combinations

The Group's segments represent strategic business units that offer different products and operate in different industries and markets. They are consistent with the way the CEO (who is the chief operating decision-maker) monitors and assesses business performance in order to make decisions about resource allocation. Performance assessment is based on EBIT (earnings before interest and tax) and EBITDA (earnings before interest, tax, depreciation and amortisation). These measures are different from the profit or loss reported in the consolidated financial statements which is shown after net interest and tax expense. This is because decisions that affect net interest expense and tax expense are made at the Group level. It is not considered appropriate to measure segment performance at the net profit after tax level.

During the first half of the financial year the Company conducted a review of internal reporting to the CEO (the chief operating decision maker) and determined that the reporting of CSL Intellectual Property separately from the rest of the business was no longer relevant to the CEO's review of financial performance. As a consequence the number of operating segments has been reduced from three to two. The revenues and expenses of the prior CSL Intellectual Property segment have been combined with the financial results of the CSL Behring segment. In addition, revenue and expenses previously disclosed as unallocated are now also included in the CSL Behring segment. Items previously disclosed in the CSL Intellectual Property segment and as unallocated are managed by members of the Global Leadership Group, excluding the President of Seqirus, who report directly to the CEO and the performance of those elements is not reported to the CEO separately from similar items included in the CSL Behring business. The Seqirus operating segment already contains all of the revenues and expenses relevant to the CEO's monitoring of financial performance of that business. The revised Segment disclosure therefore replicates the manner in which the CEO monitors the business performance. Prior year comparatives have been restated so as to be presented in a consistent manner with the current year segment results.

The Group's operating segments are:

- CSL Behring – manufactures, markets, and develops plasma therapies (plasma products and recombinants), conducts early stage research on plasma and non-plasma therapies, excluding influenza, receives licence and royalty income from the commercialisation of intellectual property and undertakes the administrative and corporate function required to support the Group.
- Seqirus – manufactures and distributes non-plasma biotherapeutic products.

Note 2:
Revenue and Expenses

In prior years the Group disclosed the component parts of revenue from continuing operations in this Note. In order to provide this information in a clearer manner these disclosures have been moved to the face of the Consolidated Statement of Comprehensive Income.

Recognition and measurement of revenue

Revenue is recognised and measured at the fair value of the consideration that has been or will be received. The Group recognises revenue when the amount of revenue can be reliably measured and it is probable that the future economic benefits will flow to the Group.

Further information about each source of revenue and the criteria for recognition follows.

Sales: Revenue earned (net of returns, discounts and allowances) from the sale of products. Sales are recognised when the significant risks and rewards of ownership of the goods have passed to the buyer.

Royalties: Income received or receivable from licensees of CSL intellectual property. Where the amount payable is based on sales of product, is recognised as it accrues which is when the Group has a legally enforceable claim.

Finance revenue: Income from cash deposits is recognised as it accrues.

Licence revenue: Milestone income received or receivable from licensees of CSL intellectual property is recognised as it accrues.

Pandemic facility reservation fees: Income received from governments in return for access to influenza manufacturing facilities in the event of a pandemic. Contracts are time based and revenue is accrued progressively over the life of the relevant contract.

Other: Rent, proceeds from sale of fixed assets and other income is recognised as it accrues.

Expenses	2017 US$m	2016 US$m
Finance costs	**90.0**	71.6
Depreciation and amortisation of fixed assets	**207.8**	183.7
Amortisation of intangibles	**71.4**	36.6
Total depreciation and amortisation expense	**279.2**	220.3
Write-down of inventory to net realisable value	**189.8**	57.3
Rental expenses relating to operating leases	**57.5**	47.4
Employee benefits expense	**1,618.3**	1,454.3
Net foreign exchange loss	**64.3**	47.5

Recognition and measurement of expenses

Finance costs: Includes interest expense and borrowing costs. These are recognised as an expense when incurred, except where finance costs are directly attributable to the acquisition or construction of a qualifying asset. In this case they are capitalised as part of the cost of the asset. Interest-bearing liabilities and borrowings are stated at amortised cost. Any difference between the borrowing proceeds (net of transaction costs) and the redemption value is recognised in the statement of comprehensive income over the borrowings' period using the effective interest method.

Depreciation and amortisation: Refer to Note 8 for details on depreciation and amortisation of fixed assets and Note 7 for details on amortisation of intangibles.

Write-down of inventory to net realisable value: Included in Cost of Sales in the Statement of Comprehensive Income. Refer to Note 4 for details of inventories.

Employee benefits expense: Refer to Note 5 for further details.

Rental expenses relating to operating leases: Operating leases are leases in which a significant portion of the risks and rewards of ownership are not transferred to the Group. Payments made under operating leases are charged to the statement of comprehensive income on a straight-line basis over the period of the lease.

Goods and Services Tax and other foreign equivalents (GST)

Revenues, expenses and assets are recognised net of GST, except where GST is not recoverable from a taxation authority, in which case it is recognised as part of an asset's cost of acquisition or as part of the expense.

Current taxes

Current tax assets and liabilities are the amounts expected to be recovered from (or paid to) tax authorities, under the tax rates and laws in each jurisdiction. These include any rates or laws that are enacted or substantively enacted as at the balance sheet date.

Deferred taxes

Deferred tax liabilities are recognised for taxable temporary differences. Deferred tax assets are recognised for deductible temporary differences, carried forward unused tax assets and unused tax losses, only if it is probable that taxable profit will be available to utilise them.

The carrying amount of deferred income tax assets is reviewed at the reporting date. If it is no longer probable that taxable profit will be available to utilise them, they are reduced accordingly.

Deferred tax is measured using tax rates and laws that are enacted at the reporting date and are expected to apply when the related deferred income tax asset is realised or when the deferred income tax liability is settled.

Deferred tax assets and liabilities are offset only if a legally enforceable right exists to set-off current tax assets against current tax liabilities and if they relate to the same taxable entity or group and the same taxation authority.

Income taxes attributable to amounts recognised in other comprehensive income or directly in equity are also recognised in other comprehensive income or in equity, and not in the income statement.

CSL Limited and its 100% owned Australian subsidiaries have formed a tax consolidated group effective from 1 July 2003.

KEY JUDGEMENTS AND ESTIMATES

Management regularly assesses the risk of uncertain tax positions, and recognition and recoverability of deferred tax assets. To do this requires judgements about the application of income tax legislation in jurisdictions in which the Group operates and the future operating performance of entities with carry forward losses. These judgements and assumptions, which include matters such as the availability and timing of tax deductions and the application of the arm's length principle to related party transactions, are subject to risk and uncertainty. Changes in circumstances may alter expectations and affect the carrying amount of deferred tax assets and liabilities. Any resulting adjustment to the carrying value of a deferred tax item will be recorded as a credit or charge to the statement of comprehensive income.

Note 4: Inventories

	2017 US$m	2016 US$m
Raw materials	**631.4**	550.5
Work in progress	**995.2**	816.9
Finished products	**949.2**	784.6
Total inventories	**2,575.8**	2,152.0

Raw Materials

Raw materials comprise collected and purchased plasma, chemicals, filters and other inputs to production that will be further processed into saleable products but have yet to be allocated to manufacturing.

Work in Progress

Work in progress comprises all inventory items that are currently in use in manufacturing and intermediate products such as pastes generated from the initial stages of the plasma production process.

Finished Products

Finished products comprise material that is ready for sale and has passed all quality control tests.

Inventories generally have expiry dates and the Group provides for product that is short dated. Expiry dates for raw material are no longer relevant once the materials are used in production. At this stage the relevant expiry date is that applicable to the resultant intermediate or finished product.

Inventories are carried at the lower of cost or net realisable value. Cost includes direct material and labour and an appropriate proportion of variable and fixed overheads. Fixed overheads are allocated on the basis of normal operating capacity.

Net realisable value is the estimated revenue that can be earned from the sale of a product less the estimated costs of both completion and selling. The Group assesses net realisable value of plasma-derived products on a basket of products basis given their joint product nature.

KEY JUDGEMENTS AND ESTIMATES

Various factors affect the assessment of recoverability of the carrying value of inventory, including regulatory approvals and future demand for the Group's products. These factors are taken into account in determining the appropriate level of provisioning for inventory.

Note 5: People Costs

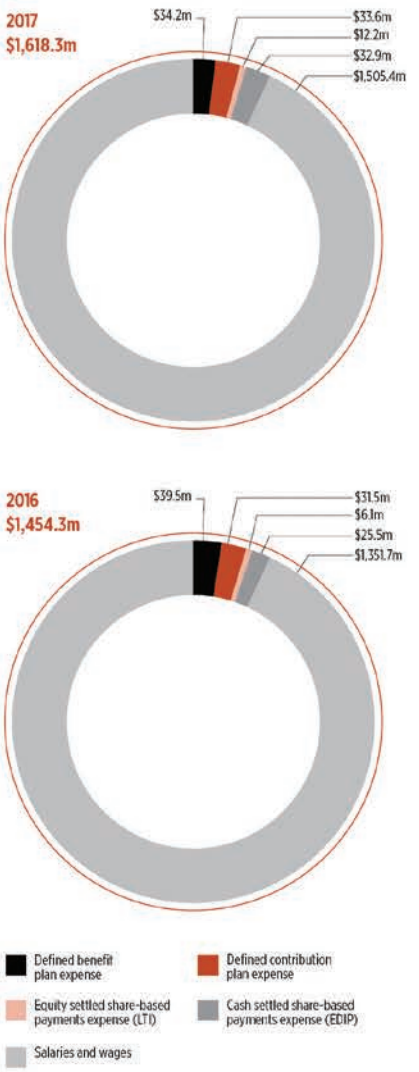
a. Employee benefits

Employee benefits include salaries and wages, annual leave and long-service leave, defined benefit and defined contribution plans and share-based payments incentive awards.

Salaries and wages

Wages and salaries include non-monetary benefits, annual leave and long service leave. These are recognised and presented in different ways in the financial statements:

- The liability for annual leave and the portion of long service leave expected to be paid within twelve months is measured at the amount expected to be paid.
- The liability for long service leave and annual leave expected to be paid after one year is measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date.
- The liability for annual leave and the portion of long service leave that has vested at the reporting date is included in the current provision for employee benefits.
- The portion of long service leave that has not vested at the reporting date is included in the non-current provision for employee benefits.



NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 30 JUNE 2017 CONTINUED

Note 8:
Property, Plant and Equipment

	Land US$m		Buildings US$m		Leasehold improvements US$m		Plant and equipment US$m		Leased property, plant and equipment US$m		Capital work in progress US$m		Total US$m	
Year	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**
Cost	**37.2**	26.4	**535.0**	502.2	**275.9**	223.3	**2,561.5**	2,354.7	**35.4**	33.8	**1,080.0**	621.2	**4,525.0**	3,761.6
Accumulated depreciation / amortisation	**-**	-	**(155.7)**	(131.0)	**(75.5)**	(59.1)	**(1,331.4)**	(1,163.5)	**(19.7)**	(18.4)	**-**	-	**(1,582.3)**	(1,372.0)
Net carrying amount	**37.2**	26.4	**379.3**	371.2	**200.4**	164.2	**1,230.1**	1,191.2	**15.7**	15.4	**1,080.0**	621.2	**2,942.7**	2,389.6
Movement														
Net carrying amount at the start of the year	**26.4**	19.6	**371.2**	291.4	**164.2**	137.0	**1,191.2**	875.7	**15.4**	15.5	**621.2**	502.1	**2,389.6**	1,841.3
Transferred from capital work in progress	**-**	-	**20.7**	55.1	**50.1**	36.4	**135.9**	266.0	**-**	-	**(206.7)**	(357.5)	**-**	-
Business Acquisition	**-**	7.8	**-**	48.6	**-**	-	**-**	227.8	**-**	-	**-**	-	**-**	284.2
Other Additions[1]	**10.0**	-	**0.3**	0.7	**3.4**	2.3	**55.8**	11.3	**4.0**	3.2	**651.9**	493.8	**725.4**	511.3
Disposals	**-**	-	**(0.2)**	(0.1)	**(1.3)**	(0.4)	**(36.6)**	(28.1)	**(2.8)**	(1.8)	**-**	(0.4)	**(40.9)**	(30.8)
Transferred to/from intangibles	**-**	-	**-**	-	**-**	-	**-**	-	**-**	-	**0.4**	0.2	**0.4**	0.2
Depreciation / amortisation for the year	**-**	-	**(20.9)**	(17.1)	**(17.6)**	(11.0)	**(166.5)**	(153.0)	**(2.8)**	(2.6)	**-**	-	**(207.8)**	(183.7)
Accumulated depreciation / amortisation on disposals	**-**	-	**0.1**	0.1	**1.1**	0.4	**29.0**	25.8	**1.8**	1.2	**-**	-	**32.0**	27.5
Currency translation differences	**0.8**	(1.0)	**8.1**	(7.5)	**0.5**	(0.5)	**21.3**	(34.3)	**0.1**	(0.1)	**13.2**	(17.0)	**44.0**	(60.4)
Net carrying amount at the end of the year	**37.2**	26.4	**379.3**	371.2	**200.4**	164.2	**1,230.1**	1,191.2	**15.7**	15.4	**1,080.0**	621.2	**2,942.7**	2,389.6

[1] *The 2017 capital work in progress additions are the result of major capacity projects.*

Property, plant and equipment

Land, buildings, capital work in progress and plant and equipment assets are recorded at historical cost less, where applicable, depreciation and amortisation.

Depreciation is on a straight-line basis over the estimated useful life of the asset.

Buildings	5 – 40 years
Plant and equipment	3 – 15 years
Leasehold improvements	5 – 10 years

Assets' residual values and useful lives are reviewed and adjusted if appropriate at each reporting date. Items of property, plant and equipment are derecognised upon disposal or when no further economic benefits are expected from their use or disposal.

Impairment testing for property, plant and equipment occurs if an impairment trigger is identified. No impairment triggers have been identified in the current year.

An impairment test was carried out on the Seqirus assets as at 30 June 2017 and no impairment was identified.

Gains and losses on disposals of items of property, plant and equipment are determined by comparing proceeds with carrying amounts and are included in the statement of comprehensive income when realised.

40% of the Holly Springs facility, acquired with the Novartis Influenza business, is legally owned by the US Government. Full legal title will transfer to CSL on the completion of the Final Closeout Technical Report, expected in the next three to five years. CSL has full control of the asset and 100% of the value of the facility is included in the consolidated financial statements.

Assets under Finance Leases

Leases of property, plant and equipment where the Group, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. A finance lease is capitalised at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in interest bearing liabilities and borrowings.

Each lease payment is allocated between the liability and finance cost. The finance cost is charged to the statement of comprehensive income over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant and equipment acquired under a finance lease is depreciated over the shorter of the asset's useful life and the lease term.

Leasehold improvements

The cost of improvements to leasehold properties is amortised over the unexpired period of the lease or the estimated useful life of the improvement, whichever is the shorter.

Note 9: Deferred Government Grants

	2017 US$m	2016 US$m
Current deferred income	**3.2**	3.1
Non-current deferred income	**35.9**	35.0
Total deferred government grants	**39.1**	38.1

Government grants are recognised at their fair value where there is reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants relating to an expense item are deferred and recognised in the statement of comprehensive income over the period necessary to match them with the expenses that they are intended to compensate. Government grants received for which there are no future related costs are recognised in the statement of comprehensive income immediately. Government grants relating to the purchase of property, plant and equipment are included in current and non-current liabilities as deferred income and are released to the statement of comprehensive income on a straight line basis over the expected useful lives of the related assets.

RETURNS, RISK & CAPITAL MANAGEMENT

Note 10: Shareholder Returns

Dividends

Dividends are paid from the retained earnings and profits of CSL Limited, as the parent entity of the Group. (See Note 19 for the Group's retained earnings). During the year, the parent entity reported profits of A$6,104.5m (2016: A$814.2m). The parent entity's retained earnings as at 30 June 2017 were A$10,275.9m (2016: A$4,956.7m). During the financial year A$785.3m (the equivalent of US$601.4m) was distributed to shareholders by way of a dividend, with a further A$413.1m (the equivalent of US$326.3m) being determined as a dividend payable subsequent to the balance date.

Dividend paid	FY2017 US$m	FY2016 US$m
Paid: Final ordinary dividend of US$0.68 per share, unfranked, paid on 7 October 2016 for FY16 (prior year: US$0.66 per share, unfranked paid on 2 October 2015 for FY15)	**310.0**	293.4
Paid: Interim ordinary dividend of US$0.64 per share, unfranked, paid on 13 April 2017 for FY17 (prior year: US$0.58 per share, unfranked paid on 15 April 2016 for FY16)	**291.3**	285.6
Total paid	**601.3**	579.0
Dividend determined, but not paid at year end: Final ordinary dividend of US$0.72 per share, unfranked, expected to be paid on 13 October 2017 for FY17, based on shares on issue at reporting date. The aggregate amount of the proposed dividend will depend on actual number of shares on issue at dividend record date (prior year: US$0.68 per share, unfranked paid on 7 October 2016 for FY16)	**326.3**	310.5

The distribution in respect of the 2017 financial year represents a US$1.36 dividend paid for FY2017 on each ordinary share held. These dividends are approximately 46.3% of the Group's basic earnings per share ("EPS") of US$2.937.

Earnings per Share

CSL's basic and diluted EPS are calculated using the Group's net profit for the financial year of US$1,337.4m (2016: US$1,242.4m).

	2017	2016
Basic EPS	**US$2.937**	US$2.689
Weighted average number of ordinary shares	**455,331,196**	461,999,573
Diluted EPS	**US$2.931**	US$2.683
Adjusted weighted average number of ordinary shares, represented by:	**456,374,648**	463,117,064
Weighted average ordinary shares	**455,331,196**	461,999,573
Plus:		
Employee share schemes	**1,043,452**	1,117,491

Diluted EPS differs from Basic EPS as the calculation takes into account potential ordinary shares arising from employee share schemes operated by the Group.

On-market Share Buyback

During the year, the Group completed the remaining A$91m of the A$1bn buyback announced in October 2015 and carried out an on-market share buyback of up to A$500m announced in October 2016 as an element of its capital management program. As at 30 June 2017 shares to a value of A$349.7m have been purchased under the October 2016 buyback.

The on-market buyback was chosen as the most effective method to return capital to shareholders after consideration of the various alternatives. The on-market buyback provides the Group with maximum flexibility and allows shareholders to choose whether to participate through normal equity market processes.

The Group's contributed equity includes the Share Buyback Reserve of (US$4,534.3m) (2016: (US$4,213.0m)). The Group's ordinary share contributed equity has been reduced to nil from previous share buybacks.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 30 JUNE 2017 CONTINUED

Note 12: Equity and Reserves

a. Contributed Equity

	2017 US$m	2016 US$m
Ordinary shares issued and fully paid	-	-
Share buy-back reserve	**(4,534.3)**	(4,213.0)
Total contributed equity	**(4,534.3)**	(4,213.0)

Ordinary shares receive dividends as declared and, in the event of winding up the company, participate in the proceeds from the sale of all surplus assets in proportion to the number of and amounts paid up on shares held. Ordinary shares entitle their holder to one vote, either in person or proxy, at a meeting of the company.

Due to share buy-backs being undertaken at higher prices than the original subscription prices, the balance for ordinary share contributed equity has been reduced to nil, and a reserve created to reflect the excess value of shares bought over the original amount of subscribed capital. Refer to Note 10 for further information about on-market share buy-backs.

Information relating to employee performance option plans and GESP, including details of shares issued under the scheme, is set out in Note 5.

b. Reserves

Movement in reserves

	Share-based payments reserve [i] US$m		Foreign currency translation reserve [ii] US$m		Total US$m	
	2017	2016	2017	2016	2017	2016
Opening balance	**159.4**	151.1	**28.5**	155.4	**187.9**	306.5
Share-based payments expense	**5.2**	5.7	**-**	-	**5.2**	5.7
Deferred tax on share-based payments	**3.6**	2.6	**-**	-	**3.6**	2.6
Net exchange gains / (losses) on translation of foreign subsidiaries, net of hedge	**-**	-	**97.5**	(126.9)	**97.5**	(126.9)
Closing balance	**168.2**	159.4	**126.0**	28.5	**294.2**	187.9

Nature and purpose of reserves

i. Share-based payments reserve

The share-based payments reserve is used to recognise the fair value of options, performance rights and GESP rights issued to employees.

ii. Foreign currency translation reserve

Where the functional currency of a subsidiary is not US dollars, its assets and liabilities are translated on consolidation to US dollars using the exchange rates prevailing at the reporting date, and its profit and loss is translated at average exchange rates. All resulting exchange differences are recognised in other comprehensive income and in the foreign currency translation reserve in equity. Exchange differences arising from borrowings designated as hedges of net investments in foreign entities are also included in this reserve.

Note 13:
Commitments and Contingencies[5]

a. Commitments

Operating leases entered into relate predominantly to leased land and rental properties. The leases have varying terms and renewal rights. Rental payments under the leases are predominantly fixed, but generally contain inflation escalation clauses.

Finance leases entered into relate predominantly to leased plant and equipment. The leases have varying terms but lease payments are generally fixed for the life of the agreement. In some instances, at the end of the lease term the Group has the option to purchase the equipment.

No operating or finance lease contains restrictions on financing or other leasing activities.

Commitments in relation to non-cancellable operating leases, finance leases and capital expenditure contracted but not provided for in the financial statements are payable as follows:

	Operating Leases US$m		Finance Leases US$m		Capital Commitments US$m		Total US$m	
	2017	2016	2017	2016	2017	2016	2017	2016
Not later than one year	**57.9**	46.4	**3.9**	3.3	**354.0**	222.8	**415.8**	272.5
Later than one year but not later than five years	**205.4**	163.9	**11.1**	10.3	**117.0**	7.9	**333.5**	182.1
Later than five years	**404.8**	363.9	**16.2**	17.7	**-**	-	**421.0**	381.6
Sub-total	**668.1**	574.2	**31.2**	31.3	**471.0**	230.7	**1,170.3**	836.2
Future finance charges	**-**	-	**(5.8)**	(6.5)	**-**	-	**(5.8)**	(6.5)
Total	**668.1**	574.2	**25.4**	24.8	**471.0**	230.7	**1,164.5**	829.7

The present value of finance lease liabilities is as follows:

	2017 US$m	2016 US$m
Not later than one year	**3.1**	2.5
Later than one year but not later than five years	**8.4**	7.4
Later than five years	**13.9**	14.9
Total	**25.4**	24.8

b. Contingent assets and liabilities

Litigation

The Group is involved in litigation in the ordinary course of business.

During the period ended 30 June 2017 the Group became aware of two separate patent infringement actions brought by competitors. CSL is highly confident in our intellectual property positions which are the product of more than a decade of innovative research by the Group. The Company is vigorously defending against the claims.

NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 30 JUNE 2017 CONTINUED

EFFICIENCY OF OPERATION

Note 14:
Cash and Cash Equivalents, Cash Flows

	2017 US$m	2016 US$m
Reconciliation of cash and cash equivalents		
Cash at bank and on hand	**562.7**	442.0
Cash deposits	**281.8**	114.6
Less bank overdrafts	**(1.5)**	(1.3)
Total cash and cash equivalents	**843.0**	555.3
Reconciliation of Profit after tax to Cash Flows from Operations		
Profit after tax	**1,337.4**	1,242.4
Non-cash items in profit after tax:		
Depreciation, amortisation and impairment charges	**279.2**	220.3
Loss on disposal of property, plant and equipment	**8.7**	2.3
Gain/(loss) on acquisition	**-**	(176.1)
Share-based payments expense	**12.2**	6.1
Changes in assets and liabilities:		
Increase in trade and other receivables	**(72.5)**	(45.3)
Increase in inventories	**(389.2)**	(216.5)
(Increase)/decrease in retirement benefit assets	**(0.4)**	2.3
Increase in net tax assets	**(111.0)**	(12.7)
Increase in trade and other payables	**153.9**	116.0
(Decrease)/increase in deferred government grants	**(0.6)**	4.5
Increase in provisions	**21.4**	19.7
Increase in retirement benefit liabilities	**7.5**	15.6
Net cash inflow from operating activities	**1,246.6**	1,178.6
Non-cash financing activities		
Acquisition of plant and equipment by means of finance leases	**4.0**	3.2

Cash, cash equivalents and bank overdrafts

Cash and cash equivalents are held for the purpose of meeting short term cash commitments rather than for investment or other purposes. They are made up of:

- Cash on hand.
- At call deposits with banks or financial institutions.
- Investments in money market instruments with original maturities of six months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value.

For the purposes of the cash flow statement, cash at the end of the financial year is net of bank overdraft amounts.

Cash flows are presented on a gross basis. The GST component of cash flows arising from investing and financing activities that are recoverable from or payable to a taxation authority are presented as part of operating cash flows.

Note 15:
Trade Receivables and Payables

a. Trade and other receivables

	2017 US$m	2016 US$m
Current		
Trade receivables	**978.6**	958.8
Less: Provision for impairment loss	**(22.6)**	(31.1)
	956.0	927.7
Sundry receivables	**151.3**	115.0
Prepayments	**63.1**	64.5
Carrying amount of current trade and other receivables	**1,170.4**	1,107.2
Non-current		
Long term deposits/other receivables	**16.5**	15.6
Carrying amount of non-current other receivables[6]	**16.5**	15.6

[6] *The carrying amount disclosed above is a reasonable approximation of fair value. The maximum exposure to credit risk at the reporting date is the carrying amount of each class of receivable disclosed above. Refer to Note 11 for more information on the risk management policy of the Group and the credit quality of trade receivables.*

Trade and other receivables are initially recorded at fair value and are generally due for settlement within 30 to 60 days from date of invoice. Collectability is regularly reviewed at an operating unit level. Debts which are known to be uncollectible are written off when identified. A provision for impairment loss is recognised when there is objective evidence that all amounts due may not be fully recovered. The provision amount is the difference between the receivable's carrying amount and the present value of estimated future cash flows that may ultimately be recovered. Cash flows relating to short-term receivables are not discounted if the effect of discounting is immaterial. When a trade receivable for which a provision for impairment has been recognised becomes uncollectible in a subsequent period, it is written off against the provision.

Other current receivables are recognised and carried at the nominal amount due. Non-current receivables are recognised and carried at amortised cost. They are non-interest bearing and have various repayment terms.

As at 30 June 2017, the Group had made provision for impairment of $22.6m (2016: $31.1m).

	2017 US$m	2016 US$m
Opening balance at 1 July	**31.1**	24.9
Additional allowance/(utilised/written back)	**(8.7)**	6.4
Currency translation differences	**0.2**	(0.2)
Closing balance at 30 June	**22.6**	31.1

Non-trade receivables do not include any impaired or overdue amounts and it is expected they will be received when due. The Group does not hold any collateral in respect to other receivable balances.

KEY JUDGEMENTS AND ESTIMATES

In applying the Group's accounting policy to trade and other receivables with governments and related entities in South Eastern Europe as set out in Note 11, significant judgement is involved in first assessing whether or not trade or other receivable amounts are impaired and thereafter in assessing the extent of impairment. Matters considered include recent trading experience, current economic and political conditions and the likelihood of continuing support from agencies such as the European Central Bank.

b. Trade and other payables

	2017 US$m	2016 US$m
Current		
Trade payables	**399.0**	303.5
Accruals and other payables	**732.1**	669.1
Share-based payments (EDIP)	**24.7**	23.5
Carrying amount of current trade and other payables	**1,155.8**	996.1
Non-current		
Accruals and other payables	**0.6**	0.1
Share-based payments (EDIP)	**25.2**	18.7
Carrying amount of non-current other payables	**25.8**	18.8

Trade and other payables represent amounts reflected at notional amounts owed to suppliers for goods and services provided to the Group prior to the end of the financial year that are unpaid. Trade and other payables are non-interest bearing and have various repayment terms but are usually paid within 30 to 60 days of recognition.

Receivables and payables include the amount of GST receivable or payable. The net amount of GST recoverable from, or payable to, taxation authorities is included in other receivables or payables in the balance sheet.

Note 16: Provisions

	Employee benefits US$m		Other US$m		Total US$m	
	2017	2016	2017	2016	2017	2016
Current	**103.4**	99.0	**30.7**	0.6	**134.1**	99.6
Non-current	**32.5**	32.1	**0.4**	8.4	**32.9**	40.5

Other provisions are recognised when all three of the following conditions are met:

- The Group has a present legal or constructive obligation arising from past transactions or events.
- It is probable that an outflow of resources will be required to settle the obligation.
- A reliable estimate can be made of the amount of the obligation.

Provisions are not recognised for future operating losses.

Provisions recognised reflect management's best estimate of the expenditure required to settle the present obligation at the reporting date. Where the effect of the time value of money is material, provisions are determined by discounting the expected future cash flows required to settle the obligation at a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a borrowing cost.

Detailed information about the employee benefits is presented in Note 5.

Other provisions include $29.8m (2016: nil) in respect of two contracts deemed to be onerous. The contractual obligations under these contracts generated cash outflows that are greater than the expected cash inflows associated with the contract. One of the contracts relates to a minimum purchase obligation and the other to milestone payments.

OTHER NOTES

Note 17: Related Party Transactions

Ultimate controlling entity

The ultimate controlling entity is CSL Limited, otherwise described as the parent company.

Related party transactions

The parent company entered into the following transactions during the year with related parties in the Group.

Wholly owned subsidiaries

- Loans were advanced and repayments received on the long term intercompany accounts.
- Interest was charged on outstanding intercompany loan account balances.
- Sales and purchases of products.
- Licensing of intellectual property.
- Provision of marketing services by controlled entities.
- Management fees were received from a controlled entity.
- Management fees were paid to a controlled entity.

The transactions were undertaken on commercial terms and conditions.

Payment for intercompany transactions is through intercompany loan accounts and may be subject to extended payment terms.

Ownership interests in related parties

All transactions with subsidiaries have been eliminated on consolidation.

INDEPENDENT AUDITOR'S REPORT
FOR THE YEAR ENDED 30 JUNE 2017

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Independent Auditor's Report to the Members of CSL Limited

Report on the Audit of the Financial Report

Opinion

We have audited the financial report of CSL Limited (the Company), and its subsidiaries (collectively the Group), which comprises the consolidated statement of financial position as at 30 June 2017, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion, the accompanying financial report of the Group is in accordance with the *Corporations Act 2001*, including:

(i) giving a true and fair view of the consolidated financial position of the Group as at 30 June 2017 and of its consolidated financial performance for the year ended on that date; and

(ii) complying with Australian Accounting Standards and the Corporations Regulations 2001.

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Group in accordance with the auditor independence requirements of the *Corporations Act 2001* and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial report of the current year. These matters were addressed in the context of our audit of the financial report as a whole, and in forming our opinion thereon, but we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

INDEPENDENT AUDITOR'S REPORT
FOR THE YEAR ENDED 30 JUNE 2017 CONTINUED

A further description of our responsibilities for the audit of the financial report is located at the Auditing and Assurance Standards Board website at: http://www.auasb.gov.au/auditors_files/ar2.pdf. This description forms part of our auditor's report.

Report on the Audit of the Remuneration Report

Opinion on the Remuneration Report

We have audited the Remuneration Report included in pages 13 to 38 of the directors' report for the year ended 30 June 2017.

In our opinion, the Remuneration Report of CSL Limited for the year ended 30 June 2017, complies with section 300A of the *Corporations Act 2001*.

Responsibilities

The Directors of the Company are responsible for the preparation and presentation of the Remuneration Report in accordance with section 300A of the *Corporations Act 2001*. Our responsibility is to express an opinion on the Remuneration Report, based on our audit conducted in accordance with Australian Auditing Standards.

Ernst & Young

Ernst & Young

Rodney Piltz
Partner
Melbourne
15 August 2017

ENDNOTES

The running case for the book is CSL Limited *Annual Report 2017*. Excerpts can be found in Appendix B, and the company's online version at: http://annualreport.csl.com.au/home.htm.

Chapter 1

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2 'Understanding Financial Statements', from Customer Service FAQs. Copyright © 2000–2015 Dun & Bradstreet, Inc. Used by permission. http://www.dnb.com/customer-service/understanding-financialstatements.html.
3 Australian Accounting Standards Board, ED 264 'Conceptual Framework for Financial Reporting', paragraph 1.2, June 2015, http://www.aasb.gov.au/admin/file/content105/c9/ACCED264_06-15.pdf.
4 Australian Accounting Standards Board, © Commonwealth of Australia 2004. All legislation herein is reproduced by permission but does not purport to be the official or authorised version. It is subject to Commonwealth of Australia copyright. The *Copyright Act 1968* permits certain reproduction and publication of Commonwealth legislation. In particular, s.182A of the Act enables a complete copy to be made by or on behalf of a particular person. For reproduction or publication beyond that permitted by the Act, permission should be sought in writing from the Commonwealth available from the Australian Accounting Standards Board. Requests in the first instance should be addressed to the Administration Director, Australian Accounting Standards Board, PO Box 204, Collins Street West, Melbourne, Victoria, 8007; Copyright © International Financial Reporting Standards Foundation. All rights reserved. Reproduced by Cengage Learning Australia with the permission of the International Financial Reporting Standards Foundation®. No permission granted to third party users of this publication to reproduce or distribute.

Chapter 2

1 Australian Accounting Standards Board, 'Accounting Standard 108: Accounting Policies, Changes in Accounting Estimates and Errors', http://www.aasb.gov.au/admin/file/content105/c9/AASB108_07-04_COMPmay11_07-11.pdf. Published by Australian Accounting Standards Board, © 2011.
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3 'Samsung makes record profit of $109m a day as chip demand soars', *The Guardian*, Samsung, 31 October 2017, https://www.theguardian.com/technology/2017/oct/31/samsung-record-profit-112m-a-day-chip-demand-soars; Sam Byford, 'Samsung predicts record profits for second straight quarter', *The Verge*, 12 October 2017, https://www.theverge.com/2017/10/12/16467628/samsung-q3-2017-record-earnings-guidance; 'Samsung record profits mask crisis without and within', *Financial Times*, 13 October 2017, https://www.ft.com/content/981eed6c-9c46-11e7-8cd4-932067fbf946; Richard Lawler, 'Samsung collects record profits, again', *ENGadget*, 31 October 2017, https://www.engadget.com/2017/10/31/samsung-q3-2017-earnings-oled-iphone-x/; Saheli Roy Choudhury, 'Samsung predicts record profits for third quarter as memory business booms', *CNBC*, 12 October 2017, https://www.cnbc.com/2017/10/12/samsung-third-quarter-earnings-guidance.html.
4 CSL Limited, 'Five Year Summary', *Annual Report 2017*, p. 6.
5 Myer, *Annual Report 2017*, p. 61; JB Hi-Fi, *Annual Report 2017*, p. 64.
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7 CSL Limited, 'Our Corporate Responsibility', http://corporateresponsibility.csl.com.au/ (accessed 02/03/2018).
8 ASX Corporate Governance Council, *Corporate Governance Principles and Recommendations*, 3rd Edition, 2014.

Chapter 4

1 CSL Limited, *Annual Report 2017*, p. 89.
2 Wesfarmers, *2017 Annual Report*, p. 104.

Chapter 5

1 Warfield & Associates, Employee fraud in Australian financial institutions, 2013, http://warfield.com.au/wp-content/uploads/2015/12/pub1.pdf.
2 CSL, *Annual Report 2017*, p. 125.
3 Ibid., pp. 55–56.
4 Ibid., 'Note 14: Cash and Cash Equivalents, Cash Flows', p. 108.
5 Ibid., p. 101.

Chapter 6

1 CSL Limited, Annnual Report 2017, p. 109.
2 CPA Australia, 'Notes to the financial statements: 7 – Trade and Other Receivables', *Annual Report 2016*, p. 84.
3 CPA Australia, 2017, *Integrated Report 2017*, https://www.cpaaustralia.com.au/~/media/corporate/allfiles/document/about/annual-report-2017.pdf?la=en.
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5 'How do I get a copy of my credit report?'. Published by Office of the Australian Information Commissioner, © Australian Government. For more information visit the Office of the Australian Information Commissioner (OAIC), http://www.oaic.gov.au/privacy/privacy-topics/credit-and-finance/how-do-i-get-a-copy-ofmy-credit-report'
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2 Ibid., paragraph 36.
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Chapter 9

1 Chartered Accountants Australia and New Zealand, *Annual Report 2017*, p. 81.
2 Australian Accounting Standards Board, 'Accounting Standard 137 Provisions, Contingent Liabilities and Contingent Assets', 'Objective', 2015, p. 6.
3 Ibid., paragraph 12–13.
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Chapter 10

1 *Trinkler v. Beale & Ors* [2009] NSWCA 30; *Commissioner of State Revenue (Vic) v Danvest Pty Ltd & Anor* (December 2017, Court of Appeal, Victoria).

Chapter 11

1 CSL Limited, 'Note 12: Equity and RE ', *Annual Report 2017*, p. 106.
2 Commonwealth Bank, 'Dividend reinvestment plan', https://www.commbank.com.au/about-us/shareholders/managing-your-shares/dividend-reinvestment-plan.html. The full document is available at their website.
3 Australian Taxation Office, 'Share buy-backs', 2011, https://www.ato.gov.au/General/Capital-gains-tax/Shares,-units-and-similar-investments/Share-buy-backs/.

Chapter 12

1 Australian Accounting Standards Board, 'Accounting Standard 107 Statement of Cash Flows, 2016', Paragraph 19.
2 Ibid., Paragraph 42.

Chapter 13

1 Peter Sivey, 'Health insurance: Don't blame young people for your rising premiums', *ABC News,* 19 October 2017, http://www.abc.net.au/news/2017-10-18/health-insurance-dont-blame-young-people-for-rising-premiums/9061936.
2 Australian Accounting Standards Board, Accounting Standard 101 Presentation of Financial Statements, 2015, paragraph 1.
3 Cochlear, *Annual Report 2017*, 'Chairman's report', p. 2.

Appendix A

1 Built-in functions can be accessed in Microsoft Excel by clicking on the Paste function icon, clicking on financial, and then scrolling down to the desired function.
2 In logarithmic form, $(1 + r)6 = 2$ can be rewritten as $\log(1 + r)6 = \log 2$, or $6 \log(1 + r) = \log 2$. Therefore, $\log(1 + r) = \log 2 \div 6$, which simplifies to $\log(1 + r) = 0.1155245$. Switching back to the equivalent exponential form, $e0.1155245 = (1 + r)$, $(1 + r) = 1.122462$, and $r = 0.122462$ (12.2462%).
3 Using a business calculator, simply input 1 P/YR, 200 FV, 100 PV, and 12 I/ YR and solve for *n*. In logarithmic form, $(1 + 0.12)n = 2$ can be rewritten as $\log(1 + .12)n = \log 2$, or $n \log 1.12 = \log 2$. Therefore, $n = (\log 2) \div (\log 1.12) = 6.116$.
4 An ordinary annuity is paid or received at the end of each period, whereas an annuity due is paid or received at the beginning of each period. In examples throughout this book, we will assume the annuity is ordinary.

INDEX

D

E

NOTES

REVIEW

KEY DEFINITIONS

accounting
The process of identifying, measuring and communicating economic information to permit informed judgements and decisions.

economic entity assumption
The assumption made by accountants that the financial activities of a business can be separated from the financial activities of the business' owner(s).

accounting period assumption
The assumption made by accountants that economic information can be meaningfully captured and communicated over short periods of time.

monetary unit assumption
An assumption made by accountants that the dollar is the most effective means to communicate economic activity.

going concern assumption
The assumption made by accountants that a company will continue to operate into the foreseeable future.

income statement (profit and loss statement)
The income statement reports a company's revenues and expenses and the resulting profit or loss.

revenue
An increase in resources resulting from the sale of goods or the provision of services.

revenue recognition principle
The principle that revenue should be recorded when a resource has been earned and not just when the cash is received.

expense
A decrease in resources resulting from the operation of a business.

matching principle
The principle that expenses should be recorded in the period resources are used to generate revenues.

income statement
The financial statement that reports a company's revenues and expenses over a specific period of time.

balance sheet
A financial statement that reports a business' assets, liabilities and equity at a specific point in time.

asset
An economic resource that is objectively measurable, results from a prior transaction and will provide future economic benefit.

cost principle
The principle that assets should be recorded and reported at the cost paid to acquire them. Sometimes referred to as the 'historical cost principle'.

liability
An obligation of a business that results from a past transaction and will require the sacrifice of economic resources at a future date.

equity
The difference between a business' assets and liabilities, representing the share of assets that is claimed by the business' owner(s).

contributed capital
The resources that investors contribute to a business in exchange for ownership interest.

dividends
Profits that are distributed to owners (usually called drawings if the business is not a company).

retained earnings
Profits that are kept in the business.

statement of changes in equity
A financial statement that reports the change in a business' equity (contributed equity, reserves and retained earnings) over a specific period of time.

cash flow statement
A financial statement that reports a business' sources and uses of cash over a specific period of time.

LEARNING OBJECTIVES

- **LO1** Explain the four assumptions made when communicating accounting information.
- **LO2** Describe the purpose and structure of an income statement and the terms and principles used to create it.
- **LO3** Describe the purpose and structure of a balance sheet and the terms and principles used to create it.
- **LO4** Describe the purpose of a statement of changes in equity and how it links the income statement and the balance sheet.
- **LO5** Describe the purpose and structure of a cash flow statement and the terms and principles used to create it.
- **LO6** Appreciate the objectives of financial reporting and the qualitative characteristics that make accounting information useful.
- **LO7** Review the language of accounting.

KEY FORMULAS

KEY FORMULA 1.1 INCOME STATEMENT

Revenues – Expenses = Net Profit or Net Loss
(or Income, more formally, Total Comprehensive Income)

KEY FORMULA 1.2 THE RELATIONSHIP BETWEEN ASSETS, LIABILITIES AND EQUITY

Assets = Liabilities + Equity

KEY FORMULA 1.3 STATEMENT OF CHANGES IN EQUITY (THE RETAINED EARNINGS PART)

Retained Earnings, Beginning Balance
+/– Net Profit/Loss
– Dividends
= Retained Earnings, Ending Balance

KEY FORMULA 1.4 THE CASH FLOW STATEMENT

Cash Flows Provided (Used) by Operating Activities
+/– Cash Flows Provided (Used) by Investing Activities
+/– Cash Flows Provided (Used) by Financing Activities
= Net Increase (Decrease) in Cash
+ Cash at the beginning
= Cash at the end

KEY DEFINITIONS

relevance
The capacity of accounting information to make a difference in decisions.

materiality
The threshold at which a financial item begins to affect decision-making.

faithful representation
Financial information that is presented in a way that is complete, neutral and free from error.

comparability
The ability to use accounting information to be weighed against or contrasted to the financial activities of different businesses.

verifiability
When information allows different independent observers to arrive at the same or similar outcomes.

timeliness
When information is provided quickly enough that the user can take action.

understandability
The ability of accounting information to be comprehensible to those who have a 'reasonable understanding of business and economic activities and accounting and a willingness to study the information with reasonable diligence'.

Conceptual Framework for Financial Reporting
The objectives, characteristics and concepts that guide the manner in which accounting is practised.

DEMONSTRATION PROBLEM

On 1 March, Sarah begins a tutoring service that she will operate for *four* months. With $400 borrowed from a friend and $1000 of her own money, she purchases a $1200 accounting licence and software and $80 of supplies. Sarah promises to pay her friend $10 interest at the end of each month and to pay back the full $400 at the end of June.

Sarah charges $50 per tutoring session. During March, she conducted 40 sessions and bought $100 of additional supplies. At the end of the month, Sarah has not collected on sixteen of the 40 sessions, and she has $50 of supplies left over. Sarah withdrew $400 from the business during March. Prepare Sarah's income statement and statement of changes in equity for the month ending 31 March and her balance sheet on 31 March.

DEMONSTRATION PROBLEM SOLUTION

Sarah's Tutoring Service Income statement for the month ending 31 March		
Revenue:		$2 000
Expenses:		
Depreciation (licence and software 1/4 months)	$ 300	
Supplies	130	
Interest	10	
Total expenses		440
Net Income		$1 560

Sarah's Tutoring Service Statement of changes in equity for the month ending 31 March	
Retained earnings, 1 March	$ 0
Add: Net income	1 560
Less: Dividends	400
Retained earnings, 31 March	$1 160

Sarah's Tutoring Service Balance sheet at 31 March		
Cash	$810	
Accounts receivable	800	
Licence and Software (net)	900	
Supplies	50	
Total assets		$2 560
Note payable	$ 400	
Total liabilities		$ 400
Contributed capital	$1 000	
Retained earnings	1 160	
Total equity		2 160
Total liabilities and equity		$2 560

TERMS USED TO IDENTIFY AND DESCRIBE ECONOMIC INFORMATION

Term	Definition	Reported on the
Asset	A resource of a business	Balance sheet
Liability	An obligation of a business	Balance sheet
Equity	The difference between assets and liabilities	Balance sheet
Contributed equity (capital)	Equity resulting from contributions from owners (often from issuing shares)	Balance sheet
Retained earnings	Equity resulting from profitable operations	Balance sheet and statement of changes in equity (change in retained earnings)
Revenue	An increase in assets resulting from selling a good or providing a service	Income statement
Expense	A decrease in assets resulting from selling a good or providing a service	Income statement
Dividend (Drawings)	A distribution of profits to owners	Statement of changes in equity

PRINCIPLES USED TO MEASURE ECONOMIC INFORMATION

Principle	Definition	Ramification
Revenue recognition	Revenues are recorded when they are earned	The receipt of cash is not required to record a revenue. If you sell to a customer who will definitely pay you next week, the revenue is earned when the sale is made, not when you receive the cash
Matching	Expenses are recorded in the time period when they are incurred to generate revenues	For many assets, the cost of the asset must be spread over the periods when it is used – we call this depreciation
Cost	Assets are recorded at their historical costs	Except in a few cases, market values are not used for reporting asset values

ASSUMPTIONS MADE WHEN COMMUNICATING ECONOMIC INFORMATION

Assumption	Definition	Ramification
Economic entity	The financial activities of a business can be accounted for separately from the business' owners	We do not have to worry that the financial information of the owner is mixed with the financial information of the business
Monetary unit	The dollar, unadjusted for inflation, is the best means of communicating accounting information	All transactions need to have a specific dollar value to be recorded
Accounting period	Accounting information needs to be communicated effectively over short periods of time	Most businesses prepare half-yearly and annual financial statements
Going concern	The company for which we are accounting will continue its operations indefinitely	If an entity is not selling its assets, then assets (like the drone) are recorded at the value to the business (cost less depreciation)

QUALITATIVE CHARACTERISTICS THAT MAKE ACCOUNTING INFORMATION USEFUL

Term	Definition	Ramification
Relevance	Accounting information should have the capacity to affect decisions	Information should have predictive or feedback value and should be timely
Materiality	The threshold over which an item could begin to affect decisions	When an amount is small enough, normal accounting procedures are not always followed. Note CSL reports to the nearest $0.1 million
Faithful representation	Faithfully represent the phenomena that it purports to represent	Financial reports represent economic phenomena in words and numbers
Prudence (Conservatism)	When uncertainty exists, accounting information should present the least optimistic alternative	An entity should choose accounting techniques that guard against overstating revenues or assets
Comparability	Accounting information should be comparable across different businesses. This is aided by consistency where use of the same accounting method aids comparability	Entities must disclose the accounting methods that they use so that comparisons across companies can be made
Verifiability	Verifiability helps assure users that information is faithfully represented	Different knowledgeable and independent observers could reach consensus
Timeliness	Information available to decision-makers before they make decisions	The older the information generally the less useful it is
Understandability	Accounting information should be comprehensible by those willing to spend a reasonable amount of time studying it	Users must spend a reasonable amount of time studying accounting information for it to be understood

FINANCIAL STATEMENTS USED TO COMMUNICATE ECONOMIC INFORMATION

Statement	Purpose	Structure	Links to other statements
Income statement	Shows a company's revenues and expenses over a specific period of time	Revenue – Expenses = Net Profit/ Loss	Net profit goes to the statement of changes in equity to calculate retained earnings
Balance sheet	Shows a company's assets, liabilities and equity at a specific point in time	Assets = Liabilities + Equity	The balance in retained earnings comes from the statement of changes in equity The balance in cash should agree with the ending cash balance on the cash flow statement
Statement of changes in equity (retained earnings section)	Shows the changes in a company's retained earnings over a specific period of time	Beginning Retained Earnings + Profits (or – Losses) – Dividends = Ending Retained Earnings	Ending retained earnings goes to the balance sheet
Cash flow statement	Shows a company's inflows and outflows of cash over a specific period of time	Operating Cash Flows +/– Investing Cash Flows +/– Financing Cash Flows = Net Change in Cash	The ending cash balance on the cash flow statement should agree with the balance in cash on the balance sheet

REVIEW

KEY DEFINITIONS

sole proprietorship (sole trader)
A business owned by one person.

partnership
A business that is formed when two or more proprietors join together to own a business.

company (or corporation)
A separate legal entity that is established by registering with ASIC.

Australian Securities and Investments Commission (ASIC)
The agency charged with protecting investors and maintaining the integrity of securities markets.

public company
A separate legal entity in which ownership is available to the general public.

Generally Accepted Accounting Principles (GAAP)
The accounting standards, rules, principles and procedures that comprise authoritative practice for financial accounting.

Australian Accounting Standards Board (AASB)
The standard-setting body whose mission is 'to develop and maintain high-quality financial reporting standards'.

International Financial Reporting Standards (IFRS)
Standards issued by the International Accounting Standards Board.

International Accounting Standards Board (IASB)
A board, similar to the AASB, whose mission is to develop a single set of high-quality standards requiring transparent and comparable information.

consolidated balance sheet
A type of balance sheet that groups together the parent company and its subsidiaries as one reporting entity.

current asset
Any asset that is reasonably expected to be converted to cash or consumed within one year of the balance sheet date.

non-current asset
A resource that is used in a company's operations for more than one year and not intended for resale.

current liability
An obligation that is reasonably expected to be satisfied within one year.

non-current liability
An obligation that is not expected to be satisfied within one year.

contributed equity
The amount of equity a company generates through the sale of shares to investors (shareholders).

multi-step income statement
Calculates income by grouping certain revenues and expenses together and calculating several subtotals of income.

other comprehensive income
Includes gains and losses not included in traditional revenue and expense items.

sales revenue
The resources that a company generates during a period from selling its inventory.

cost of sales
The cost of the inventory sold during a period.

gross profit (gross margin)
The profit that a company generates when considering only the sale price and the cost of the product sold.

operating expenses
Recurring expenses that a company incurs during normal operations.

profits before income tax expense
The profit that a company generates when considering both the cost of the inventory and the normal expenses incurred to operate the business.

income tax expense
The amount of income tax expense for a given period.

horizontal analysis
A method of analysing a company's account balances over time by calculating absolute and percentage changes in each account.

LEARNING OBJECTIVES

- **LO1** Explore the three major forms of business.
- **LO2** Define Generally Accepted Accounting Principles (GAAP) and their origins.
- **LO3** Describe the main classifications of assets, liabilities and equity in a balance sheet.
- **LO4** Discuss the main subtotals of income on an income statement.
- **LO5** Analyse the balance sheet and the income statement using horizontal and vertical analyses.
- **LO6** Describe the structure of a statement of changes in equity.
- **LO7** Look at the types of information usually disclosed along with financial statements.

KEY FORMULAS

KEY FORMULA 2.1 ASSETS

Current Assets
+ Non-current Assets
= Total Assets

KEY FORMULA 2.2 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

KEY FORMULA 2.3 VERTICAL ANALYSIS

	For the balance sheet	For the income statement
Percentage	$\frac{\text{Account Balance}}{\text{Total Assets}}$	$\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

vertical analysis
A method of comparing a company's account balances within one year by dividing each account balance by a base amount to yield a percentage.

common-size financial statement
A statement in which all accounts have been standardised by the overall size of the company.

notes to the financial statements
The additional textual and numerical information immediately following the financial statements.

independent auditor's report
A report, prepared by a registered company auditor for the shareholder, stating an opinion on whether the financial statements present fairly, in conformity with Australian Accounting Standards, the company's financial condition and results of operations and cash flows.

directors' report
Forms part of the financial report and covers matters which are the Board of Directors' responsibility.

DEMONSTRATION PROBLEM

The following items were taken from the financial statements of Susan's Sportswear Suppliers. Use the items to prepare a multi-step income statement for the year ending 30 June and a classified balance sheet at 30 June. For each statement, prepare a vertical analysis. All dollar amounts are in thousands of dollars.

Accounts payable	$ 62 432
Accounts receivable	206 024
Accrued liabilities	43 789
Cash and cash equivalents	264 585
Contributed capital	205 465
Cost of sales	511 101
Current portion of long-term debt	4 596
Deferred tax asset, current	17 442
Deferred tax liability, non-current	7 716
Goodwill	12 157
Income tax expense	70 548
Income taxes payable	8 069
Intangibles and other assets	24 475
Interest expense	1 627
Interest revenue	2 107
Inventories	126 808
Non-current loan	16 335
Net sales	951 786
Prepaid expenses and other current assets	6 028
Property, plant and equipment	126 247
Retained earnings	435 364
Selling, general and administrative expenses	250 496

DEMONSTRATION PROBLEM SOLUTION

Susan's Sportswear Suppliers Income statement for the year ending 30 June		
Net sales	$951 786	100.0%
Cost of sales	511 101	53.7%
Gross profit	$440 685	46.3%
Selling, general and administrative expenses	250 496	26.3%
Other revenues and expenses:		
Interest revenue	2 107	0.2%
Interest expense	(1 627)	0.2%
Profits before income tax	$190 669	20.0%
Income tax expense	70 548	7.4%
Net profit	$120 121	12.6%

Susan's Sportswear Suppliers Balance sheet as at 30 June		
Assets		
Current assets:		
Cash and cash equivalents	$264 585	33.8%
Accounts receivable, net	206 024	26.3%
Inventories, net	126 808	16.2%
Deferred tax asset	17 442	2.2%
Prepaid expenses and other current assets	6 028	0.8%
Total current assets	$620 887	79.2%
Property, plant, and equipment, net	126 247	16.1%
Intangibles and other assets	24 475	3.1%
Goodwill	12 157	1.6%
Total assets	$783 766	100.0%
Liabilities and shareholders' equity		
Current liabilities:		
Accounts payable	$ 62 432	8.0%
Accrued liabilities	43 789	5.6%
Income taxes payable	8 069	1.0%
Current portion of long-term debt	4 596	0.6%
Total current liabilities	$118 886	15.2%
Non-current loan	16 335	2.1%
Deferred tax liability	7 716	1.0%
Total liabilities	$142 937	18.2%
Shareholders' equity:		
Contributed capital	$205 465	26.2%
Retained earnings	435 364	55.6%
Total shareholders' equity	$640 829	81.8%
Total liabilities and shareholders' equity	$783 766	100.0%

REVIEW

KEY DEFINITIONS

accounting information system
The system that identifies, records, summarises and communicates the various transactions of a business.

accounting transaction
Any economic event that affects a business' assets, liabilities and/or equity at the time of the event.

account
An accounting record that accumulates the activity of a specific item and yields the item's balance.

chart of accounts
The list of accounts that a business uses to capture its business activities.

dual nature of accounting
Every accounting transaction must affect at least two accounts.

dual-entry accounting system
A system of accounting in which every accounting transaction affects at least two accounts.

debit
A use of funds, recorded on the left-hand side of a T-account.

credit
A source of funds, recorded on the right-hand side of a T-account.

journal
A chronological record of transactions.

ledger
A collection of accounts and their balances.

trial balance
A listing of accounts and their balances at a specific point in time.

LEARNING OBJECTIVES

LO1 Describe the purpose of an accounting information system.

LO2 Analyse the effect of accounting transactions on the accounting equation.

LO3 Understand how T-accounts and debits and credits are used in a dual-entry accounting system.

LO4 Explain the purpose of the journal, ledger and trial balance.

LO5 Record and post accounting transactions, prepare a trial balance, income statement, the changes in equity and balance sheet.

KEY EXHIBIT

Type of account	Normal balance	Increase with a	Decrease with a
Asset	Debit	Debit	Credit
Liability	Credit	Credit	Debit
Equity	Credit	Credit	Debit
Revenue	Credit	Credit	Debit
Expense	Debit	Debit	Credit
Dividend	Debit	Debit	Credit

Summary of debit and credit rules

DEMONSTRATION PROBLEM

The following transactions occurred during the first month of operations for Clear Windows Limited. Prepare all necessary journal entries, post the information to the ledger and prepare a trial balance at 31 March.

1 Mar.	Issued shares for $30 000 cash.
1	Purchase a used delivery van for $17 200 cash.
3	Purchased cleaning supplies for $5000 cash.
3	Paid $2400 cash on a one-year insurance policy effective 1 March.
12	Billed customers $4800 for cleaning services.
20	Paid $2300 cash for employee salaries.
21	Collected $4000 cash from customers billed on 12 March.
25	Billed customers $5200 for cleaning services.
31	For the month, paid for and used $600 of fuel.
31	Declared and paid $200 cash dividend.

DEMONSTRATION PROBLEM SOLUTION

1 Mar.	Cash	30 000	
	Contributed equity		30 000
	(Initial investment by owner)		
1 Mar.	Equipment	17 200	
	Cash		17 200
	(Purchase of delivery van)		
3 Mar.	Supplies	5 000	
	Cash		5 000
	(Purchase of supplies)		
3 Mar.	Prepaid insurance	2 400	
	Cash		2 400
	(Purchase of insurance policy)		
12 Mar.	Accounts receivable	4 800	
	Service revenue		4 800
	(Provide services on account)		
20 Mar.	Salaries expense	2 300	
	Cash		2 300
	(Pay employees)		
21 Mar.	Cash	4 000	
	Accounts receivable		4 000
	(Collect receivables from customers)		
Note: this is the exchange of one asset for another; it is not the earning of revenue. Revenue was earned on 12 March when the customer was billed			
25 Mar.	Accounts receivable	5 200	
	Service revenue		5 200
	(Provide services on account)		
31 Mar.	Fuel expense	600	
	Cash		600
	(Pay for fuel consumed)		
31 Mar.	Dividend	200	
	Cash		200
	(Declared and pay dividend)		

Cash

30 000	17 200
4 000	5 000
	2 400
	2 300
	600
	200
6 300	

Accounts receivable

4 800	4 000
5 200	
6 000	

Equipment

17 200	
17 200	

Prepaid Insurance

2 400	
2 400	

Supplies

5 000	
5 000	

Contributed Equity

	30 000
	30 000

Service Revenue

	4 800
	5 200
	10 000

Salaries Expense

2 300	
2 300	

Fuel Expense

600	
600	

Dividend

200	
200	

Clear Windows Limited
Trial balance at 31 March

Cash	$ 6 300	
Accounts receivable	6 000	
Prepaid insurance	2 400	
Supplies	5 000	
Equipment	17 200	
Contributed equity		$30 000
Service revenue		10 000
Fuel expense	600	
Salaries expense	2 300	
Dividends	200	
Totals	$40 000	$40 000

REVIEW

KEY DEFINITIONS

cash basis of accounting
Records revenues when cash is received and records expenses when cash is paid.

accrual basis of accounting
Records revenues when they are earned and records expenses when they are incurred.

adjusting journal entries
Entries made in the general journal to record revenues that have been earned but not recorded and expenses that have been incurred but not recorded.

closing process
The process of transferring all revenue, expense and dividend account balances to the Retained Earnings account.

temporary accounts
Accounts that accumulate balances only for the current period.

closing entries
Entries made in the journal and posted to the ledger that eliminate the balances in all temporary accounts and transfer those balances to the Retained Earnings account.

accounting cycle
The sequence of steps in which an accounting information system captures, processes and reports a company's accounting transactions during a period.

LEARNING OBJECTIVES

- **LO1** Explain how profit is measured and reported under the accrual and cash bases of accounting.
- **LO2** Identify the four major circumstances in which adjusting journal entries is necessary.
- **LO3** Record and post adjusting journal entries as well as prepare an adjusted trial balance and financial statements.
- **LO4** Understand the purpose of the closing process and prepare closing entries.
- **LO5** Describe the steps of the accounting cycle.

DEMONSTRATION PROBLEM

Given the following 31 March unadjusted trial balance for Company Xiang and the additional information at the end of the month, prepare all necessary adjusting journal entries and prepare an adjusted trial balance as of 31 March.

Company Xiang Unadjusted trial balance 31 March		
	Debit	**Credit**
Cash	$ 6 300	
Accounts receivable	6 000	
Equipment	17 200	
Prepaid insurance	2 400	
Supplies	5 000	
Contributed equity (ordinary shares)		$30 000
Service revenue		10 000
Fuel expense	600	
Salaries expense	2 300	
Dividends	200	
Totals	$40 000	$40 000

Additional Information:

1. Depreciation on equipment is $250 monthly.
2. One-twelfth of the insurance expired during the month.
3. A count shows $1000 of cleaning supplies on hand at 31 March.
4. Earned but unpaid employee salaries were $350 on 31 March.

DEMONSTRATION PROBLEM SOLUTION

Company Xiang Adjusting journal entries on 31 March			
1	Depreciation expense	250	
	Accumulated depreciation		250
	(To record depreciation on the equipment: $250 as given)		
2	Insurance expense	200	
	Prepaid insurance		200
	(To record expired insurance: $2 400 × 1/12)		
3	Supplies expense	4 000	
	Supplies		4 000
	(To record supplies used: $5 000 unadjusted – $1 000 counted)		
4	Salaries expense	350	
	Salaries payable		350
	(To record salaries earned but not paid: $350 as given)		

Company Xiang Adjusted trial balance 31 March		
	Debit	**Credit**
Cash	$ 6 300	
Accounts receivable	6 000	
Equipment	17 200	
Prepaid insurance	2 200	
Supplies	1 000	
Accumulated depreciation		$ 250
Salaries payable		350
Contributed equity		30 000
Service revenue		10 000
Depreciation expense	250	
Fuel expense	600	
Insurance expense	200	
Salaries expense	2 650	
Supplies expense	4 000	
Dividends	200	
Totals	$40 600	$40 600

REVIEW

KEY DEFINITIONS

internal control
The system of policies and procedures used in a company to promote efficient and effective operations, reliable financial reporting and compliance with laws and regulations.

control environment
The atmosphere in which the members of an organisation conduct their activities and carry out their responsibilities.

risk assessment
The identification and analysis of the risks that threaten the achievement of organisational objectives.

control activities
The policies and procedures established to address the risks that threaten the achievement of organisational objectives.

information and communication
Required for the open flow of relevant information throughout an organisation.

monitoring
The assessment of the quality of an organisation's internal control.

bank reconciliation
The process of reconciling the differences between the cash balance on a bank statement and the cash balance in a business' records.

deposit in transit
A deposit that has been made by the business but has not cleared the bank as of the statement date.

outstanding cheque
A cheque that has been distributed by the business but has not cleared the bank as of the statement date.

petty cash fund
An amount of cash kept on hand to pay for minor expenditures.

cash
A medium of exchange.

cash equivalent
Any investment that is readily convertible into cash.

free cash flow
The excess cash a company generates beyond what it needs to invest in productive capacity and pay dividends to shareholders.

LEARNING OBJECTIVES

- LO1 **Identify the role of internal control in a business.**
- LO2 **Describe five components of internal control.**
- LO3 **Understand two methods of internal control over cash – bank reconciliations and petty cash funds.**
- LO4 **Appreciate the reporting of cash and cash equivalents.**
- LO5 **Analyse cash through the calculation and interpretation of horizontal, vertical and ratio analyses and free cash flow.**

KEY FORMULAS

KEY FORMULA 5.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

KEY FORMULA 5.2 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Cash}}{\text{Total Assets}}$$

KEY FORMULA 5.3 FREE CASH FLOW

Cash Flows from Operating Activities
– Capital Expenditures
– Dividends
= Free Cash Flow

DEMONSTRATION PROBLEM

Bank reconciliation

At the end of January, Sarah (the company) shows a cash balance of $65 000. The 31 January bank statement shows a balance of $64 170. Sarah discovers the following:

1. deposits of $4250 and $2300 made on 30 January and 31 January, respectively, do not appear on the January bank statement
2. cheques written in late January for $620 (No. 12983), $950 (No. 12986) and $1200 (No. 12989) do not appear on the January bank statement
3. the bank showed a $200 customer cheque deposited by Sarah and returned to the bank for non-sufficient funds (NSF)
4. the bank charged a $50 service fee
5. the bank collected a $500 receivable from one of Sarah's customers
6. a cheque that Sarah wrote cleared the bank at $300 but was erroneously recorded in Sarah's books at $3000.

Prepare a bank reconciliation for Sarah.

DEMONSTRATION PROBLEM SOLUTION

Sarah's bank reconciliation at 31 January		
Balance per bank statement		$64 170
Add deposits in transit:		
30 January	$4 250	
31 January	2 300	6 550
Deduct outstanding cheques:		
No. 12983	$ 620	
No. 12986	950	
No. 12989	1 200	2 770
Actual cash balance		$67 950
Balance per company (Sarah's) records		$65 000
Add:		
Collection of receivable	$ 500	
Error by Sarah	2 700	3 200
Deduct:		
Service fee	$ 50	
NSF check	200	250
Actual cash balance		$67 950

REVIEW

KEY DEFINITIONS

account receivable
An amount owed by a customer who has purchased the company's product or service.

net realisable value
The amount of cash that a company expects to collect from its total accounts receivable.

bad debt expense
The expense resulting from the inability to collect all accounts receivable.

direct write-off method
Method in which bad debt expense is recorded when a company determines that a receivable is uncollectible and removes it from its records.

allowance method
Method in which companies use two entries to account for bad debt expense – one to estimate the expense and a second to write off receivables.

allowance for doubtful debts
The dollar amount of receivables that a company believes will ultimately be uncollectible.

percentage-of-sales approach
Method that estimates bad debt expense as a percentage of sales.

percentage-of-receivables approach
Method that estimates bad debt expense as a percentage of receivables.

ageing schedule
A listing of accounts receivable by their ages.

receivables turnover ratio
A comparison of credit sales to receivables that measures a company's ability to generate and collect receivables.

days-in-receivables
A conversion of the receivables turnover ratio that expresses a company's ability to generate and collect receivables in days.

allowance ratio
A comparison of the allowance account to receivables that measures the percentage of receivables that are expected to be uncollectible in the future.

promissory note
A written promise to pay a specific sum of money on demand or at some specific date in the future.

note receivable
An asset created when a company accepts a promissory note.

LEARNING OBJECTIVES

- **LO1** Describe the recording and reporting of receivables.
- **LO2** Compare the methods used to account for uncollectible receivables.
- **LO3** Contrast the methods for estimating bad debt expense.
- **LO4** Evaluate accounts receivable through the calculation and interpretation of horizontal, vertical and ratio analyses.
- **LO5** Understand the accounting for notes receivable.

KEY FORMULAS

KEY FORMULA 6.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

KEY FORMULA 6.2 VERTICAL ANALYSIS

$$\text{Percentage} = \text{For the balance sheet} = \frac{\text{Account Balance}}{\text{Total Assets}}$$

$$\text{For the income statement} = \frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$$

KEY FORMULA 6.3 RECEIVABLES TURNOVER RATIO

$$\text{Receivables Turnover Ratio} = \frac{\text{Credit Sales}}{\text{Average Receivables}}$$

Where average receivables is:

Beginning Receivables + Ending Receivables/2

KEY FORMULA 6.4 DAYS-IN-RECEIVABLES

$$\text{Days-in-Receivables Ratio} = \frac{365}{\text{Receivables Turnover Ratio}}$$

KEY FORMULA 6.5 ALLOWANCE RATIO

$$\text{Allowance Ratio} = \frac{\text{Average for Doubtful Debts}}{\text{Gross Receivables}}$$

Where gross accounts receivable is:

Net Account Receivables + Allowance for Doubtful Debts

KEY FORMULA 6.6 INTEREST EARNED

$$\text{Interest Earned} = \text{Principal} \times \text{Annual Rate of Interest} \times \text{Time Outstanding}$$

DEMONSTRATION PROBLEM

Bad debt estimation and write-off

Chen Ball Allocators (CBA) provides the following partial balance sheet and income statement information for the financial year ended 30 June 2020. Assume that Chen Ball uses the allowance method for recording bad debts.

Gross accounts receivable at 30/06/2020	$11 760
Allowance for bad debts at 30/06/2020	Credit balance $138
Net sales for year ended 30/06/2020	$75 200
Receivables written off during year ended 30/06/2020	900

Required

1. Prepare the journal entry that CBA made during the year to write off the $900 in receivables.
2. Prepare the journal entry to record bad debt expense for the financial year if CBA estimates that 2 per cent of net sales will be uncollectible. Calculate the resulting net realisable value of receivables.
3. Prepare the journal entry to record bad debt expense for the financial year if CBA estimates that 5 per cent of receivables will be uncollectible. Calculate the resulting net realisable value of receivables.
4. Assume that instead of the allowance method, CBA uses the direct write-off method. What would CBA recognise as bad debt expense for the financial year ended 30 June 2020?

DEMONSTRATION PROBLEM SOLUTION

1	Accounts receivable	900	
	Allowance for bad debts		900
2	Bad debt expense ($75 200 × 2%)	1 504	
	Allowance for bad debts		1 504
	Net realisable value:		
	Gross accounts receivable		$11 760
	Less: Allowance ($138 + $1 504)		1 642
	Net realisable value		$10 118
3	Bad Debt Expense [($11 760 x 5%) – $138]	450	
	Allowance for bad debts		450
	Net realisable value:		
	Gross accounts receivable		$11 760
	Less: Allowance		450
	Net realisable value		$11 310
4	The $900 that was written off during the year as the direct write-off method only recognises as an expense the receivables written off (as with tax deductibility).		

REVIEW

KEY DEFINITIONS

inventory
A tangible resource that is held for resale in the normal course of operations.

perpetual inventory system
Updates the inventory account each time inventory is bought or sold.

periodic (physical) inventory system
Updates the inventory account only at the end of an accounting period.

purchases
An account used to accumulate the cost of all purchases.

transportation-in
An account that accumulates the transportation costs of obtaining the inventory.

purchase returns and allowances
An account that accumulates the cost of all inventory returned to vendors as well as the cost reductions from vendor allowances.

specific identification method
Determines cost of sales based on the actual cost of each inventory item sold.

first-in, first-out (FIFO) method
Calculates cost of sales based on the assumption that the first unit of inventory available for sale is the first unit sold.

last-in, first-out (LIFO) method
Calculates cost of sales based on the assumption that the last unit of inventory available for sale is the first unit sold.

moving average method
Calculates cost of sales based on the average unit cost of all inventory available for sale.

retail method
A method of estimating the cost of inventory knowing the selling price and reducing it by the gross profit percentage.

lower-of-cost-and-net-realisable-value (LCNRV) rule
Requires inventory to be reported on the balance sheet at its market value if the market value is lower than the inventory's cost.

inventory turnover ratio
Compares cost of sales during a period to the average inventory balance during that period and measures the ability to sell inventory.

days-in-inventory ratio
Converts the inventory turnover ratio into a measure of days by dividing the turnover ratio into 365 days.

net purchases
The value of inventory purchased and transportation-in less purchase returns and allowances and purchase discounts.

Purchase Returns and Allowances account
An account that accumulates the cost of all inventory returned to vendors as well as the cost reductions from vendor allowances.

Purchase Discounts account
An account that accumulates the cost reductions generated from vendor discounts granted for prompt payments.

LEARNING OBJECTIVES

- **LO1** Describe inventory and how it is recorded, expensed and reported.
- **LO2** Calculate the cost of sales using different inventory costing methods.
- **LO3** Understand the profit and loss effects of inventory cost flow assumptions.
- **LO4** Demonstrate how inventory can be estimated.
- **LO5** Apply the lower-of-cost-and-net-realisable-value rule to inventory.
- **LO6** Evaluate inventory through the calculation of horizontal, vertical and ratio analyses.
- **LO7** Appendix: record purchases and calculate the cost of sales under a periodic system.

KEY FORMULAS

KEY FORMULA 7.1 AVERAGE UNIT COST

$$\text{Average Unit Cost} = \frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}}$$

KEY FORMULA 7.2 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar change}}{\text{Prior-year balance}}$$

KEY FORMULA 7.3 VERTICAL ANALYSIS

	For the balance sheet		For the income statement
Percentage =	$\frac{\text{Account Balance}}{\text{Total Assets}}$	or	$\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

KEY FORMULA 7.4 INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Where average inventory is:

$$\frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2}$$

KEY FORMULA 7.5 WEIGHTED AVERAGE UNIT COST

$$\text{Weighted Average Unit Cost} = \frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}}$$

DEMONSTRATION PROBLEM

B'Elanna began with 32 widgets that had cost $55 each, she then purchases another 45 widgets at $60 each, she then sells 50 widgets. Calculate Cost of Sales using FIFO, LIFO and Moving (Weighted) Average.

FIFO (assumes we sell the oldest first, the $55 widgets, and then the next oldest, the $60 widgets)

Transaction	Inventory purchased			Inventory sold			Inventory on hand		
Beginning Inventory							32	$55	$1 760
Purchase	45	$60	$2 700				32	$55	$1 760
							45	$60	2 700
							77		$4 460
Sell 50 units				32	$55	$1 760	27	$60	$1 620
				18	$60	1 080			
				50		**$2 840**			

LIFO (assumes we sell the newest first, the $60 widgets, and then the next newest, the $55 widgets)

Transaction	Inventory purchased			Inventory sold			Inventory on hand		
Beginning Inventory							32	$55	$1 760
Purchase	45	$60	$2 700				32	$55	$1 760
							45	$60	2 700
							77		$4 460
Sell 50 units				5	$55	$ 275	27	$55	$1 485
				45	$60	2 700			
				50		**$2 975**			

Moving average (assumes we sell the average $57.92 widgets $4460 / 77 = $57.92 note it is not a simple average of $55 + $60 = $115 / 2 = $57.50, because there is more $60 widgets)

Transaction	Inventory purchased			Inventory sold			Inventory on hand		
Beginning Inventory							32	$55.00	$1 760
Purchase	45	$60	$2 700				32	$55.00	$1 760
							45	$60.00	2 700
							77		$4 460
Sell 50 units				50	$57.92	**$2 896**	27	$57.92	$1 564

REVIEW

KEY DEFINITIONS

depreciation
The process of systematically and rationally allocating the cost of a non-current asset over its useful life.

depreciation expense
The portion of a non-current asset's cost that is recognised as an expense in the current period.

accumulated depreciation
The cumulative amount of depreciation expense recognised to date on a non-current asset.

carrying amount
The unexpired cost of a non-current asset, calculated by subtracting accumulated depreciation from the cost of the non-current asset.

cost
The historical cost of a non-current asset being depreciated.

residual value
An estimate of the value of a non-current asset at the end of its useful life.

depreciable amount
The difference between an asset's cost and its residual value.

useful life
The length of time a non-current asset is expected to be used in operations.

depreciation method
The method used to calculate depreciation expense, such as the straight-line, reducing-balance and units-of-activity methods.

straight-line method
A depreciation method that results in the same amount of depreciation expense each year of the asset's useful life.

reducing-balance method
A depreciation method that accelerates depreciation expense into the early years of an asset's life.

units-of-activity method
A depreciation method in which depreciation expense is a function of the actual usage of the asset.

cost model
After recognition as an asset, an item of plant, property and equipment shall be carried at its cost less any accumulated depreciation and any impairment loss.

revaluation model
If fair value can be measured reliably the asset shall be carried at a revaluation amount.

non-current asset turnover ratio
A comparison of total revenues to the average net carrying amount of non-current assets that measures the productivity of non-current assets.

average useful life of non-current assets
A comparison of the cost of non-current assets to depreciation expense that estimates the number of years, on average, that a company expects to use its non-current assets.

average age of non-current assets
A comparison of accumulated depreciation to depreciation expense that estimates the number of years, on average, that the company has used its non-current assets.

intangible asset
A resource that is used in operations for more than one year but that has no physical substance.

patent
The right to manufacture, sell or use a particular product or process exclusively for a limited period of time.

trademark (trade name)
The right to use exclusively a name, symbol or phrase to identify a company.

copyright
The right to reproduce or sell an artistic or published work or software computer code.

franchise
The right to operate a business under the trade name of the franchisor.

goodwill
An intangible asset equal to the excess that one company pays to acquire the net assets of another company.

amortisation
The process of spreading out the cost of an intangible asset over its useful life.

LEARNING OBJECTIVES

LO1 Describe non-current assets and how they are recorded, expensed and reported.

LO2 Calculate and compare depreciation expense using straight-line, reducing-balance (diminishing value) and units-of-activity methods.

LO3 Understand the effects of adjustments that may be made during a non-current asset's useful life.

LO4 Record the disposal of non-current assets.

LO5 Evaluate non-current assets through the calculation and interpretation of horizontal, vertical and ratio analyses.

LO6 Depict the cash flow effect of acquiring and disposing of non-current assets.

LO7 Describe intangible assets and how they are recorded, expensed and reported.

KEY FORMULAS

KEY FORMULA 8.1 STRAIGHT-LINE METHOD

$$\text{Depreciation Expense} = \frac{\text{Cost} - \text{Salvage Value}}{\text{Useful Life}}$$

KEY FORMULA 8.2 REDUCING-BALANCE METHOD

$$\text{Depreciation} = \text{Depreciation Rate} \times \text{Carrying Amount}$$
$$= (\text{Straight-Line Rate} \times 1.5) \times (\text{Cost} - \text{Accumulated Depreciation})$$

KEY FORMULA 8.3 UNITS-OF-ACTIVITY METHOD

$$\text{Depreciation Expense per Unit} = \frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life in Units}}$$

$$\text{Depreciation Expense} = \text{Depreciation Expense per Unit} \times \text{Actual Units of Activity}$$

KEY FORMULA 8.4 DISPOSALS

Gain on Disposal = Proceeds from Sale > Carrying Amount

Loss on Disposal = Proceeds from Sale < Carrying Amount

KEY FORMULA 8.5 NON-CURRENT ASSET TURNOVER RATIO

$$\text{Non-current Asset Turnover Ratio} = \frac{\text{Total Revenues}}{\text{Average Net Carrying Amount of Non-current Assets}}$$

Where average net book value is:

$$\frac{\text{Beginning Net Carrying Amount} + \text{Ending Net Carrying Amount}}{2}$$

KEY FORMULA 8.6 AVERAGE USEFUL LIFE RATIO

$$\text{Average Useful Life} = \frac{\text{Cost of Non-Current Assets}}{\text{Depreciation Expense}}$$

KEY FORMULA 8.7 AVERAGE AGE RATIO

$$\text{Average Age} = \frac{\text{Accumulated Depreciation}}{\text{Depreciation Expense}}$$

DEMONSTRATION PROBLEM

Matthew Robin Limited (MRL) purchases a new machine for $113 250. The machine has a useful life of 10 years and a residual value of $8250. MRL estimates that the machine will be used for 17 500 hours.

1. Calculate the machine's annual depreciation expense using the straight-line method.
2. Calculate depreciation expense for the first three years of the asset's life using the reducing-balance method at 1.5 times the straight-line rate (round to the nearest dollar).
3. Assuming that the machine is used for 3000 hours one year, calculate depreciation expense for that year using the units-of-activity method.
4. Suppose that after five years of straight-line depreciation, MRL increases the machine's useful life an additional two years. Calculate depreciation expense for year six.
5. Suppose instead that after six years of straight-line depreciation, MRL sells the machine for $48 900. Calculate the gain or loss on the sale.

DEMONSTRATION PROBLEM SOLUTION

1. ($113 250 – $8250) / 10 = $10 500 depreciation expense per year.
2. Reducing rate = (100% ÷ 10) × 1.5 = 15% Year 1: 15% × $113 250 = $16 988 depreciation expense Year 2: 15% × ($113 250 – $16 988) = $14 439 depreciation expense Year 3: 15% × ($113 250 – $16 988 – $14 439) = $12 273 depreciation expense.
3. ($113 250 – $8250) / 17 500 = $6 depreciation expense per hour 3000 hours × 6 = $18 000 depreciation expense
4.

Cost of the asset	$113 250
Less: Accumulated depreciation for five years ($10 500 × 5)	52 500
Carrying value at time of revision	$60 750
Less: Residual value	8250
Remaining depreciable cost	$52 500
Divided by remaining useful life (5 years + 2 more years)	÷7
Depreciation expense for year 6	$ 7500

5.

Cost of the asset	$113 250
Less: Accumulated depreciation for six years ($10 500 × 6)	63 000
Carrying value at time of revision	$50 250
Sales price	48 000
Loss on sale	$ 2250

REVIEW

KEY DEFINITIONS

gross pay
The total pay before any deduction; in the simplest form it is hours worked times the agreed hourly rate.

net pay
Gross pay less deductions such as tax.

required deductions
The amount(s) the employer is legally obliged to take out, such as tax, before depositing the net pay in the employee's bank account.

optional deductions
The amounts the employee asks the employer to take out, such as extra superannuation, before depositing the net pay in the employee's bank account.

note payable
A liability generated by the issue of a promissory note to borrow money.

current portion of non-current debt
The portion of a non-current liability that will be paid within one year.

bond
A financial instrument in which a borrower promises to pay future interest and principal to a creditor in exchange for the creditor's cash today.

face value
The amount that is repaid at maturity of a bond.

stated interest rate
The contractual rate at which interest is paid to the creditor.

maturity date
The date on which the face value must be repaid to the creditor.

market (or effective) rate of interest
The rate of return that investors in the bond markets demand for bonds of similar risk.

straight-line method of amortisation
Method that amortises an equal amount of the discount or premium each time interest is paid.

amortisation schedule
A schedule that illustrates the amortisation of a bond discount or premium over the life of a bond.

lease
A contractual agreement in which the lessee obtains the right to use an asset by making periodic payments to the lessor.

off-balance-sheet financing
Occurs when a company's future obligations regarding an asset are not reported as a liability on the balance sheet.

finance lease
A contract in which the lessee obtains enough rights to use and control an asset such that the lessee is in substance the owner of the asset.

contingent liability
An obligation that arises from an existing condition whose outcome is uncertain and whose resolution depends on a future event.

liquidity
A company's ability to pay its current liabilities in the near future.

current ratio
Compares a company's current assets to its current liabilities and measures its ability to pay current liabilities.

solvency
A company's ability to continue in business in the long term by satisfying its liabilities.

debt to assets ratio
Compares a company's total liabilities to its total assets and measures its ability to pay its liabilities in the long term.

capital structure
The mix of debt and equity that a company uses to generate its assets.

effective interest method of amortisation
Method that amortises the bond discount or premium so that interest expense each period is a constant percentage of the bond's carrying amount.

LEARNING OBJECTIVES

- **LO1** Describe the recording and reporting of current liabilities.
- **LO2** Describe the reporting of non-current liabilities and the cash flows associated with those liabilities.
- **LO3** Understand the nature of bonds (debentures) and record a bond's issue, interest payments and maturity.
- **LO4** Account for a bond that is redeemed prior to maturity.
- **LO5** Recognise other liabilities such as leases and contingent liabilities.
- **LO6** Evaluate liabilities through the calculation and interpretation of horizontal, vertical and ratio analyses.
- **LO7** Appendix: determine a bond's issue price.
- **LO8** Appendix: record bond interest payments under the effective interest method.

KEY FORMULAS

KEY FORMULA 9.1 INTEREST PAYABLE ON BONDS PAYABLE

$$\text{Interest Paid} = \text{Face Value} \times \text{Stated Interest Rate} \times \text{Time Outstanding}$$
$$= \$200\,000 \times 0.07 \times 12/12 \text{ months}$$
$$= \$14\,000$$

KEY FORMULA 9.2 STRAIGHT-LINE METHOD OF AMORTISATION

$$\text{Discount Amortised} = \frac{\text{Discount at Issuance}}{\text{Number of Interest Payments}}$$

KEY FORMULA 9.3 BOND DISCOUNT OR PREMIUM AMORTISED EACH PAYMENT (STRAIGHT-LINE METHOD)

$$\text{Premium amortised} = \frac{\text{Premium at Issuance}}{\text{Number of Interest Payments}}$$

KEY FORMULA 9.4 GAIN OR LOSS ON REDEMPTION

Gain on Redemption = Carrying Amount > Call Price

Loss on Redemption = Call Price > Carrying Amount

KEY FORMULA 9.5 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current Year Balance} - \text{Prior Year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior Year Balance}}$$

KEY FORMULA 9.6 VERTICAL ANALYSIS

$$\text{Percentage} = \underbrace{\frac{\text{Account Balance}}{\text{Total Assets}}}_{\text{Balance sheet}} \text{ or } \underbrace{\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}}_{\text{Income Statement}}$$

KEY FORMULA 9.7 CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

KEY FORMULA 9.8 DEBT TO ASSETS RATIO

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

KEY FORMULA 9.9 INTEREST EXPENSE (EFFECTIVE INTEREST METHOD)

$$\text{Interest Expense} = \text{Carrying Amount} \times \text{Market Rate of Interest at Issue} \times \text{Time Outstanding}$$

KEY FORMULA 9.10 DISCOUNT OR PREMIUM AMORTISED EACH PAYMENT (EFFECTIVE INTEREST METHOD)

$$\text{Discount Amount Amortised} = \text{Interest Expense} - \text{Interest Paid}$$

$$\text{Premium Amount Amortised} = \text{Interest Paid} - \text{Interest Expense}$$

REVIEW

KEY DEFINITIONS

capital account for each partner
Records the current market value of net assets contributed.

bonus to the new partner
When a new partner pays less than the capital received.

bonus to the existing (old) partners
When a new partner pays more than the capital received.

bonus to the withdrawing partner
When the departing partner takes more than their capital balance.

bonus to the remaining partners
When the withdrawing partner takes less than their capital balance.

liquidation of a partnership
The closing down of a business that involves partners taking any remaining assets.

capital deficiency
A partner's capital account with a negative (debit) balance.

LEARNING OBJECTIVES

- LO1 **Describe the characteristics of the partnership form of business.**
- LO2 **Account for a partner commencing a partnership.**
- LO3 **Calculate the allocation of profits and losses to the partners.**
- LO4 **Record the admission and withdrawal of partners.**
- LO5 **Explain the liquidation of a partnership.**
- LO6 **Prepare the financial statements for a partnership.**

DEMONSTRATION PROBLEM

The following transactions occurred; all figures are in trillions of dollars:

- **January:** Julius and Cleopatra decided to form a partnership. Julius contributed an Empire worth $810 and debts of $330. Cleopatra contributed intangible assets that were said to be priceless, but the accountants valued the goodwill at $720.
- **February:** They decided to admit Mark to the partnership. Mark contributed $900 of ships for a 2/7 share in the partnership.
- **March:** The new partnership has agreed to share profits; the first $300 according to the service each contributes (Cleo $150, Julius $60 and Mark $90), the next $270 to be shared equally and any remaining profit or loss according to their capital balances before any allocation of profit. The partnership earned a profit of $360.
- **April:** The partners withdraw their share of the profits in cash.
- **May:** Julius decides to leave the partnership taking 80 per cent of the Empire and $300 of ships. But before he withdraws the Empire is revalued from $810 to $1125.
- **June:** The Empire is now crumbling, Cleopatra and Mark decide to liquidate the partnership, the remaining ships are sold to the Athenians for $30 in gold. Odoacer purchased the remainder of the Empire for $15 of gold, the goodwill is sold to Tourism Egypt for a handful of gold ($300 and the original debts were repaid in gold. The remaining gold was distributed to the partners to take to their afterlife.

DEMONSTRATION PROBLEM SOLUTION

Jan.	Empire	810	
	Goodwill	720	
	Debts		330
	Capital Cleopatra		720
	Capital Julius		480
Feb.	Original net assets 720 + 480 = $1200 plus the new assets $900 = $2140. 2/7 = Mark's Capital = $600, bonus of $300 shared 2/5 to Julius 3/5 to Cleo (120:180).		
	Ships	900	
	Capital Mark		600
	Capital Cleopatra		180
	Capital Julius		120

March:	Partners sharing profits			
	Cleo	Julius	Mark	Total
Total profit				360
First $300 on service as agreed	150	60	90	(300)
Next $270 equally	90	90	90	(270)
Balance remaining				(210)
Loss to be shared according to the capital account balances 300:200:200 (3:2:2)	(90)	(60)	(60)	210
Balance remaining				0
Profits allocated to partners	$150	$90	$120	$120

March	Retained earnings	360	
	Capital Cleopatra		150
	Capital Julius		90
	Capital Mark		120
Apr.	Capital Cleopatra	150	
	Capital Julius	90	
	Capital Mark	120	
	Cash		360
May.	Remembering profits are shared according to capital balances, 3:2:2 which is $135:$90:$90		
	Empire	315	
	Capital Cleopatra		135
	Capital Julius		90
	Capital Mark		90

Now, 80 per cent of the Empire is $1125 x 0.8 = $900, plus Julius takes $300 ships giving total assets withdrawn of $1200 but Julius has a capital balance of $600 plus the share of revaluation of $90 = $690. So the bonus to the departing partner is $510 ($1200 – $690) which will be shared between the remaining partners according to the sharing ratio before Julius decided to leave, which was 3:2 Cleopatra:Mark ($510 x 3/5 = $306, $510 x 2/5 = $204).

Capital Julius	690	
Capital Cleopatra	306	
Capital Mark	204	
Empire		900
Ships		300

REVIEW

KEY DEFINITIONS

issued capital (contributed equity)
The amount of capital raised by issuing shares to investors in exchange for an ownership claim on company assets. It is also known as paid-up capital or share capital.

ordinary shares
The most common type of share capital.

issued shares
The number of shares a company has distributed to owners to date.

application
Both the request to buy shares and the money payable when shares are applied for.

allotment or issue
The process of giving shares to (some of) those who have applied for them and also the money required at this stage from shareholders.

call
The request for further payment(s) and the money with those further payment(s).

prospectus
The legal document offering shares for sale and providing details of the company, past financial performance and future prospects.

oversubscription
When more shares are applied for than are available to be issued.

forfeit
When a shareholder does not pay the allotment and/or call they lose the shares they have paid some of the money to buy.

reissue
When forfeited shares are again sold, often at a discount to the original issue price.

date of record
The date that determines who receives the dividend – the shares' owner on the date of record receives the dividend.

cash dividend
A distribution of cash to shareholders.

declaration date
The date on which a company's board of directors declares a dividend.

payment date
The date on which a dividend will be distributed.

share dividend
A distribution of a company's ordinary shares to existing shareholders.

share split
An increase in the number of a company's issued shares according to some specified ratio.

preference shares
A form of shares that receives one or more priorities over ordinary shares.

cumulative preference shares
Shares that carry the right to receive current-year dividends and all unpaid dividends from prior years before dividends are paid to ordinary shareholders.

dividends in arrears
The accumulated value of unpaid prior-year dividends.

non-cumulative preference shares
Shares that carry the right to receive current-year dividends only.

earnings per share (EPS)
A comparison of a company's total comprehensive income to the number of ordinary shares issued that measures the ability to generate wealth through profitable operations.

return on equity
A comparison of a company's net income to average shareholders' equity that measures the ability to use existing equity to generate additional equity.

dividend payout ratio
A comparison of a company's dividends to its earnings that measures the percentage of current earnings distributed to owners.

dividend yield ratio
A comparison of dividends per share to the market price per share that measures the percentage return from dividends.

LEARNING OBJECTIVES

- **LO1** Describe the characteristics of the corporate form of business.
- **LO2** Discuss equity and show how it is recorded and reported.
- **LO3** Understand cash dividends, share dividends and share splits.
- **LO4** Investigate preference shares and how they receive preference in dividends and other ways.
- **LO5** Examine share buybacks and how they are recorded and reported.
- **LO6** Evaluate equity through the calculation and interpretation of horizontal, vertical and ratio analyses.

KEY FORMULAS

KEY FORMULA 11.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

KEY FORMULA 11.2 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}} \text{ (For the balance sheet)} \quad \text{or} \quad \frac{\text{Account Balance}}{\text{Net Sales or Revenue}} \text{ (For the income statement)}$$

KEY FORMULA 11.3 EARNINGS PER SHARE

$$\text{Earnings per Share} = \frac{\text{Total Comprehensive Income}}{\text{Average Number of Ordinary Shares Issued}}$$

KEY FORMULA 11.4 AVERAGE ORDINARY SHARES OUTSTANDING

$$\frac{\text{Beginning Shares Outstanding} + \text{Ending Shares Issued}}{2}$$

KEY FORMULA 11.5 RETURN ON EQUITY

$$\text{Return on equity} = \frac{\text{Total Comprehensive Income}}{\text{Average Shareholders' Equity}}$$

KEY FORMULA 11.6 AVERAGE EQUITY

$$\text{Average Equity} = \frac{\text{Beginning Equity} + \text{Ending Equity}}{2}$$

KEY FORMULA 11.7 DIVIDEND PAYOUT RATIO

$$\text{Dividend Payout Ratio} = \frac{\text{Dividends}}{\text{Total Comprehensive Income}} \text{ or } \frac{\text{Dividend per Share}}{\text{Earnings per Share}}$$

KEY FORMULA 11.8 DIVIDEND YIELD

$$\text{Dividend yield} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}}$$

REVIEW

KEY DEFINITIONS

statement of cash flows
A financial statement that summarises a company's inflows and outflows of cash over a period of time with a purpose to inform users on how and why a company's cash changed during the period.

cash flows provided (used) by operating activities
Cash inflows and outflows arising from the company's operations; sometimes called operating cash flows.

cash flows provided (used) by investing activities
Cash inflows and outflows arising from the acquisition and disposal of non-current assets; often called investing cash flows.

cash flows provided (used) by financing activities
Cash inflows and outflows associated with the generation and return of capital; often called financing cash flows.

direct method
Method of reporting cash flows from operating activities in which cash inflows and outflows from operations are reported separately on the statement of cash flows.

indirect method
Method of reporting cash flows from operating activities in which net income is adjusted from an accrual basis to a cash basis.

cash flow adequacy ratio
Compares free cash flow to the average amount of debt maturing in the next five years and measures the ability to pay maturing debt.

LEARNING OBJECTIVES

- **LO1** Describe the purpose and format of the statement of cash flows.
- **LO2** Understand the process of preparing the statement of cash flows.
- **LO3** Prepare the operating activities section of the statement of cash flows using the direct method.
- **LO4** Prepare the operating activities section of the statement of cash flows using the indirect method.
- **LO5** Outline the investing activities section of the statement of cash flows.
- **LO6** Summarise the financing activities section of the statement of cash flows.
- **LO7** Evaluate the statement of cash flows through the calculation and interpretation of ratio analyses.

KEY FORMULA

KEY FORMULA 12.1 CASH FLOW ADEQUACY RATIO

$$\text{Cash Flow Adequacy Ratio} = \frac{\text{Free Cash Flow}}{\text{Average Amount of Debt Maturing in Five Years}}$$

DEMONSTRATION PROBLEM

A company provides the following comparative balance sheets and income statement. Prepare the company's statement of cash flows for the year using the direct method for operating cash flows. In a supplemental schedule, show operating cash flows under the indirect method. Assume that the change in equipment was caused by a purchase of equipment for cash.

Income statement for the year ended 30 June 2021		Balance sheet as at 30 June		
			2021	2020
Service revenue	$ 40 000	Cash and cash equivalents	$ 3 000	$ 4 000
Depreciation expense	(20 000)	Accounts receivable	7 000	8 000
Salaries expense	(13 000)	Equipment	100 000	73 000
Profits before taxes	$ 7 000	Accumulated depreciation	(55 000)	(35 000)
Income tax expense	2 000		$ 55 000	$ 50 000
Profits after tax	$ 5 000	Salaries payable	$ 5 000	$ 1 000
		Ordinary shares	24 000	24 000
		Retained earnings	26 000	25 000
		Total liabilities and shareholders' equity	$ 55 000	$ 50 000

DEMONSTRATION PROBLEM SOLUTION

Cash received from customers:

Service Revenue + Decrease in Accounts Receivable
= $40 000 + $1000 = $41 000

Cash paid to employees:

Salaries Expense – Increase in Salaries Payable
= $13 000 – $4000 = $9000

Cash paid for income tax:

Income Tax Expense +/– Changes in Income Tax Payable
= $2000 + $0 = $2000

Cash paid for equipment:

Change in Equipment Balance is Attributable to Equipment
Bought for Cash = $27 000

Cash paid for dividends:

Retained Earnings + Profits After Tax – Dividends = Ending Retained Earnings
$25 000 + $5000 – ?? = $26 000 ?? = $4000

Statement of cash flows for the year ended 30 June 2021		
Cash flows from operating activities		
Cash receipts from customers		$ 41 000
Less cash payments:		
to employees	$ (9 000)	
for taxes	(2 000)	(11 000)
Net cash provided by operating activities		$ 30 000
Cash flows from investing activities		
Cash paid for equipment	$ (27 000)	
Net cash used in investing activities		(27 000)
Cash flows from financing activities		
Cash paid for dividends	$ (4 000)	
Net cash used in financing activities		(4 000)
Net decrease in cash and cash equivalents		$ (1 000)
Cash, beginning of year		4 000
Cash, end of year		$ 3 000
Reconciliation of profits after tax to net cash flow from operations		
Profits after tax		$ 5 000
Adjustments to reconcile net income to cash provided by operating activities:		
Depreciation expense	$ 20 000	
Decrease in accounts receivable	1 000	
Increase to salaries payable	4 000	25 000
Net cash from operating activities		$ 30 000

REVIEW

KEY DEFINITIONS

financial statement analysis
The process of applying analytical tools to a company's financial statements to understand the business' financial health.

profit margin ratio
Compares comprehensive income to net sales and measures the ability to generate profits from sales.

return on equity ratio
Compares comprehensive income to average shareholders' equity and measures the ability to generate profits from equity.

return on assets ratio
Compares comprehensive income to average total assets and measures the ability to generate profits from assets.

price to earnings (P/E) ratio
Compares comprehensive income to a company's share price and provides an indication of investor perceptions of the company.

quick ratio
Compares cash and near-cash assets to current liabilities and measures the ability to pay current liabilities immediately.

financial leverage
The degree to which a company obtains capital through debt rather than equity in an attempt to increase returns to stockholders.

debt to equity ratio
Compares total liabilities to total equity and measures a company's capital structure and financial leverage.

times interest earned ratio
Compares income to interest expense and measures the ability to pay interest out of current earnings.

DuPont analysis
Decomposes a company's return on equity into measures of operating efficiency, asset effectiveness and capital structure.

LEARNING OBJECTIVES

- LO1 **Understand the nature of financial statement analysis.**
- LO2 **Calculate and interpret horizontal and vertical analyses.**
- LO3 **Assess profitability through the calculation and interpretation of ratios.**
- LO4 **Assess liquidity through the calculation and interpretation of ratios.**
- LO5 **Assess solvency through the calculation and interpretation of ratios.**
- LO6 **Calculate and interpret a DuPont analysis.**

KEY FORMULAS

KEY FORMULA 13.1 HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \text{Current-year Balance} - \text{Prior-year Balance}$$

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior-year Balance}}$$

KEY FORMULA 13.2 VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}} \text{ (For the balance sheet) or } \frac{\text{Account Balance}}{\text{Net Sales or Revenue}} \text{ (For the income statement)}$$

KEY FORMULA 13.3 PROFITABILITY RATIOS: PROFIT MARGIN

$$\text{Profit Margin} = \frac{\text{Total Comprehensive Income}}{\text{Revenue}}$$

KEY FORMULA 13.4 PROFITABILITY RATIOS: RETURN ON EQUITY

$$\text{Return on Equity} = \frac{\text{Total Comprehensive Income}}{\text{Average Shareholders' Equity}}$$

Where average shareholders' equity is as follows:

$$\frac{(\text{Beginning equity} + \text{Ending equity})}{2}$$

KEY FORMULA 13.5 PROFITABILITY RATIOS: RETURN ON ASSETS

$$\text{Return on Assets} = \frac{\text{Total Comprehensive Income}}{\text{Average Total Assets}}$$

Where average total assets is as follows:

$$\frac{(\text{Beginning Total Assets} + \text{Ending Total Assets})}{2}$$

KEY FORMULA 13.6 PROFITABILITY RATIOS: EARNINGS PER SHARE

$$\text{Earnings per Share} = \frac{\text{Total Comprehensive Income}}{\text{Average Number of Ordinary Shares}}$$

Where the average number of ordinary shares is as follows:

$$\frac{(\text{Beginning Balance of Ordinary Shares} + \text{Ending Balance of Ordinary Shares})}{2}$$

KEY FORMULA 13.7 PROFITABILITY RATIOS: PRICE EARNINGS RATIO

$$\text{Price to Earnings Ratio} = \frac{\text{Current Share Price}}{\text{Earnings per Share}}$$

KEY FORMULA 13.8 LIQUIDITY RATIOS: CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

KEY FORMULA 13.9 LIQUIDITY RATIOS: QUICK RATIO

$$\text{Quick Ratio} = \frac{\text{Cash} + \text{Short-term Investments} + \text{Accounts Receivable}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio Simple Calculation} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

KEY FORMULA 13.10 LIQUIDITY RATIOS: RECEIVABLES TURNOVER RATIO

$$\text{Receivables Turnover Ratio} = \frac{\text{Net Sales}}{\text{Average Accounts Receivable}}$$

Where average accounts receivable is:

$$\frac{(\text{Opening Balance of Accounts Receivable} + \text{Closing Balance of Accounts Receivable})}{2}$$

KEY FORMULA 13.11 LIQUIDITY RATIOS: INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Where average inventory is as follows:

$$\frac{\text{Beginning inventory} + \text{Ending inventory}}{2}$$

KEY FORMULA 13.12 SOLVENCY RATIOS: DEBT TO ASSETS RATIO

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

KEY FORMULA 13.13 SOLVENCY RATIOS: DEBT TO EQUITY RATIO

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

KEY FORMULA 13.14 SOLVENCY RATIOS: TIMES INTEREST EARNED RATIO

$$\text{Times Interest Earned Ratio} = \frac{\text{Total Comprehensive Income} + \text{Interest Expense} + \text{Income Tax Expense}}{\text{Interest Expense}}$$

KEY FORMULA 13.15 DUPONT ANALYSIS

Operating Efficiency		Asset Effectiveness		Capital Structure		Return on Equity
$\frac{\text{Total Comprehensive Income}}{\text{Sales}}$	×	$\frac{\text{Sales}}{\text{Assets}}$	×	$\frac{\text{Assets}}{\text{Equity}}$	=	$\frac{\text{Total Comprehensive Income}}{\text{Equity}}$

DEMONSTRATION PROBLEM

The following information was taken from past financial statements of the Ma Company:

	Current year	Prior year
Current assets	$ 10 950	$ 11 391
Quick assets	5 856	6 942
Total assets	29 856	29 589
Current liabilities	10 975	10 464
Total liabilities	23 193	22 809
Total shareholders' equity	6 672	6 780
Net sales	27 756	
Cost of sales	11 124	
Income before interest and taxes	6 084	
Interest expense	162	
Net income	4 155	
Other information:		
Ordinary shares issued	3 021	3 132
Share price at year end	$ 93.19	
Calculate all profitability, liquidity, and solvency ratios for the current year.		

DEMONSTRATION PROBLEM SOLUTION

Profitability ratios:

Profit margin	$4 155 / $27 756	15.0%
Return on equity	$4 155 / [($6 672 + $6 780) / 2]	61.8%
Return on assets	$4 155 / [($29 865 + $29 589) / 2]	14.0%
Earnings per share	$4 155 / [(3 021 + 3 132) / 2]	$1.35
Price to earnings	$93.19/ $1.35*	69
* EPS is taken from the above calculation		

Liquidity ratios:

Current ratio	$10 950 / $10 975	1.00
Quick ratio	$5 856 / $10 975	0.53

Solvency ratios:

Debt to assets	$23 193 / $29 856	0.78
Debt to equity	$23 193 / $6 672	3.48
Time interest earned	$6 084 / $162	37.56

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