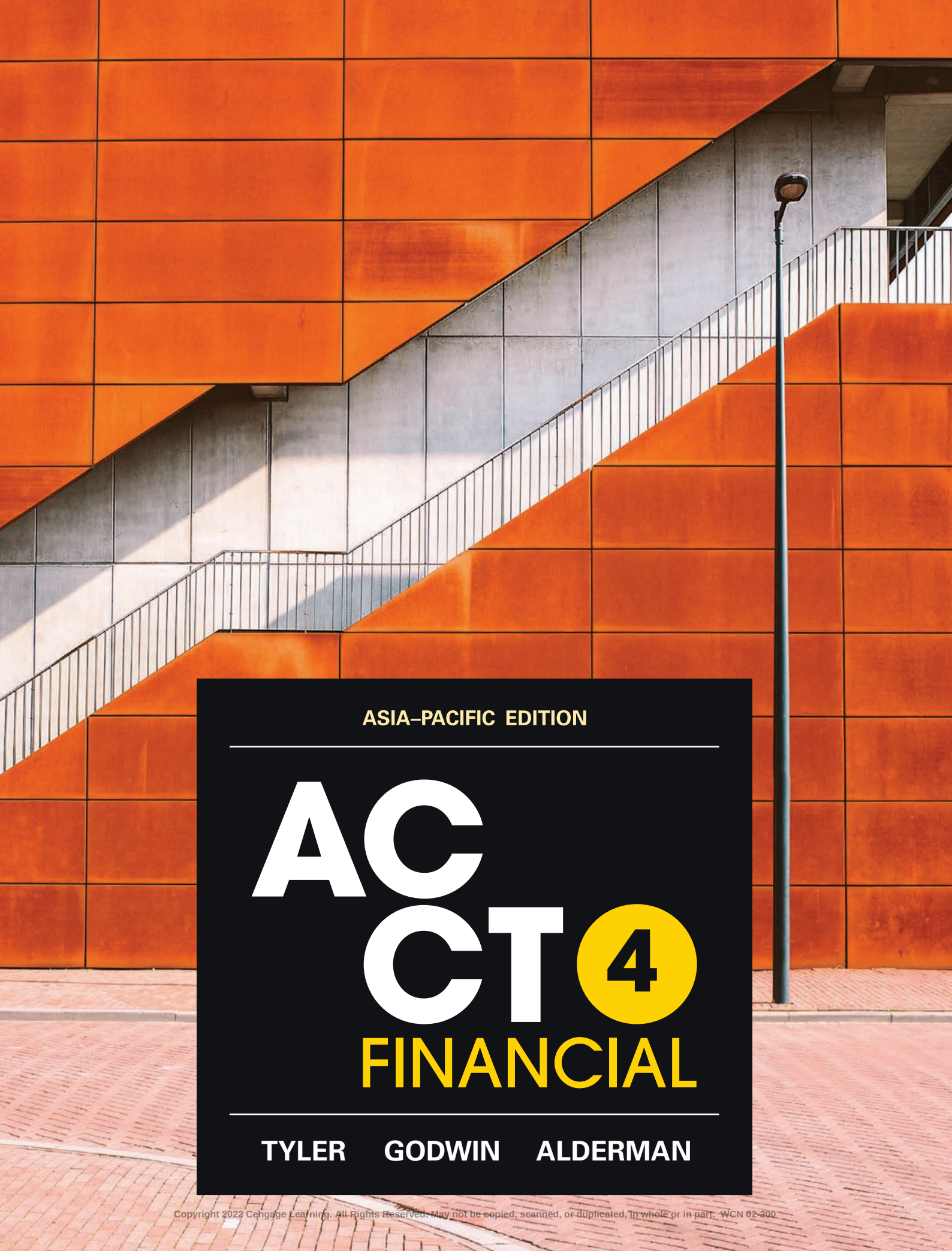

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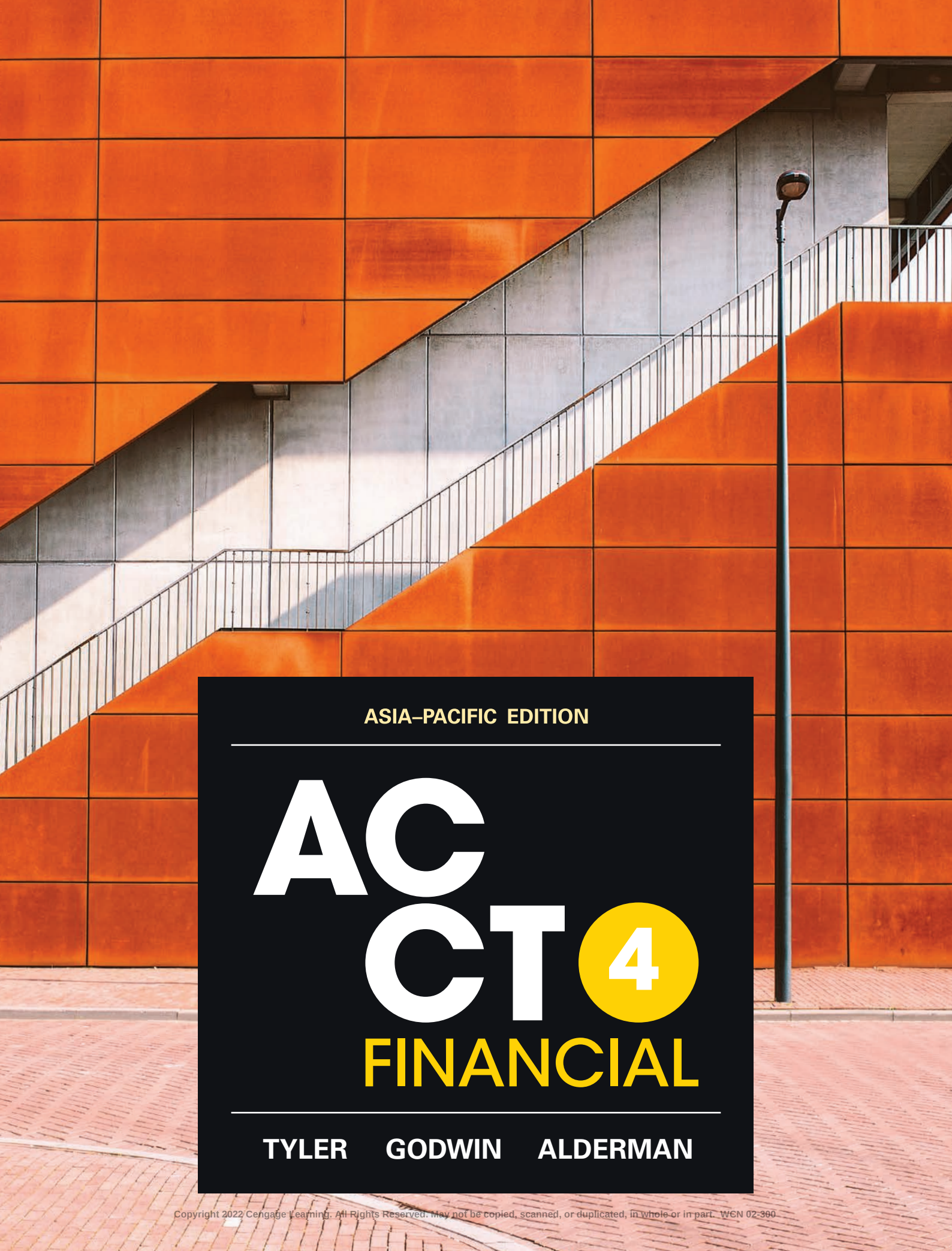

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BRIEF CONTENTS

1	Financial Accounting	1
2	Financial Statements	20
3	Recording Accounting Transactions	44
4	Accrual Accounting and Adjusting Entries	67
5	Cash and Internal Controls	90
6	Receivables	108
7	Inventory	126
8	Non-current Assets and Intangible Assets	149
9	Liabilities	173
10	Partnerships	199
11	Shareholders' Equity	216
12	Statement of Cash Flows	238
13	Financial Statement Analysis	260
A	Appendix: CSL Limited, Annual Report 2019/2020	287

Endnotes 310
Index 312
Tear-out review cards

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CONTENTS

1 Financial accounting 1

Beginning assumptions 2
Economic entity assumption 2
Accounting period assumption 2
Monetary unit assumption 2

Reporting profitability: the income statement 3
Revenues 3
Expenses 4
The income statement 5

Reporting financial position: the balance sheet 5
Assets 6
Liabilities 6
Equity 6
The balance sheet 7

Reporting equity: the statement of changes in equity 8
Linking the income statement and the balance sheet 8

Reporting cash flows: the cash flow statement 9
Financing activities 9
Investing activities 9
Operating activities 9
The cash flow statement 9

The objectives of financial reporting 10
Relevance and materiality 10
Faithful representation 11
Comparability 11
Verifiability 11
Timeliness 12
Understandability 12

The language of accounting 12
Exercises 15
Problems 17
Cases 19

2 Financial statements 20

Business forms 20

Generally Accepted Accounting Principles (GAAP) 22

Ethics in preparing financial statements 23

The balance sheet 24

The income statement 26
Profits before income tax expense 28
Other comprehensive income 28

Horizontal and vertical analyses 29
Horizontal analysis 29
Vertical analysis 30

The statement of changes in equity 31

Information beyond the financial statements 33
Notes to the financial statements 34
Auditor's report 35
Directors' report 35
Sustainability report 36
Governance information 37
Exercises 38
Problems 41
Cases 43

3 Recording accounting transactions 44

The accounting information system 44

Accounting transactions and the accounting equation 46
Transaction analysis 46

The dual-entry accounting system 50
The T-account 50
Debit and credit rules 51
Summary of debit and credit rules 53

Recording transactions in the accounting system 53
The journal 53
The ledger 53
The trial balance 54

Comprehensive example: journal entries to financial statements 54
Recording transactions in the journal and posting to the ledger 54
Preparing a trial balance 59
Preparing financial statements 59
Exercises 61
Problems 64
Cases 65

4 Accrual accounting and adjusting entries 67

Accrual and cash bases of accounting 67
Reporting accrual- and cash-based income 68

Adjusting journal entries 69
Scenario 1: Deferred revenue 69
Scenario 2: Accrued revenue 71
Scenario 3: Deferred expense 72
Scenario 4: Accrued expense 75
Summary of adjusting journal entries 76
Ethics and adjusting entries 76

Comprehensive example: adjusting journal entries 77
Journalising and posting adjusting entries 78
Preparing an adjusted trial balance 79
Using a worksheet 80
Preparing financial statements 80

Closing process 81

The accounting cycle: a summary 83
Exercises 84
Problems 87
Cases 89

5 Cash and internal controls 90

Internal control 90

Components of internal control 91
Control environment 91
Risk assessment 92
Control activities 92

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Information and communication 93
Monitoring 93
Limitations of internal control 94

Cash controls 94
Bank reconciliations 94
Bank reconciliation example 96
Petty cash funds 97

Reporting cash and cash equivalents 98

Analysing cash 99
Horizontal and vertical analyses 99
Free cash flow 100

Exercises 103
Problems 105
Cases 107

6 Receivables 108

Accounts receivable: recording, GST and reporting 108
Recording accounts receivable and GST 108
Reporting accounts receivable and GST payable 110

Uncollectible receivables 111
Direct write-off method 111
Allowance method 112

Estimating bad debt expense 114
Percentage-of-sales approach 114
Percentage-of-receivables approach 114

Analysing accounts receivable 116
Horizontal and vertical analyses 116
Receivables turnover ratio 117
Allowance ratio 118

Notes receivable 119
Recording the note 119
Recording interest 119
Collecting the note 120

Exercises 122
Problems 124
Cases 125

7 Inventory 126

Recording, expensing and reporting inventory 126
Recording inventory 126
Expensing inventory 130
Reporting inventory and cost of sales 131

Inventory costing methods 131
Specific identification 131
First-in, first-out (FIFO) 132
Last-in, first-out (LIFO) 133
Moving average 134

Comparing inventory costing methods 135

Estimating ending inventory 137

Lower-of-cost-and-net realisable value 137

Evaluating a business' management of inventory 138
Horizontal and vertical analyses 138
Inventory turnover ratio 139

EXTENSION: periodic inventory system 140
Recording inventory 141
Inventory costing methods 141

Exercises 144
Problems 147
Cases 148

8 Non-current assets and intangible assets 149

Recording, expensing and reporting non-current assets 149
Recording non-current assets 149
Expensing non-current assets 150
Reporting non-current assets 152

Calculating depreciation expense 152
Straight-line method 152
Reducing-balance method 153
Units-of-activity method 154
Comparing depreciation methods 155

Adjustments made during a non-current asset's useful life 157
Changes in depreciation estimates 157
Expenditures after acquisition 158
Asset impairment 159
Asset revaluations 160

Disposing of non-current assets 160
Loss example 161
Gain example 161

Evaluating a company's management of non-current assets 162
Horizontal and vertical analyses 162
Non-current asset turnover ratio 163
Average life and age of non-current assets 164

Non-current assets and cash flows 165

Intangible assets 165
Recording intangible assets 166
Amortising and impairing intangible assets 167

Exercises 169
Problems 171
Cases 172

9 Liabilities 173

Current liabilities 173
Taxes payable 174
Current liabilities with payroll 174
Notes payable 175
Current portion of non-current debt 176
Reporting current liabilities 176

Non-current liabilities 176

Bonds 177
Bonds issued at face value 179
Bonds issued at a discount 180
Bonds issued at a premium 182

Redeeming a bond before maturity 184

Additional liabilities 185
Lease liabilities 185
Contingent liabilities 186

Evaluating a company's management of liabilities 187
Horizontal and vertical analyses 187
Current ratio 188
Debt to assets ratio 189

EXTENSION: the time value of money 190

EXTENSION: determining a bond's issue price 191

EXTENSION: effective interest method of amortisation 192
Discount example 193
Premium example 194

Exercises 195
Problems 196
Cases 198

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10 Partnerships 199

The partnership form of business 200
Ease of formation 200
Partnership agreement 200
Mutual agency and co-ownership of property 200
Unlimited liability of owners 201
Transferability of ownership 201
No partnership taxation 201
Capital accounts for each partner 201

Commencing a partnership 202
Capital account for each partner 202

Allocate profits and losses 203
Sharing profits based on a set percentage 203
Sharing profits based on capital balances and on service 204

Admission and withdrawal of a partner 204
Purchasing a current partner's interest 205
Investing in the partnership 205
Investing in the partnership: bonus to new partner 206
Investing in the partnership: bonus to existing partners 206
Withdrawal of a partner 207
Revaluation of assets before withdrawal of a partner 207
Withdrawal of a partner at carrying amount 208
Withdrawal of a partner at more than the carrying amount 208
Withdrawal of a partner at less than the carrying amount 209

Liquidation 209
Sale of assets 209
Paying the liabilities 209
Partners receive remaining cash 210

Partnership financial statements 211
Exercises 212
Problems 213
Cases 215

11 Shareholders' equity 216

The corporate form of business 216
Separate legal entity 216
Ability to raise capital 217
Limited liability of owners 217
Transferability of ownership 217
Dividend imputation 218
Regulation 218

Contributed equity 218
Shareholder rights 219
Recording ordinary shares 219
Issuing shares by instalment 219
Oversubscription 220
Forfeiture 221

Dividends 221
Cash dividends 222
Share dividends 223
Dividend Reinvestment Plans in Australia 223
Share splits 224

Preference shares 225
Recording preference shares 225
Cash dividends on preference shares 226

Share buy-backs 226
Recording share buy-backs 228

Evaluating a company's management of equity 229
Horizontal and vertical analyses 229
Earnings per share 230
Return on equity 231
Dividend payout ratio 231
Dividend yield 232
Shareholders' equity and cash flows 233
Exercises 234
Problems 236
Cases 237

12 Statement of cash flows 238

The statement of cash flows 238
Cash flows from operating activities 239
Cash flows from investing activities 239
Cash flows from financing activities 239
Net increase (decrease) in cash 241
Additional disclosures 241

Preparing the statement of cash flows 241
Direct and indirect methods for operating cash flows 242

Reporting cash flows from operating activities: direct method 243
Cash received from customers 243
Cash paid for inventory 244
Cash paid for operating expenses 244
Cash paid for taxes 245
Other revenues and expenses 246
Net operating cash flows 246

Reporting cash flows from operating activities: indirect method 247
Adjustments for non-cash effects on net income 247
Adjustments for gains and losses from investing and financing activities 247
Adjustments for current assets and current liabilities 247
Net operating cash flows 249

Calculating cash flows from investing activities 249
Investments 249
Equipment 249
Accumulated depreciation 249
Summary of investing cash flows 250

Calculating cash flows from financing activities 250
Non-current liabilities 250
Contributed equity 250
Retained earnings 251
Net financing cash flows 251
Complete statement of cash flows: indirect method 251

Analysing a company's statement of cash flows 252
Free cash flow 252
Cash flow adequacy ratio 252
Exercises 254
Problems 257
Cases 259

13 Financial statement analysis 260

Financial statement analysis 261
Financial information 261
Standards of comparison 261
Analytical tools 262

Horizontal and vertical analyses 262
Horizontal analysis 262
Vertical analysis 263

Profitability analysis 269
Profit margin 269
Return on equity 270
Return on assets 270
Earnings per share 271
Price to earnings ratio 272
Summary of profitability 272

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Liquidity analysis **272**
Current ratio 273
Quick ratio 274
Receivables turnover ratio 274
Inventory turnover ratio 275
Summary of liquidity analysis 275
Solvency analysis **275**
Debt to assets ratio 276
Debt to equity ratio 277
Times interest earned 277
Summary of solvency 278
DuPont analysis **278**
Exercises *280*
Problems *283*
Cases *285*

A **Appendix: CSL Limited, Annual Report 2019/2020** **287**

Endnotes **310**
Index **312**
Tear-out review cards

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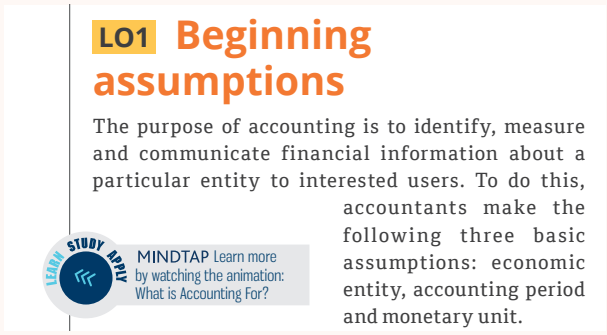
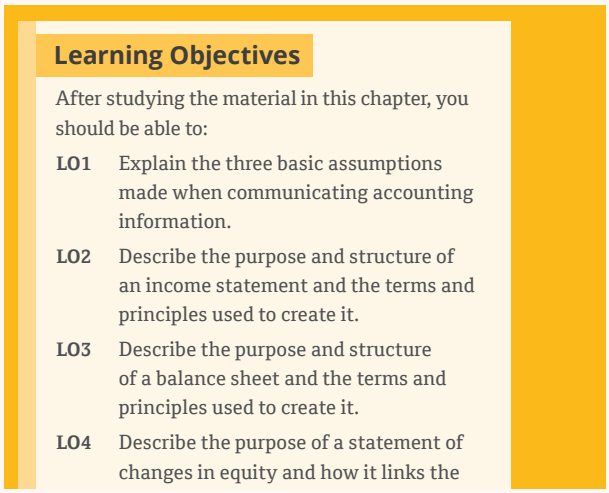
Guide to the text

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. **Learning objective icons** appear throughout the chapter to identify where each objective is discussed.





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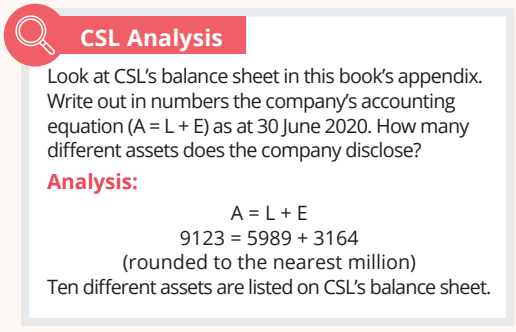
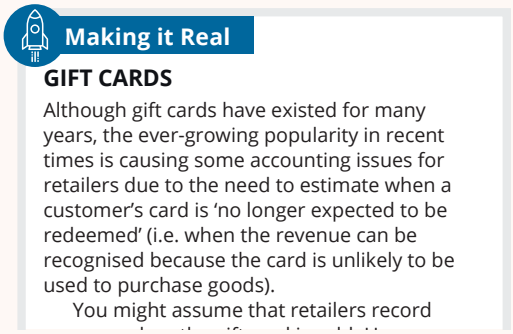
CSL Analysis boxes link to the CSL Annual Report extract provided in Appendix B of the textbook, providing an opportunity to apply financial accounting concepts to a real-world business.



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



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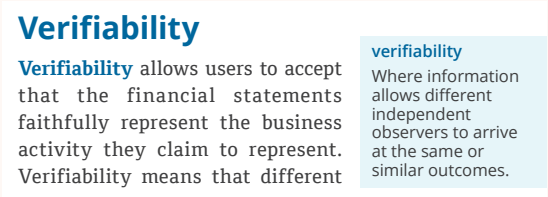

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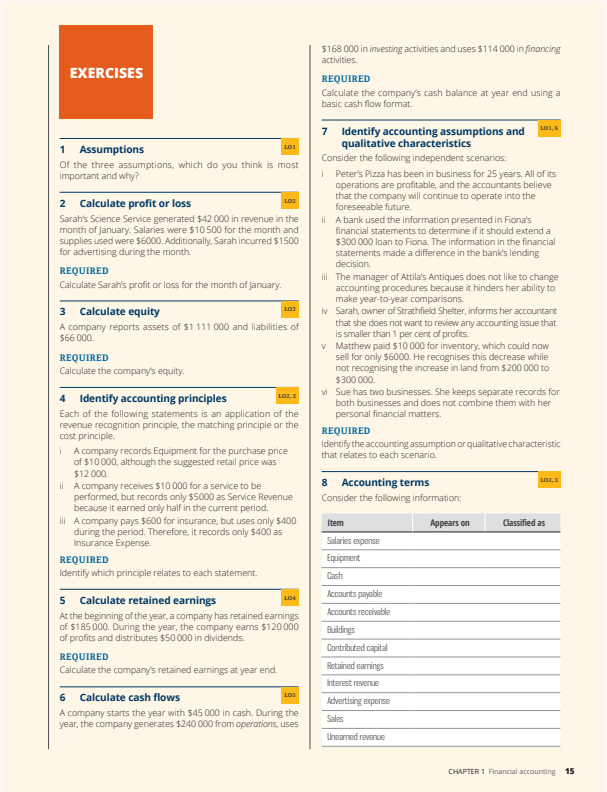

EXERCISES

1 Assumptions LO1

Of the three assumptions, which do you think is most important and why?

2 Calculate profit or loss LO2

Sarah's Science Service generated $42 000 in revenue in the month of January. Salaries were $10 500 for the month and supplies used were $6000. Additionally, Sarah incurred $1500 for advertising during the month.

REQUIRED

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

3 Calculate equity LO3

A company reports assets of $1 111 000 and liabilities of $66 000.

REQUIRED

Calculate the company's equity.

4 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 $12 000.
ii A company receives $10 000 for a service to be performed, but records only $5000 as Service Revenue because it earned only half in the current period.
iii A company pays $600 for insurance, but uses only $400 during the period. Therefore, it records only $400 as Insurance Expense.

REQUIRED

Identify which principle relates to each statement.

5 Calculate retained earnings LO4

At the beginning of the year, a company has retained earnings of $185 000. During the year, the company earns $120 000 of profits and distributes $50 000 in dividends.

REQUIRED

Calculate the company's retained earnings at year end.

6 Calculate cash flows LO3

A company starts the year with $45 000 in cash. During the year, the company generates $240 000 from *operations*, uses $168 000 in *investing* activities and uses $114 000 in *financing* activities.

REQUIRED

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

7 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 Attila's Antiques does not like to change accounting procedures because it hinders her ability to make year-to-year comparisons.
iv Sarah, owner of Strathfield Shelter, 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.

8 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		

CHAPTER 1 Financial accounting 15

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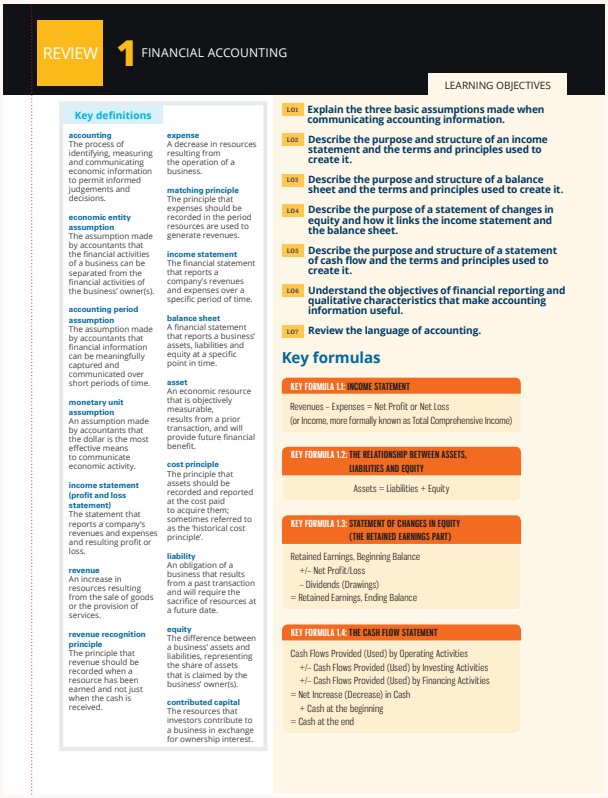

REVIEW **1** FINANCIAL ACCOUNTING

LEARNING OBJECTIVES

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 financial 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.

income statement (profit and loss statement) The statement that reports a company's revenues and expenses and 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 financial 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 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.

LO1 **Explain the three basic 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 statement of cash flow and the terms and principles used to create it.**

LO6 **Understand the objectives of financial reporting and 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 known as 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 (Drawings)
= 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

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1 FINANCIAL ACCOUNTING

Your school exams are over forever, and you are about to go on your 'gap' summer holidays. You decide to turn your love of drones into a business that you name Floating and Filming. With $1000 of your own money and a $2000 micro-enterprise loan from the bank, you purchase a $2600 drone (with gimbal, camera and two spare rechargeable batteries), $350 of spare propellers, SIM cards and other supplies. Floating and Filming has been featured on the regional SME (small-medium-enterprise) Facebook group, so you are off to a great start. During December, January and February, you have 28 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? While it has been fun it has also been hard work. 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 filming with a drone or to provide an occasional shark-spotting 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 live, eat, party and more.

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

Accounting is the process of identifying, measuring and communicating financial 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 the language of 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.

With this overall purpose in mind, this chapter introduces the basic terms, principles and rules that comprise the 'spelling' and 'grammar' of the accounting language. It does so by creating the summer financial statements of the Floating and Filming (F&F) business, 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 and statement of change in equity. Further, you should also have a working accounting vocabulary that will be expanded and refined in the following chapters.

Learning Objectives

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

- **LO1** Explain the three basic 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 statement of cash flow and the terms and principles used to create it.
- **LO6** Understand the objectives of financial reporting and qualitative characteristics that make accounting information useful.
- **LO7** Review the language of accounting.

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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)

LO1 Beginning assumptions

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

MINDTAP Learn more by watching the animation: What is Accounting For?

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 Floating and Filming (F&F) example in the introduction, this means that the business is the reporting entity and your personal activities (such as the cost of Saturday evening out with friends) should not be included with business activities (such as buying new propellers 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 financial information can be meaningfully captured and communicated over short periods of time, even if those accounting periods are somewhat artificial, such as a month or a quarter (but no longer than a year). This is known as the **accounting period assumption** – the assumption made by accountants that financial information can be meaningfully captured and communicated over short periods of time. Although the measurement involves numbers, it usually requires judgements and estimates more than mathematical calculations.

accounting period assumption
The assumption made by accountants that financial 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 F&F business example, the time period is the three months of summer.

Monetary unit assumption

The **monetary unit assumption** assumes that the dollar is the most effective means to communicate economic/financial activity – it is the 'attribute of interest'. The drone has many attributes: manufacturer, model, range, flying time and 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 F&F, paying for advertising on Facebook would be recorded as an expense, while a favourable story on the site would not be recorded in accounting as no money was exchanged. This is one of the limitations (but also strengths) of accounting. It assumes further that the dollar is a reasonably stable measure (the effect of inflation and deflation can be ignored).

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

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A more complex aspect of interpreting financial information, but at this stage not essential for a basic understanding of financial information is known as the going concern assumption. It 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 can be important because it affects the dollar amount recorded with respect to the value of certain assets. Because F&F will continue beyond the summer, it is a going concern and we value the drone at what it is worth to the business, *not* the amount it might be sold for at the end of summer. With this we introduce the concept of judgement into accounting and the realisation accounting may not have the mathematical precision many often think it has.

CSL Analysis

In this book's appendix, *CSL Annual Report 2019/2020*, 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 2020.

Which assumption does each description best relate to?

Analysis:

1 Economic entity ('consolidated' refers to all the companies in the group being brought into one 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.

MINDTAP Review this material with the e-lecture.

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*. 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'.

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

Revenues

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 did not have before you provided the service.

Revenues are recorded according to the **revenue recognition principle**. The revenue recognition principle states that revenue should be recorded when a resource

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.

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 funds:

Basis for qualified opinion

As discussed in Note yy, the Company's financing arrangements expire and amounts outstanding are payable on 19 August 202X. 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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Jonathan Tyler

Revenues and expenses are measured in dollars

has been *earned*, regardless of when the cash is received. That is, you may ask to be paid before filming the surfer in a contest or you may decide not to bill her until after she has received her 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 determining the timing of revenue recognition.

Given these definitions, total revenue for summer for F&F is as follows: you have only one source of revenue – drone 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 but 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.

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For F&F, selling surfing videos produces revenue

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 and other supplies consumed (used up) while running the business 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 propellers are regularly replaced 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 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 purchased 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	$1000

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 regularly refilled, equipment that is used on an ongoing basis (although it will eventually deteriorate and may be of no monetary value to the business) needs to be expensed. 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

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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 known as Total Comprehensive Income)

Given the revenues and expenses determined previously, F&F's summer income statement would appear as shown in **Exhibit 1.1**. It contains the business name, the statement name (i.e. '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.

Exhibit 1.1 INCOME STATEMENT FOR FLOATING AND FILMING

Floating and Filming Income statement for the three months ending 28 February		
Revenues		$11 200
Expenses:		
Supplies	$1000	
Interest	50	
Depreciation	650	
Total expenses		$ 1700
Profit		$9 500

CSL Analysis

Look at CSL's income statement (Consolidated statement of comprehensive income) in this book's appendix. The statement contains five revenues (including 'Finance income' 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 2020?

Analysis:

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

- Revenues: Sales and service revenue; Influenza Pandemic Facility Reservation fees; Royalties and License revenue; and Other income. (We have ignored the Comprehensive income as it is not part of Profits.)
- Expenses: Research and development expenses; Selling and marketing expense; and General and expense.
- Net profit for the period (after income tax expense) for 2020 was $2102.5 million. This was almost $200 million more than 2019 ($2102.5 – $1918.7). In passing you may have noticed the dollars are US dollars (USD) not Australian dollars (AUD). At this stage this is not important, but will be explored further in later chapters.

MINDTAP Review this material with the e-lecture.

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.

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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.

Assets

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

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 financial 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, but it is an asset because you expect to exchange it for cash when you are paid.

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, F&F 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 requires 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

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

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 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 F&F 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.

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 value of the business' assets and its liabilities.

A business can generate equity in two ways. The first is through contributed capital. **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 F&F is contributed

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

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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 from 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 (earnings) 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 F&F 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, F&F'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.

Exhibit 1.2 BALANCE SHEET FOR FLOATING AND FILMING

Floating and Filming Balance sheet at 28 February		
Cash	$ 1940	
Accounts receivable (money customers owe)	1200	
Supplies	100	
Drone	1950	
Total assets		$ 5 190
Loan from bank	$2 000	
Total liabilities		$2 000
Contributed capital	$1000	
Retained earnings	2 190	
Total equity		$ 3 190
Total liabilities and equity		$ 5 190

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.

MINDTAP Review this material with the e-lecture.

CSL Analysis

Look at CSL's balance sheet in this book's appendix. Write out in numbers the company's accounting equation (A = L + E) as at 30 June 2020. 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.

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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 (Drawings)
= Retained Earnings, Ending Balance

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

F&F'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.

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.

Exhibit 1.3 STATEMENT OF CHANGES IN RETAINED EARNINGS FOR FLOATING AND FILMING

Floating and Filming Statement of changes in retained earnings from 1 December to 28 February	
Retained earnings, 1 December	$ 0
+ Net income (or Net profits)	9 500
– Drawings (Dividends)	7 310
Retained earnings, 28 February	$2 190

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**.

Exhibit 1.4 RELATIONSHIP BETWEEN THE FINANCIAL STATEMENTS

Floating and Filming	
(Simple) Income statement	
Revenue	$11 200
– Expenses	1 700
Net income (or Profit)	$9 500
Statement of changes in equity (retained earnings)	
Retained earnings, 1 December	$ 0
+ Net income (from above)	9 500
– Drawings	7 310
Retained earnings, 28 February	$ 2 190
(Abbreviated) Balance sheet	
Total assets	$ 5 190
Liabilities	2 000
Contributed capital	1 000
Retained earnings (from above)	2 190
Total liabilities and equity	$ 5 190

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CSL Analysis

Look at CSL's statement of changes in equity (Consolidated statement of changes in equity) in this book's appendix.

1 Which column of the statement contains the changes in retained earnings?
2 For 2020, 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, as they are for 2020.)

Analysis:

1 The statement of changes in equity has five double (2020, 2019) columns of numerical data. The fourth column (headed Retained earnings) is CSL's statement of changes in retained earnings.
2 In 2020, the amount of profit after tax (Profit for the period) is $2102.5 million, which is the number shown on the income statement.
3 The total retained earnings at the end of the period are $10 752.3 million, which is the same balance shown on the Balance sheet.

MINDTAP Review this material with the e-lecture.

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*, but lets us look at them in reverse order because the first thing a business needs to do is obtain some money before it starts operations. Remember F&F started with $1000 of the owners and $2000 borrowed.

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, F&F 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 F&F, 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 – $1100 – $50 = $8850). 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

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

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:

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

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Given the cash inflows and outflows described previously, F&F'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.

Exhibit 1.5 **CASH FLOW STATEMENT FOR FLOATING AND FILMING**

Floating and Filming Cash flow statement for the months of December, January and February		
Operating activities		
Cash received from customers	$ 10 000	
Cash paid for supplies	(1100)	
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	1000	
Drawings (dividend)	(7 310)	
Net cash used by financing activities		(4 310)
Net increase in cash		$ 1940
Cash balance, 1 December		0
Cash balance, 28 February		$ 1940

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 until March 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 pay the interest.

MINDTAP Review this material with the e-lecture.

CSL Analysis

Look at CSL's cash flow statement in this book's appendix. How much cash did CSL generate or use for operating, investing and financing activities during 2020?

Analysis:

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

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

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

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

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Information that can help confirm may also help predict. For example, information about the revenue F&F 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 a mark of 49 and 50 is material since a 49 means the student fails, but one additional mark means they pass; 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 this book's appendix). 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 accounting 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 exact as estimates, judgements and choices need to be made). In an attempt to provide complete information, companies provide additional notes (e.g. see CSL's 'Notes to the financial statements' in this book's appendix).

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

Neutrality is moderated by the exercise of *prudence*, which is caution when making judgements under conditions of uncertainty. The exercise of prudence means that assets and revenue are not overstated and liabilities and expenses are not understated. The term 'conservatism' was once 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.

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 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

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

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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 F&F the drone may only last 11 months. A range of possible amounts and the related probabilities can also be verified.

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
Where 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'.

MINDTAP Review this material with the e-lecture.

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 we initially described it as the spelling and 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 generally accepted accounting principles presented in the tables. So, with a good understanding of the conceptual framework, you have the grammar necessary to begin your study of accounting.

TERMS USED TO IDENTIFY AND DESCRIBE FINANCIAL 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	Equity resulting from contributions from owners	Balance sheet
Retained earnings	Profits not distributed to owners	Balance sheet and statement of changes in equity (change in retained earnings)
Revenue	An increase in assets resulting from selling goods or providing a service	Income statement
Expense	A decrease in assets resulting from selling goods or providing a service	Income statement
Dividend (Drawings)	A distribution of profits to owners	Statement of changes in equity

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PRINCIPLES USED TO MEASURE 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, nor is the receipt of cash before the sale or service, the earning of revenue. If you sell to a customer who is likely to pay you, 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 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)

QUALITATIVE CHARACTERISTICS THAT MAKE FINANCIAL REPORTS USEFUL

Term	Definition	Ramification
Relevance	Accounting information should have the capacity to affect decisions	Information should have predictive and/or feedback value and should be timely
Materiality	The threshold over which an item could begin to affect decisions	When an amount is small, 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	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

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FINANCIAL STATEMENTS USED TO COMMUNICATE FINANCIAL 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

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EXERCISES

1 Assumptions

LO1

Of the three assumptions, which do you think is most important and why?

2 Calculate profit or loss

LO2

Sarah's Science Service generated $42 000 in revenue in the month of January. Salaries were $10 500 for the month and supplies used were $6000. Additionally, Sarah incurred $1500 for advertising during the month.

REQUIRED

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

3 Calculate equity

LO3

A company reports assets of $1 111 000 and liabilities of $66 000.

REQUIRED

Calculate the company's equity.

4 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 $12 000.

ii A company receives $10 000 for a service to be performed, but records only $5000 as Service Revenue because it earned only half in the current period.

iii A company pays $600 for insurance, but uses only $400 during the period. Therefore, it records only $400 as Insurance Expense.

REQUIRED

Identify which principle relates to each statement.

5 Calculate retained earnings

LO4

At the beginning of the year, a company has retained earnings of $185 000. During the year, the company earns $120 000 of profits and distributes $50 000 in dividends.

REQUIRED

Calculate the company's retained earnings at year end.

6 Calculate cash flows

LO5

A company starts the year with $45 000 in cash. During the year, the company generates $240 000 from *operations*, uses $168 000 in *investing* activities and uses $114 000 in *financing* activities.

REQUIRED

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

7 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 Attila's Antiques does not like to change accounting procedures because it hinders her ability to make year-to-year comparisons.

iv Sarah, owner of Strathfield Shelter, 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.

8 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		

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REQUIRED

Classify each of the items 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.

9 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).

10 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).

11 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?	
Employee	Is the business likely to grow in the next 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.

12 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	11 000

REQUIRED

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

13 Balance sheet equation

LO3

Consider the following independent situations:

i Kelly contributes $120 000 to the business and the business has total assets of $200 000. How much are liabilities?
ii Tran starts the year with $100 000 in assets and $80 000 in liabilities. Profit for the year is $25 000 and no dividends are paid. How much is Tran's equity at the end of the year?
iii Edward doubles the amount of his 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 Edward's assets at the beginning of the year?
iv During the year the liabilities of Chen Company triple. At the beginning of the year, assets were $80 000 and equity was $40 000. 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.

14 Statement of retained earnings

LO4

Chan Company's retained earnings on 1 July is $245 000. The following information is available for the first two months of the financial year:

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	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.

15 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).

16 Qualitative characteristics

LO6

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

i consistency
ii relevance
iii understandability
iv comparability
v prudence
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.

17 Assumptions and principles

LO1, 2, 3

The Gavaskar 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 Gavaskar 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 Gavaskar'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 Gavaskar 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, Gavaskar 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 Gavaskar should have handled the situation.

PROBLEMS

18 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 2021:

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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.

19 Identify and correct income statement errors

LO2

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

The Sivabalan Subsidiary 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 from the above information.

20 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 $300 000 of assets. At the end of the financial year the following financial statement (all figures in thousands) was quickly prepared by a student intern:

HHH Balance Statement for the year ending 30 June	
Resources:	
Cash	$ 90
Things we sell	120
Land	159
Retained earnings	51
Grand total	$438
Debts:	
Money we owe	$ 129
Contributed capital	189
Grand total	$ 318

REQUIRED

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

21 Errors in accounting

LO1, 2, 3

The Thu Tran Trading was started on 1 July. At 30 June the following year Ms Tran, the CEO and sole owner, prepared the company's balance sheet as follows:

Thu Tran Trading 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

Thu 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 Thu's personal beach house. However, she plans to use it for company retreats and for hosting some 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 Thu 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.

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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.

22 Preparing financial statements

LO2, 3, 4

On 1 June 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 June to hire 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 June, you have taken 2400 guests aboard the boat. Included in those 2400 guests were 12-person tour groups from Japan in mid-June who will not be paying the $1080 for another month.

REQUIRED

Prepare an income statement and a statement of retained earnings for the month ending 30 June and a balance sheet at 30 June. How might the financial statements influence your plans for July?

CASES

23 Read, find, 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 or time period 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 larger (note how you define *larger*); (ii) the more profitable (be careful how you define *more profitable*); and (iii) the better able to generate cash from its operations.

24 Ethics in accounting

LO1, 2, 6

As the chief accountant at an education college that is listed on the Australian Securities Exchange (ASX) 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 will 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.

25 Written communication skills

LO1, 2, 3, 4, 5

Your beautiful, caring brother has just won the lottery. 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 $100 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, on what assumptions they are based and why the financial statements are relevant to investors.

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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 and the role of principles and ethics in shaping these statements. 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.

Learning Objectives

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

- **LO1** Explore the three major forms of business.
- **LO2** Define Generally Accepted Accounting Principles (GAAP) and their origins.
- **LO3** Apply ethics in the preparation and presentation of financial statements.
- **LO4** Describe the main classifications of assets, liabilities and equity in a balance sheet.
- **LO5** Discuss the main subtotals of income on an income statement.
- **LO6** Analyse the balance sheet and the income statement using horizontal and vertical analyses.
- **LO7** Describe the structure of a statement of changes in equity.
- **LO8** Look at the types of information usually disclosed along with financial statements.

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LO1 Business forms

MINDTAP Learn more by watching the animation: Forms of Business

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.

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

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 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

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(owners). 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 owners. Like sole proprietorships, a partnership is considered a separate accounting entity, separate from the individual partners. Also 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 regulating companies, 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 bottom of the front cover of CSL's annual report in this book's appendix. 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.

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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.

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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

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 are enforced by ASIC. High-quality accounting standards should 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, estimates and choices that need to be made, which means financial statements do not have the mathematical precision many think they possess.

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'.

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 very similar to many other countries. The IFRS are developed by the **International Accounting Standards Board (IASB)** whose mission is to have a universal 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

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.

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USA (and some other countries) have retained their own GAAP.

CSL Analysis

Look at the Independent Auditor's Report in this book's appendix. 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, including:

a) giving a true and fair view of the consolidated financial position of the Group as at 30 June 2020 and of its consolidated financial performance for the year ended on that date; and
b) complying with Australian Accounting Standards and the Corporations Regulations 2001.[2]

LO3 Ethics in preparing financial statements

While GAAP provides general principles, what happens when judgements, estimates and choices need to be made? Is it sufficient to simply ask accountants to 'do the right thing' or 'be ethical'? Specific guidance is provided in APES 110 *Code of Ethics for Professional Accountants*. This is covered in more detail in a chapter in the companion textbook *ACCT Management*. In over 200 pages, APES 110 'sets out fundamental principles of ethics expected of accountants and reflecting the profession's recognition of its public interest responsibility'.

There are five fundamental principles of ethics for accountants:

1 Integrity – to be straightforward and honest in all professional and business relationships.
2 Objectivity – not to compromise professional or business judgements because of bias, conflict of interest or undue influence of others.
3 Professional competence and due care – to:
   a attain and maintain professional knowledge and skill at the level required to ensure that a client or employing organisation receives competent professional service and advice, based on current technical and professional standards and relevant legislation; and
   b act diligently and in accordance with applicable technical and professional standards.
4 Confidentiality – to respect the confidentiality of information acquired as a result of professional and business relationships.
5 Professional behaviour – to comply with relevant laws and regulations and avoid any conduct that the accountant knows or should know might discredit the profession.[3]

The standard goes on to explain some of the threats to compliance with the fundamental principles that might be created by a broad range of facts and circumstances, such as self-interest, self-review, advocacy, familiarity and intimidation. As auditors we are hired by the managers of the business (company) and paid by them. Although there are laws and regulations to stop auditors being easily fired,

Making it Real

IS ETHICS JUST PUBLIC RELATIONS?

You be the judge. On page 60 of CSL's *2020 Annual Report* in this book's appendix it states:

Ethics and transparency

While our Values serve as the directional compass of our work, our Code of Responsible Business Practice (Code) provides a more detailed map to deliver on our promise in ways that exemplify the highest standards of conduct throughout the organisation. This applies in all areas, from our R&D facilities to our plasma centres to our manufacturing sites to our commercial affiliates.

CSL's Code fosters a culture that rewards high ethical standards, personal and corporate integrity and respect for others.

In 2019/20, in line with our standard practice of ensuring CSL policies remain current, we commenced a review of the Code. The review included an independent assessment against Australian Standard – AS8002 Organisational Codes of Conduct and expert insights into current code of ethics good practice. CSL will publish the fourth edition of our Code in July 2021.

Each of our employees is responsible for complying with the applicable local laws of the countries in which we operate.[4]

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there are good commercial reasons (self-interest in continuing to earn our fees) why we would not want to unnecessarily upset those managers. Further, most of us find it stressful and unpleasant to work in an environment where we are not liked.

'Doing the right thing' is easy when it requires little or no effort or cost, but when it might involve the loss of your job or a major client, it is against your self-interest and may be much more difficult. Fortunately, students are not required to report a profit or else fail. In business, rarely but probably too often pressure is applied to make decisions, choices or estimates that result in financial statements that may be misleading. Ethics are important in the 'grey' area where your actions are not illegal but may not be completely unbiased or objective either.

LO4 The balance sheet

MINDTAP Learn more by watching the animation: Balance Sheets

Chapter 1 introduced the balance sheet (or statement of financial position). 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 Floating and Filming (F&F) 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; for example, 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, geographical 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 2020 balance sheet of CSL in **Exhibit 2.1** will be used as an illustration. As you review this financial 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; for example, 20.3 is $20 300 000). Note also that two years of data are presented, with the more recent year listed first. This is the normal format for most company's financial statements. CSL reports in US 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, US$1 = A$1.4 (A$1 = US$0.71).

Exhibit 2.1 **CSL LIMITED'S CONSOLIDATED BALANCE SHEET AS AT 30 JUNE 2020**

Consolidated Balance Sheet As at 30 June 2020			
		Consolidated Entity	
	Notes	2020 US$m	2019 US$m
CURRENT ASSETS			
Cash and cash equivalents	14	1 194.4	657.8
Receivables and contract assets	15	1 703.9	1 821.7
Inventories	4	3 509.5	3 038.8
Current tax assets		35.1	21.4
Other financial assets		3.3	0.4
Total Current Assets		6 446.2	5 540.1
NON-CURRENT ASSETS			
Property, plant and equipment	8	5 366.0	4 484.3
Intangible assets	7	2 140.2	1 878.3
Right-of-use assets	8	939.4	–
Deferred tax assets	3	543.0	378.7
Other receivables	15	14.3	21.6
Other financial assets		14.2	9.9
Retirement benefit assets	18	1.4	1.5
Total Non-Current Assets		9 018.5	6 774.3
TOTAL ASSETS		15 464.7	12 314.4
CURRENT LIABILITIES			
Trade and other payables	15	1 525.4	1 407.7
Interest-bearing liabilities and borrowings	11	202.3	420.6
Current tax liabilities		253.7	162.2
Provisions	16	156.9	194.9
Deferred government grants	9	3.2	2.8
Total Current Liabilities		2 141.5	2 188.2
NON-CURRENT LIABILITIES			
Interest-bearing liabilities and borrowings	11	5 790.5	4 242.2
Retirement benefit liabilities	18	347.5	307.0

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Consolidated Balance Sheet As at 30 June 2020			
	Notes	Consolidated Entity	
		2020 US$m	2019 US$m
Deferred tax liabilities	3	352.0	168.7
Provisions	16	41.7	35.9
Deferred government grants	9	40.1	34.6
Other non-current liabilities	15	223.8	86.5
Total Non-Current Liabilities		6 795.6	4 874.9
TOTAL LIABILITIES		8 937.1	7 063.1
NET ASSETS		6 527.6	5 251.3
EQUITY			
Contributed equity	12	(4 561.0)	(4 603.0)
Reserves	12	336.3	242.0
Retained earnings	19	10 752.3	9 612.3
TOTAL EQUITY		6 527.6	5 251.3

The consolidated balance sheet should be read in conjunction with the accompanying notes.

Source: CSL Limited, *Annual Report 2019/2020*, p. 97

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

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

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.

CSL reports five current assets totalling almost $6.5 billion on its 30 June 2020 balance sheet. As you might expect from a biotechnology company, the majority of those assets (over $3.5 billion) is in Inventories, with Receivables and contract assets and Cash and cash equivalents making up the majority of the other current assets.

Non-current 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.

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.

CSL reports over $9 billion of Total non-current assets on its 30 June 2020 balance sheet, with over $5 billion of Property, plant and equipment, making it the largest asset.

KEY FORMULA 2.1: ASSETS

Current Assets + Non-current Assets
= Total Assets

Intangible assets

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

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 called amortisation instead of depreciation) and are reported net of amortisation or impairment. Intangible assets (which Note 7 to the financial statements shows is predominantly goodwill, intellectual property and software) 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 and research teams.

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

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the government. Even long-term debt, if maturing within one year, is classified as a current liability.

CSL reports five current liabilities totalling over $2 billion on its 30 June 2020 balance sheet. The largest is over $1.5 billion in Trade and other payables, which is basically the amount owed to suppliers. The company also reports over $250 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 interest-bearing liabilities. CSL has almost $4 billion of non-current liabilities at 30 June 2020.

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.

retained earnings
The amount a company earns and retains in the business.

contributed equity
The amount of equity a company generates through the sale of shares to investors (shareholders).

Retained earnings is the amount of equity a company generates by being profitable (i.e. the equity is earned) and is kept (retained) in the business, not paid out as dividends.

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 can be referred to as share capital or issued capital. Like most publicly traded companies, CSL reports its equity accounts in one general section called (Shareholders') Equity.

There is just over $6.5 billion in total equity and almost $11 billion in retained earnings, indicating a lot of profits in previous years that have not been distributed as dividends, but rather retained and used in the business to buy assets. Reserves are like retained earnings, but are a little more complex and will be discussed in depth in Chapter 11. Unusually, CSL has negative contributed equity, which has come about because shares were originally issued at $0.75 (adjusted after the share split) and bought back for substantially more (see CSL's Note 12 to the financial statements). Share buy-backs are discussed in Chapter 11.

MINDTAP Review this material with the e-lecture.

LO5 The income statement

MINDTAP Learn more by watching the animation: Income Statements.

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* 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 (see **Exhibit 1.1**) 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 (CA ANZ), a single-step income statement presents its income clearly. In 2020, 14 expense items totalling almost $139 million was subtracted from five revenue items totalling over $141 million to give a Surplus before tax of over $2 million. There was a large Comprehensive expense that left a Total comprehensive deficit for the year, net of tax of over $2.5 million. Because CA ANZ is a not-for-profit organisation, it reports deficits or surpluses rather than profits or losses (i.e. in 2019, it recorded a *surplus* of $13.8 million, not a *profit* of $13.8 million).

multi-step income statement
A statement in which certain revenues and expenses are grouped together to calculate 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
An income group that 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 purposes, **Exhibit 2.2** contains CSL's income statement for the financial

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Exhibit 2.2 **CSL'S CONSOLIDATED INCOME STATEMENT**

Consolidated Statement of Comprehensive Income For the Year Ended 30 June 2020			
		Consolidated Entity	
	Notes	2020 US$m	2019 US$m
Continuing operations			
Sales and service revenue		8 796.6	8 205.4
Influenza Pandemic Facility Reservation fees		145.4	133.4
Royalties and License revenue		158.5	171.1
Other Income		50.3	28.7
Total Operating Revenue		9 150.8	8 538.6
Cost of sales		(3 924.4)	(3 761.2)
Gross profit		5 226.4	4 777.4
Research and development expenses	6	(921.8)	(831.8)
Selling and marketing expenses		(896.2)	(866.8)
General and administration expenses		(691.8)	(574.8)
Operating profit		2 716.5	2 504.0
Finance costs	2	(150.8)	(176.7)
Finance income		7.0	13.8
Profit before income tax expense		2 572.7	2 341.1
Income tax expense	3	(470.2)	(422.4)
Net profit for the period		2 102.5	1 918.7
Other comprehensive income			
Items that may be reclassified subsequently to profit or loss			
Exchange differences on transiation or foreign operations, net of hedges on foreign investments	12	13.3	(34.8)
Items that will not be reclassified subsequently to profit or loss			
Actuarial (losses)/gains on defined benefit plans, net of tax	19	(13.6)	(67.1)
Total or other comprehensive income/(loss)		(0.3)	(101.9)
Total comprehensive income for the period		2 102.2	1 816.8
Earnings per share (based on net profit for the period)		US$	US$
Basic earnings per share	10	4 633	4 236
Diluted earnings per share	10	4 615	4 226

The consolidated statement of comprehensive income should be read in conjunction with the accompanying notes.

Source: CSL Limited, *Annual Report 2019/2020*, p. 96.

year ended 30 June 2020. 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, all numbers are in millions of (US) dollars (shown to one decimal point) except earnings per share.

Gross profit

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 includes service revenue with its sales revenue. CSL also reports three other revenues: Influenza pandemic facility reservation fees, Royalties and license revenue, and Other income, which together give Total operating revenue of $9150.8 (over US$9 billion or about A$13 billion). A small amount of Finance income is reported in the middle of the statement as this is seen to offset Finance cost reported just above.

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

Listed next is **cost of sales**, sometimes called cost of goods sold (sometimes abbreviated as COS or COGS), 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.

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.

With cost of sales of almost $4 billion, CSL generated a gross profit of over $5 billion for the year. This gives an average mark-up on inventory of 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

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

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that they are incurred year after year as the company runs its business.

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

Profits before income tax expense

Gross profit less *Operating expenses* yields the second subtotal: *Operating profits*. Finance costs minus Finance income then gives **profits before income tax expense**, sometimes also called 'earnings before income taxes' and other similar titles. This represents the profit that a company generates from revenues less expenses pre income tax.

After reporting its profit before tax, CSL reports **Income tax expense** of $470.2 million to yield a Net profit for the period (*profit after tax*) of $2102.5 million.

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.

CSL Analysis

Look at CSL's income statement in **Exhibit 2.2**. 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.

Other comprehensive income

Note in the top section on the Income statement, the term 'profit' is used (gross, operating, before income tax, and 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 Exchange differences in translation of foreign operations (due to changes in exchange rates between the US dollar and currencies of other countries in which CSL operates, including Australia)

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:[5]

- Samsung makes record profit of $109 million 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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and Actuarial losses in 'defined benefit plans'. 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 over US$4.60, which is unsurprising given the share price is around US$200.

MINDTAP Review this material with the e-lecture.

LO6 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 over A$3 billion of total comprehensive income for the 2020 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 US$2102.1 million 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
A method of analysing a company's account balances over time by calculating absolute and percentage changes in each account.

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 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 $470 million over the year, from $3039 in 2019. Dividing that increase by the 2019 balance yields a change of over 15 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 2.2** would show a 9.4 per cent increase (5226.4 – 4777.4) ÷ 4777.4 in gross profits, but only an 8.5 per cent increase (2716.5 – 2504.0) ÷ 2504.0 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 over 25 per cent higher than the prior year. Since Total liabilities increased over 26 per cent, the company's asset growth was not generated by borrowing money alone. Rather, the company grew by being profitable and not paying out all profits in dividends (12 per cent increase in Retained earnings).

An examination of the financial statements may appear to be complicated by the presentation in US dollars (USD). In vertical and horizontal analyses, the percentages and percentage changes are exactly the same as they would have been had the financial statements been in Australian dollars (AUD), because we are comparing within and between figures in one currency. Only when comparing actual dollar amounts or dollar changes between CSL's financial statements in USD and those of other companies in AUD would a currency conversion be required.

A minor complication is the change in the prices. Inflation means prices on average are rising. So if CSL's sales were exactly the same in 2020 as 2019, it would probably mean they sold less because the price of the products they sold might be expected to have

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Exhibit 2.3 HORIZONTAL ANALYSIS OF CSL'S CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	A	B	C	D	E	F
1	CSL Consolidated Statement of Comprehensive Income					
2		Notes	2020 US$	2019 US$	$ Change	% Change
3	**Continuing operations**					
4	Sales and service revenue		**8,796.6**	8,205.4	591.2	0.072
5	Influenza Pandemic Facility Reservation fees		**145.4**	133.4	12.0	0.090
6	Royalties and License revenue		**158.5**	171.1	–12.6	–0.074
7	Other Income		**50.3**	28.7	21.6	0.753
8	**Total Operating Revenue**		**9,150.8**	8,538.6	612.2	0.072
9	Cost of sales		**(3,924.4)**	(3,761.2)	–163.2	0.043
10	**Gross profit**		**5,226.4**	4,777.4	449.0	0.094
11	Research and development expenses	6	**(921.8)**	(831.8)	–90.0	0.108
12	Selling and marketing expenses		**(896.2)**	(866.8)	–29.4	0.034
13	General and administration expenses		**(691.8)**	(574.8)	–117.0	0.204
14	**Operating profit**		**2,716.5**	2,504.0	212.5	0.085
15	Finance costs	2	**(150.8)**	(176.7)	25.9	–0.147
16	Finance income		**7.0**	13.8	–6.8	–0.493
17	**Profit before income tax expense**		**2,572.7**	2,341.1	231.6	0.099
18	Income tax expense	3	**(470.2)**	(422.4)	–47.8	0.113
19	**Net profit for the period**		**2,102.5**	1,918.7	183.8	0.096
20	**Total other comprehensive income**	11 & 19	–0.3	–101.9	101.6	–0.997
21	**Total comprehensive income for the period**		**2,102.2**	1,816.8	285.4	0.157
22	**Basic Earnings per share (based on net profit)**	10	**4.633**	4.236	0.4	0.094

Source: Adapted from CSL Ltd, *Annual Report 2019/2020*, p. 96.

gone up. This is unimportant when inflation is low and we are making comparisons only 12 months apart, but care is needed when comparing dollar amounts over longer periods or periods when inflation rises sharply. By way of an example, being stuck in the same job will probably result in an increased salary, but if this increase is only at the level of the Consumer Price Index (CPI) then 10 years later one may be earning 30 per cent more but it will not buy any more, so the increase is not real.

In summary, horizontal analysis of the income statement shows that CSL had another growth year. Horizontal analysis (as seen in **Exhibit 2.3**) provides the context for a more thorough understanding of the financial statements.

The five-year summary information for CSL (as seen in **Exhibit 2.4**) is an extension of the horizontal analysis undertaken above, showing Total operating revenue rose from $6115 to $9151 million between 2016 and 2020, or 49.6 per cent, while Net profits for the period (after tax) rose from $1242 million to $2103, a more spectacular 69 per cent.

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.

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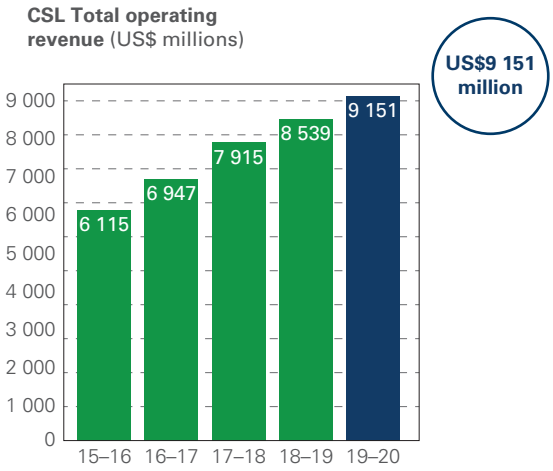
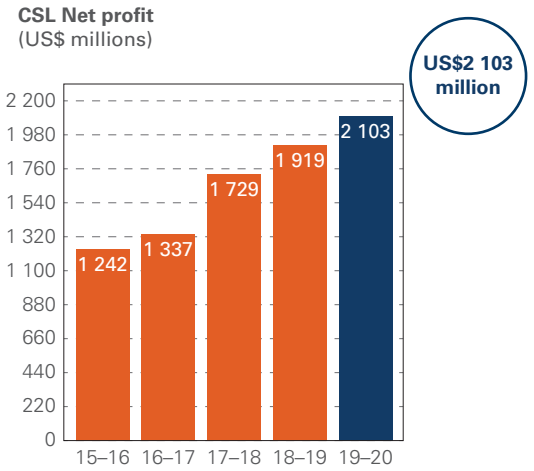
Exhibit 2.4 **CSL, FIVE-YEAR SUMMARY INFORMATION**





Source: CSL Ltd, *Annual Report 2019/2020*, p. 7.

KEY FORMULA 2.3: VERTICAL ANALYSIS

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

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

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).

In vertical analysis we divide each item by total assets for that year. These calculations are shown in **Exhibit 2.5**. Not shown are the similar calculations that would be made for a vertical analysis of the company's income statement. The only difference is that each item would be divided by Total operating revenue.

An examination of the spreadsheet shows the single largest asset for CSL is Property, plant and equipment (PPE) at 34.7 per cent (5366 ÷ 15 464.7) of Total assets (36.4% in 2019). Inventories have also decreased as a percentage of Total assets (24.7% to 22.7%). A new asset, Right-of-use assets, is reported for the first time because CSL has adopted the new Accounting Standard AASB 16.

The analysis also reveals CSL's capital structure. Capital structure refers to the degree to which a company's assets are funded from liabilities versus equity. In general, a capital structure more heavily weighted towards liabilities is riskier. According to the vertical analysis, CSL financed almost 58 per cent of Total assets from Total liabilities (debt) and therefore a little more than 42 per cent from Total (shareholders') equity. This ratio is little changed between 2019 and 2020 despite Total assets growing substantially from $12.3 billion to $15.5 billion (over 25 per cent as a horizontal analysis of the balance sheet would show).

MINDTAP Review this material with the e-lecture.

LO7 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 2020. Like the other financial statements, changes in equity reports two years of data. However, unlike the income statement,

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Exhibit 2.5 VERTICAL ANALYSIS OF CSL'S CONSOLIDATED BALANCE SHEET

	A	B	C	D	E	F
1	CSL Consolidated Balance Sheet					
2		Notes	2020 US$	2019 US$	$ Change	% Change
3	**CURRENT ASSETS**					
4	Cash and cash equivalents	14	**1,194.4**	657.8	0.077	0.043
5	Receivables and contract assets	15	**1,703.9**	1,821.7	0.110	0.118
6	Inventories	4	**3,509.5**	3,038.8	0.227	0.196
7	Current tax assets		**35.1**	21.4	0.002	0.001
8	Other financial assets		**3.3**	0.4	0.000	0.000
9	Total Current Assets		**6,446.2**	5,540.1	0.417	0.358
10	**NON-CURRENT ASSETS**					
11	Property, plant and equipment	8	**5,366.0**	4,484.3	0.347	0.290
12	Intangible assets	7	**2,140.2**	1,878.3	0.138	0.121
13	Right-of-use assets	8	**939.4**	–	0.061	0.000
14	Deferred tax assets	3	**543.0**	378.7	0.035	0.024
15	Other receivables	15	**14.3**	21.6	0.001	0.001
16	Other financial assets		**14.2**	9.9	0.001	0.001
17	Retirement benefit assets	18	**1.4**	1.5	0.000	0.000
18	Total Non-Current Assets		**9,018.5**	6,774.3	0.583	0.438
19	TOTAL ASSETS		**15,464.7**	12,314.4	1.000	0.796
20	**CURRENT LIABILITIES**					
21	Trade and other payables	15	**1,525.4**	1,407.7	0.099	0.091
22	Interest-bearing liabilities and borrowings	11	**202.3**	420.6	0.013	0.027
23	Current tax liabilities		**253.7**	162.2	0.016	0.010
24	Provisions	16	**156.9**	194.9	0.010	0.013
25	Deferred government grants	9	**3.2**	2.8	0.000	0.000
26	Total Current Liabilities		**2,141.5**	2,188.2	0.138	0.141
27	**NON-CURRENT LIABILITIES**					
28	Interest-bearing liabilities and borrowings	11	**5,790.5**	4,242.2	0.374	0.274
29	Retirement benefit liabilities	18	**347.5**	307.0	0.022	0.020
30	Deferred tax liabilities	3	**352.0**	168.7	0.023	0.011
31	Provisions	16	**41.7**	35.9	0.003	0.002
32	Deferred government grants	9	**40.1**	34.6	0.003	0.002
33	Other non-current liabilities	15	**223.8**	86.5	0.014	0.006
34	Total Non-Current Liabilities		**6,795.6**	4,874.9	0.439	0.315
35	TOTAL LIABILITIES		**8,937.1**	7,063.1	0.578	0.457
36	NET ASSETS		**6,527.6**	5,251.3	0.422	0.340
37	**EQUITY**					
38	Contributed equity	12	**(4,561.0)**	(4,603.0)	–0.295	–0.298
39	Reserves	12	**336.3**	242.0	0.022	0.016
40	Retained earnings	19	**10,752.3**	9,612.3	0.695	0.622
41	**TOTAL EQUITY**		**6,527.6**	5,251.3	0.422	0.340

The consolidated balance sheet should be read in conjunction with the accompanying notes.

Source: Adapted from CSL Limited, *Annual Report 2019/2020*, p. 97.

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 equity accounts plus the total. Three 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

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Exhibit 2.6 CSL'S CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Consolidated Statement of Changes in Equity
For the Year Ended 30 June 2020

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	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
As at the beginning of the year	(4 603.0)	(4 634.5)	(5.7)	29.1	247.7	195.1	9 612.3	8 490.2	5 251.3	4 079.9
Profit for the period	–	–	–	–	–	–	2 102.5	1918.7	2 102.5	1918.7
Other comprehensive income	–	–	13.3	(34.8)	–	–	(13.6)	(67.1)	(0.3)	(101.9)
Total comprehensive income for the full year									2 102.2	1816.8
Transactions with owners in their capacity as owners										
Opening balance sheet adjustment adopting AASB 16 and 15 (See Accounting Policies disclosure)	–	–	–	–	–	–	(65.0)	74.0	(65.0)	74.0
Share based payments	–	–	–	–	81.0	52.6	–	–	81.0	52.6
Dividends	–	–	–	–	–	–	(883.1)	(806.8)	(883.1)	(806.8)
Share issues										
– Employee share scheme	42.0	31.5	–	–	–	–	–	–	42.0	31.5
Other	–	–	–	–	–	–	(0.8)	3.3	(0.8)	3.3
As at the end of the year	(4 561.0)	(4 603.0)	7.6	(5.7)	328.7	247.7	10 752.3	9 612.3	6 527.6	5 251.3

The consolidated statement of changes in equity should be read in conjunction with the accompanying notes.

Source: CSL Limited, *Annual Report 2019/2020*, p. 98.

(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 buy-back, say, 10 shares it would need to pay $250 ($25 × 10), which would leave a negative contributed equity of $150 (original $100 minus $250 buy-back). Reasons for buy-backs are discussed in Chapter 11.

The second and third columns are reserves and are shown as a single item in the balance sheet. The larger is Share-based payment reserve, described in Note 12 as 'the share-based payments reserve is used to recognise the fair value of options, performance rights and GESP rights issued to employees'.

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 comprehensive income ($2102.5 – $13.6) is added to the beginning retained earnings balance ($9612.3), and dividends ($883.1) are subtracted along with an adjustment due to the change in the accounting standard. As we can calculate, CSL paid out around 42 per cent of its comprehensive income in 2020 in dividends ($883.1 ÷ $2088.9).

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: $6527.6.

MINDTAP Review this material with the e-lecture.

LO8 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. Five items of interest are:

- notes to the financial statements
- auditor's report and auditor's declaration of independence

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Making it Real

WHICH RETAILER IS WHICH?[6]

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 items from the 2020 financial statements of two well-known retailers: Myer and JB Hi-Fi. Can you tell which company is which? Although one company has about 30 per cent more total assets, it has more than double the sales. Six years ago it was the reverse. Vertical analysis facilitates the comparison in 2014 and 2020 (figures as a percentage of total assets or total revenues).

	Company A	Company B
Inventories	23.4%	10.4%
Plant, property and equipment	5.5%	51.7%
Gross profits	21.4%	46.8%
Total comprehensive income	3.8%	–7.1%

Alamy Stock Photo/Takatoshi Kurikawa

Alamy Stock Photo/KC Hunter

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 mainly 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 B has 51.7 per cent of its assets in PPE and Company A 23.4 per cent of its total assets in inventory. Gross profit margins are also substantially different (Company A buys for $78.60, sells for $100 and makes a $21.40 gross profit, while B buys for $53.20, sells for $100 and makes a $46.80 gross profit) and one company made a modest income of $3.80 from every $100 of sales, while the other lost $7.10 for every $100 of sales.

Therefore, Company B is Myer and A is JB Hi-Fi. Six years ago ratios were similar except Myer's Total comprehensive income was 2.9 per cent of sales while JB Hi-Fi's was 4.4 per cent.

- directors' report, chair and CEO message, overview of the company and operations
- 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 items in the financial statements in the 'Note' column is a number that refers to a specific note following the financial statements. For CSL there are 24 notes in 2020, taking up 33 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.

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notes to the financial statements
The additional textual and numerical information immediately following 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, (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'.[7] 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 Consolidated Statement of Comprehensive Income.

Exhibit 2.7 **EXTRACT FROM CSL'S INCOME STATEMENT BALANCE SHEET**

	Note
Research and development expenses	6
Finance costs	2
Cash and cash equivalent	14
Inventories	4
Intangible assets	7
Contributed equity	12

Source: Adapted from CSL Limited, *Annual Report 2019/2020*, pp. 96–7.

'Note 6: Research & Development' from CSL's *Annual Report 2019/2020* states:

> The Group conducts research and development activities to support future development of products to serve our patient communities, to enhance our existing products and to develop new therapies.
>
> All costs associated with our research and development activities are expensed as incurred as uncertainty exists up until the point of regulatory approval as to whether a research and development project will be successful. At the point of approval, the total cost of development has largely been incurred. Development costs incurred after regulatory approval are expensed.[8]

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 do not 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.

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.

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 2020 auditor's report.

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

directors' report
Part of the financial report that covers matters that are the Board of Directors' responsibility.

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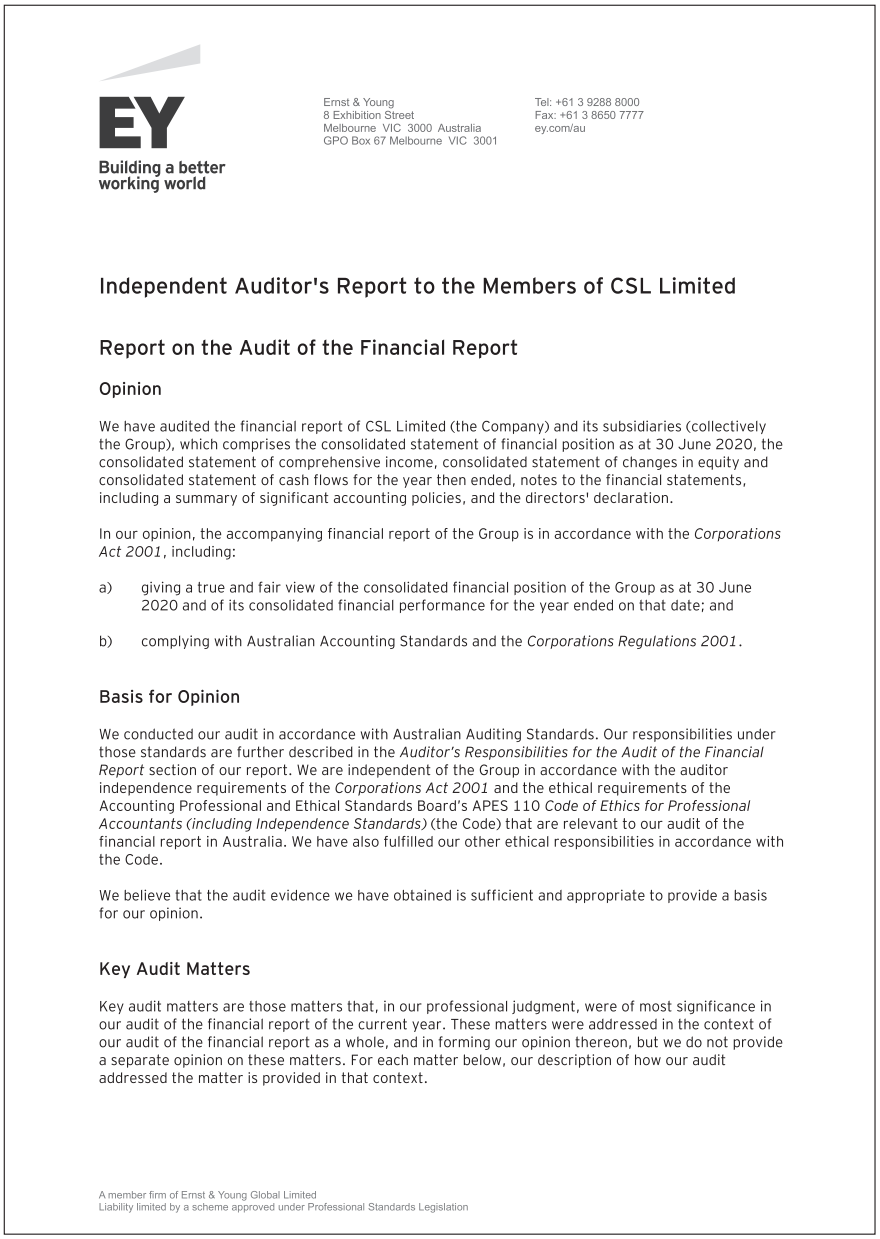
Exhibit 2.8 EXTRACT FROM CSL'S INDEPENDENT AUDITOR'S REPORT



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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 2020, the consolidated statement of comprehensive income, consolidated statement of changes in equity and 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:

a) giving a true and fair view of the consolidated financial position of the Group as at 30 June 2020 and of its consolidated financial performance for the year ended on that date; and

b) 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 (including Independence Standards)* (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 judgment, 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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Source: CSL Ltd, *Annual Report 2019/2020*, p. 136.

which are the board of directors' responsibility, including who the directors are, how many meetings they attended, and what shareholdings they have.

Other information

Sometimes referred to as management's discussion and analysis, CSL opens 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 and, for CSL's 2020 annual report, takes up the first 93 pages.

It is worth looking in more detail at the CSL report in this book's appendix or on the internet. An excerpt is presented in **Exhibit 2.9**. Unsurprisingly, it was written in the middle of the COVID-19 pandemic.

Sustainability report

Many companies report information that is broader than the financial and operating activities. Some reporting areas and frameworks have

MINDTAP Learn more by watching the animation: Sustainability and tbl reporting

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Exhibit 2.9 **EXCERPT FROM 'ABOUT CSL'**

Dear Stakeholders,
In writing this message we have had the opportunity to reflect on the sobering and far-reaching impact that the COVID-19 pandemic has had on our global community.

While the pandemic has certainly added complexity to our business and operating environment, CSL has had a number of notable achievements throughout the year, including the Company's 25th anniversary as a listed company on the Australian Securities Exchange. We are pleased to share some of those success stories in this report.

Source: CSL Ltd, *Annual Report 2019/2020*, p. 2. ©2020 CSL Limited. Reproduced with permission.

been developed over recent decades that consider a more comprehensive set of stakeholders. 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.

In 2018, CSL produced an *Our Corporate Responsibility* report covering such issues as:

- CSL's approach to corporate responsibility
- United Nations Sustainability Development Goals
- employee health and safety
- safety of plasma therapies and vaccines
- anti-bribery and anti-corruption
- access to medicines
- responsible marketing of medicines.

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

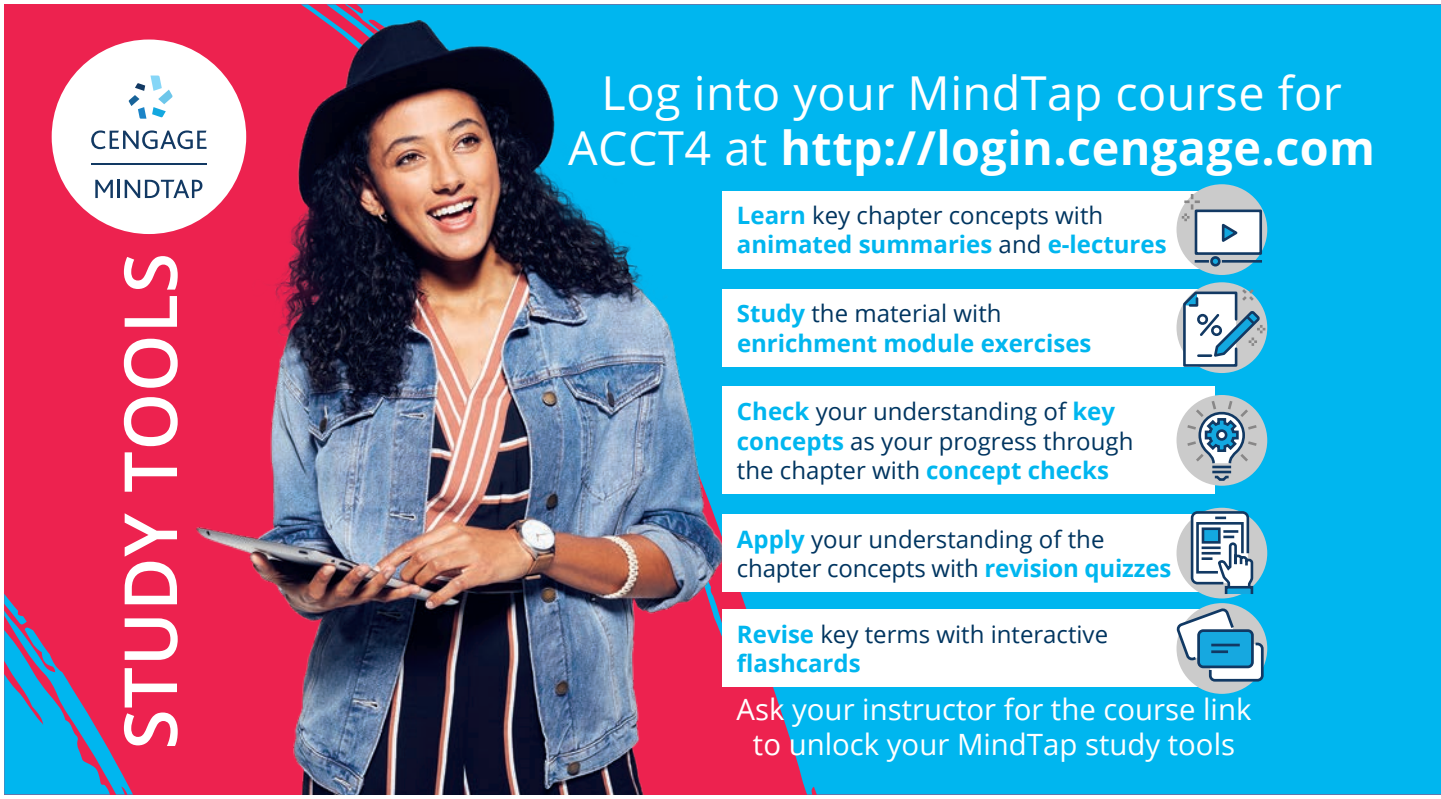
Governance information

CSL devotes seven 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'.[9]

The board of directors is the governing group of a company; the board selects and appoints the senior managers and makes the major strategic decisions. 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.

LEARN STUDY APPLY
MINDTAP Test your understanding with the revision quizzes for this chapter.

LEARN STUDY APPLY
MINDTAP Review this material with the e-lecture.



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EXERCISES

1 Miscellaneous terms

LO1, 2, 3, 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 Guidance to help accountants to produce unbiased financial statements.
d A form of business that is a separate legal entity, established by filing proper forms with ASIC.
e A report that attests to the fair presentation of a company's financial statements.
f The most common form of business.
g The rules that govern financial accounting.
h Information on role of the board and how it provides responsible leadership.

REQUIRED

Match each definition with one of the following terms:

- GAAP
- sole proprietorship
- Code of Ethics for Professional Accountants
- governance information
- notes to the financial statements
- partnership
- auditor's report
- company or corporation.

2 GAAP

LO2

On page 102 of CSL's 2020 *Annual Report* (see this book's appendix) the right-of-use asset is discussed.

- Why did CSL include this new kind of asset?
- What is a right-of-use asset?

3 Ethics

LO2, 3

With such comprehensive Generally Accepted Accounting Principles, why are ethical standards needed to supplement the guidance to accountants when preparing financial statements?

4 Classified balance sheet

LO4

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

Accounts receivable	$ 12 400
Sales	360 000
Inventory	26 300
Contributed equity	520 000
Accounts payable	19 240
Cash	34 660
Wages expense	13 500
Prepaid insurance	5 600
Equipment	427 000
Short-term investments	11 600

REQUIRED

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

5 Calculating gross profit

LO5

During the month, a retailer made $145 000 of sales, had $19 500 of operating expenses, and $104 500 in cost of sales. At the end of the month, the company had $30 000 of inventory (goods) on hand.

REQUIRED

Calculate the retailer's *gross* profit for the month.

6 Calculating profit after tax

LO5

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

REQUIRED

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

7 Horizontal and vertical analyses

LO6

The following information was taken from a recent income statement:

	Current month	Prior month
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 business more or less profitable in the current month? Do both the horizontal and vertical analyses indicate that? For your calculations, round percentages to the nearest whole per cent (e.g. 101% not 101.4%).

8 Horizontal analysis

LO4, 5

The horizontal analysis of an online business' sales shows a $34.2 million increase, which equated to a percentage change of 22.8 in yearly growth.

REQUIRED

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

a A sales promotion was highly successful.
b A major supplier was unable to deliver goods on time.

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c The business opened several new websites.
d The company lost market share to Amazon.
e The company's contributed equity increased by $34 million from the issue of shares.

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

9 Statement of changes in equity

LO7

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

Contributed equity, beginning of year	$220 600
Retained earnings, beginning of year	162 496
Additional contributed equity	100 000
Dividends	59 500
Profits (comprehensive income)	122 133

REQUIRED

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

10 Classified balance sheet

LO4

The following is a list of accounts:

a Mortgage payable (due in 15 years)
b Short-term investments
c Cash
d Prepaid rent
e Patents
f Contributed equity
g Trade and other receivables (receivable within 90 days)
h Accounts payable
i Inventory
j Buildings
k 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.

11 Classified balance sheet terms

LO4

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

Classifications:

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.

Descriptions:

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.

12 Balance sheet

LO4

Balance sheet			
	Zetian	Siniang	Zhenyi
ASSETS			
Current assets	$ 148 500	$ 135 000	$ 164 500
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	320 000	325 750	(g)
LIABILITIES			
Current liabilities	$ 15 500	$ 7 000	(h)
Non-current liabilities	145 000	(d)	165 500
Total liabilities	(b)	75 000	169 000
EQUITY			
Contributed equity	$ 55 000	(e)	$ 67 500
Retained earnings	(c)	105 000	(i)
Total liabilities and equity	330 000	(f)	(j)

REQUIRED

Fill in the 10 missing amounts (a) to (j) for the independent businesses.

13 Multi-step income statement

LO5

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

Advertising expense	$ 16 210
Cost of sales	183 910
Insurance expense	3 960
Interest expense	4 115
Interest revenue	6 055
Rent expense	41 410
Salaries expense	128 525
Sales	553 100
Electricity expense	5 600

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REQUIRED

Matthew pays a special small business company tax rate of 20 per cent (you can assume accounting profit equals taxable income). Prepare a multi-step income statement for the year ending 30 June.

14 Financial statement accounts

LO4, 5, 7

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):

	2023	2022
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 whole numbers (e.g. 10.6% becomes 11%).

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

LO4, 6

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

	2022	2021
Total assets	$85 000	$70 000
Total liabilities	24 000	28 000
Total equity	61 000	42 000

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

LO6

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

Use horizontal and/or vertical analyses to explain to the business owner why they should or should not be concerned about any particular aspect of the business' performance (round percentages to whole numbers; e.g. 9.5% to 10%). What other information may be considered more relevant to a question about 'performance'? Why?

18 Financial accounting terms

LO6, 8

The following are various terms and definitions from financial accounting.

Terms:

a Common size financial statement
b Notes to the financial statements
c Governance report
d Auditor's report
e Vertical analysis
f Horizontal analysis.

Definitions:

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 recently retired high-school English teachers what the two terms mean. You may use examples.

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PROBLEMS

19 Prepare a classified balance sheet

LO4

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

Bay Business Classified balance sheet For the year ending 30 June					
Assets			**Liabilities and shareholders' equity**		
Current assets			Current liabilities		
Buildings	$170 000		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		$234 000	Contributed equity	135 000	
Accounts receivable	$12 000		Bonds payable	40 000	
Land	20 000		Total shareholders' equity		225 000
Interest payable	14 000				
Total non-current assets		46 000			
Total assets		$280 000	Total liabilities and shareholders' equity		$280 000

REQUIRED

Prepare a correctly classified balance sheet.

20 Prepare a multi-step income statement

LO5

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

Chan Corporation income statement 30 June		
Sales		$330 000
Less Cost of sales		180 000
Less Accounts receivable		19 500
Gross profit		130 500
Less Interest expense	$15 000	
Less Selling and administration expense	13 000	
Less Wages expense	100 000	
Less Dividends	1 000	
Total other expenses		(129 000)
Plus Interest revenue		16 500
Less Accounts payable		(4 000)
Income before taxes		14 000
Income tax expense		(11 500)
Profit		2 500

REQUIRED

Prepare a corrected multi-step income statement. (You can assume all the account numbers are correct but some of the accounts are misclassified.)

21 Prepare and analyse the balance sheet

LO4, 6

The following comparative balance sheet items are available from Lim Limited as of 30 June 2024:

	2024	2023
Accounts payable	$ 75 500	$ 35 035
Accounts receivable	50 000	85 065

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	2024	2023
Bonds payable, due 30/06/2032	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 31/12/2024	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 (columns for both 2024 and 2023) classified balance sheet for Lim Limited.

b Perform horizontal and vertical analyses and interpret the results. Round percentages to the nearest per cent (e.g. 10.19% becomes 10%).

c Assume the same information above, except that in 2024 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

LO4, 5

The following items were taken from the financial statements of Wrights Company for 2022:

Accounts payable	$15 780
Accounts receivable	8 470
Advertising expense	4 200
Cash	16 080
Contributed equity	115 400
Cost of sales	141 250
Dividends	2 310
Equipment, net	145 420
Income tax expense	3 260
Insurance expense	4 680
Non-current liabilities	9 920
Prepaid insurance	5 970
Retained earnings, 01/01/2022	28 450
Salaries expense	17 420
Salaries payable	5 210
Sales	178 480
Electricity expense	4 180

REQUIRED

Prepare a multi-step income statement for the year ending 31 December 2022, and a classified balance sheet at 31 December 2022. Hint: you will need to 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:

	2023	2022
Advertising expense	$ 7 765	$ 9 789
Commissions expense	4 879	6 010
Cost of sales	148 596	158 896
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	195 950	206 569
Supplies expense	1 654	2 106
Salaries expense	19 320	21 012
Rent expense	7 634	7 856

REQUIRED

a Prepare a comparative (columns for both 2023 and 2022), multi-step income statement for Bugeja.

b Perform horizontal and vertical analyses and interpret the results. Round percentages to the nearest per cent (e.g. 10% not 9.6%).

c Assume the following changes: Cost of sales in 2023 is $192 470, and in 2022 is $115 670. Does this new information change previously made interpretations?

24 Using horizontal and vertical analyses

LO6

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

	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

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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 the nearest whole per cent.

CASES

25 APES 110 Code Ethics

LO3

Choose any one of the five fundamental principles of ethics for accountants from the APES 110 Code of Ethics for Professional Accountants. Using PowerPoint (or a similar presentation package), define the principle on one slide, explain with an example what may threaten the principle (two slides), and propose how an accountant might guard against such threats (two slides).

26 An ethical dilemma

LO3, 5

In your first job as an accountant the chief financial accountant has asked you to not include in cost of sales the cost of inventory still in the warehouse as being 'in our possession and therefore not an expense'. When you question if the sale associated with that inventory should not also be not included, you are told, 'Of course the sales is included. It is accrual accounting. We recognise sales for cash AND ON CREDIT – don't they teach you anything at university?' When you raise the matching principle, you are told, 'Is that where I match you with the unemployment agency?' If you do what is asked, what are the likely or possible consequences? If you do not do what is asked, what are the likely or possible consequences? What do you do?

27 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 usually 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 to the nearest per cent (e.g. 16% not 16.41%).

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 a 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?

28 Research and analysis

LO5, 6

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

REQUIRED

a Conduct a 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 to the closest per cent (e.g. 11% not 10.6%). What conclusions might you draw about the company's ability to earn a profit from its sales?

b Conduct a horizontal analysis of the company's total liabilities and total equity for the current year and vertical analysis for the same accounts for both the current and prior year. Round to the closest per cent. What conclusions can you draw about the company's changing business model?

c Google 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 the change in share price closest to? Do you think the change in the account that is closest to the change in share price is just a coincidence? If not, what might be the connection?

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3 RECORDING ACCOUNTING TRANSACTIONS

Learning Objectives

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

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, and prepare a trial balance, income statement, changes in equity and balance sheet.

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Take your study further with revision quizzes, e-lectures, animations, concept checks and more with each interactive chapter in **MindTap**.

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 small businesses to highly complex electronic systems in most large organisations. However different their forms, all accounting systems are built to capture and report the effects of a business' **transactions**.

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

transactions
Economic events that affect a business' assets, liabilities and/or equity.

A transaction is any economic event that affects a business' assets, liabilities or equity at the time of the event and is recognised by generally accepted accounting principles. 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 (e.g. an equipment purchase or the issuance of shares) are *external* transactions, while transactions within a business (the consumption of supplies) are *internal* transactions. An increase in the

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value of property could be seen as something that affects assets and equity, but until the property is sold or formally 'revalued' the increase is not recorded, but at this stage a transaction might be simply thought of as 'money into or out of the business'.

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

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.

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

Exhibit 3.1 AN EXAMPLE OF A CHART OF ACCOUNTS

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

Making it Real

CHART OF ACCOUNTS

Even a relatively small organisation like a university with a turnover of around $1 billion 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 that if money has been allocated to a particular project, like the development of a student learning activity, 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 number '1' indicates an asset account, the next number '1' is current assets' and the next '1' cash and cash equivalent, while the next two numbers may be a unit or activity within the organisation, so account numbers take on meaning for those using the chart of accounts regularly. The last account number starting in 11 is 11930 Interest receivable. Below are just a few of more than 22 000 accounts used by one Australian university.

11100	Cash – Parent
11105	Cash Clearing – CBA
11110	CBA – Operating Account
11111	CBA – Business On-Line Saver
11112	DO NOT USE – Bank Account – St George
11113	CBA – USD Account
11115	CBA – AusAid Account
11116	CBA – US Financial Aid
11117	CBA – Donations Account

Lacoste + Stevenson Architects

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iStock.com/David Hills

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

MINDTAP Review this material with the e-lecture.

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.

CSL Analysis

Look at CSL's balance sheet in this book's appendix 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, comprising 12 asset accounts, 11 liability accounts and three 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; therefore, 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:

MINDTAP Learn more by watching the animation: The Accounting Equation

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

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
The principle that 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 Vitals, a business that documents graduations, ceremonies or other significant 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.

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Videoing a customer's wedding

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Exhibit 3.2 TRANSACTION SUMMARY FOR VIDEO VITALS

TRANSACTION ANALYSIS

Transaction #1

After registering the business name, Video Vitals (ViVi), the owners deposited $15 000 into the business' bank account. Because ViVi 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, ViVi's contributed equity (or contributed capital) increases.

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

Transaction #2

ViVi 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	+ $1000	+ $ 9 000				
New bal.	$ 5 000	$1000	$ 9 000				$15 000
	$15 000			=	$ 0	+	$15 000

Transaction #3

ViVi receives a $1500 payment immediately after videoing a customer's wedding. Since ViVi 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, ViVi's equity increases. At this stage we record the revenue as an increase in retained earnings, both 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	$1000	$9 000				$15 000	$ 0
#3	+ $ 1500							+ $1500
New bal.	$6 500	$1000	$9 000				$15 000	$1500
	$16 500			=	$ 0	+	$16 500	

Transaction #4

ViVi receives a $2000 deposit from a customer to video a smoking ceremony. In this transaction, ViVi 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 ceremony or return the deposit). As a result, ViVi's 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.

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	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

ViVi paid $250 cash to have the business appear on Google Maps for the month. Because ViVi 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, ViVi's equity decreases. At this stage we record the expense as a decrease in retained earnings, both for simplicity and to emphasise that expenses decrease the value of the business to the owner.

	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

ViVi videos a dance competition, leaving a $3500 invoice (bill) with the customer. Because ViVi 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, ViVi 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

ViVi 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, ViVi receives equipment, so assets increase like Transaction #2, but unlike this ViVi promises to pay cash and interest in nine months instead of paying cash now. Therefore, the liabilities increase.

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	Assets				=	Liabilities		+	Equity	
	Cash	Accounts Receivable	Supplies	Equipment	=	Unearned Revenue	Notes Payable	+	Contributed Equity	Retained Earnings
Prior bal.	$8 250	$3 500	$1000	$ 9 000		$2 000	$ 0		$15 000	$4 750
#7				+ $ 9 000			+ $9 000			
New bal.	$8 250	$3 500	$1000	$18 000		$2 000	$9 000		$15 000	$4 750
	$30 750				=	$11000		+	$19 750	

Transaction #8

ViVi receives $3500 from the customer in payment of the invoice from Transaction #6. In this transaction, ViVi 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	$1000	$18 000		$2 000	$9 000		$15 000	$4 750
#8	+ $3 500	− $3 500								
New bal.	$11750	$ 0	$1000	$18 000		$2 000	$9 000		$15 000	$4 750
	$30 750				=	$11000		+	$19 750	

Transaction #9

ViVi 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.	$11750	$ 0	$1000	$18 000		$2 000	$9 000		$15 000	$ 4 750
#9	− $2 000									− $2 000
New bal.	$9 750	$ 0	$1000	$18 000		$2 000	$9 000		$15 000	$ 2 750
	$28 750				=	$11000		+	$17 750	

Transaction #10

At the end of the month, the owners of ViVi, Vivien and Vinci, 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	$1000	$18 000		$2 000	$9 000		$15 000	$2 750
#10	− $1500									− $1500
New bal.	$8 250	$ 0	$1000	$18 000		$2 000	$9 000		$15 000	$1250
	$27 250				=	$11000		+	$16 250	

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Summary of transactions

The 10 transactions of ViVi 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 (transactions #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	–3500			=			+		
#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	

LO3 The dual-entry accounting system

While the preceding analysis is an excellent way to understand and visualise the effects of accounting transactions, accounting information systems do not record transactions using pluses and minuses in a spreadsheet format– although it is accurate, it has limitations. 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*, meaning 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

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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
1500	
2 000	
	250
3 500	
	2 000
	1500
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	
5 000	250
300	
5 050	

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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	2 500
	150
	1800

To illustrate an equity account, suppose that a company has $34 000 of contributed equity. The company then issues additional shares for $10 000 and later buys back $6000 of shares. The original $34 000 balance appears on the credit side of the Contributed Equity T-account. Since the Contributed Equity account has a normal credit balance, the $10 000 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 $38 000.

Contributed Equity	
6 000	34 000
	10 000
	38 000

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 $115 000 in existing service revenue. The business then earns an additional $13 000 in revenue. Since the Service Revenue account has a normal credit balance, both the existing $115 000 balance and the $13 000 increase are shown on the credit side, resulting in a balance of $128 000.

Service Revenue	
	115 000
	13 000
	128 000

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	

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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**.

Exhibit 3.3 SUMMARY OF DEBIT AND CREDIT RULES

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

LO4 Recording transactions in the accounting system

MINDTAP Review this material with the e-lecture.

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

journal
A chronological record of transactions.

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**.

Exhibit 3.4 GENERAL JOURNAL FORM

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

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

ledger
A collection of accounts and their balances.

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 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.

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The trial balance

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

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**.

CSL Analysis

Look at CSL's income statement in this book's appendix. 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 11 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.

iStock.com/Yuri Arcurs

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

Exhibit 3.5 TRIAL BALANCE FORM

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

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.

MINDTAP Review this material with the e-lecture.

LO5 Comprehensive example: journal entries to financial statements

The following section uses the Video Vitals (ViVi) 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

ViVi 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

MINDTAP Learn more by watching the animation: Journalising and Posting

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Making it Real

ACCOUNTING IN THE CLOUD

Although we concentrate on a manual accounting system in this book, there are several popular computerised accounting information systems utilised by small to medium businesses. Five of the most popular are NetSuite, Reckon, QuickBooks, MYOB and Xero.

On its website, Xero lists 'Features to run every part of your business', including invoicing, inventory, payroll, banking, purchase orders, reporting, quoting, fixed assets and GST returns.

An accounting system is more than recording, summarising (as we have done above) and reporting (as we are about to do). For example, when wages are paid not only are Wages expenses increased and Cash decreased, but legally a record also needs to be kept of who was paid, how much, how much tax was deducted, and an accumulating record maintained so at the end of the financial year the Australian Taxation Office and the employee can be informed of total earnings, tax deducted and often half a dozen other things like superannuation paid, gifts made, any allowances earned and if any payments have been made attracting special tax treatments such as genuine redundancy and/or other lump sums. Much of the information would be directly accessible by the employee, but care must be taken so fellow employees' details cannot be also accessed. Most importantly, when wages are paid the money needs to be transferred from the business bank account to the employees' accounts. This can be done online manually with 'transfer' functions in most online banking, but for hundreds or thousands of employees this needs to be automated and very secure within the accounting system.

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

ViVi issued shares for $15 000.

STEP 1 What accounts are affected and how?

ViVi 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 needs 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

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

STEP 1 What accounts are affected and how?

ViVi 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	1000	
	Cash		10 000
	(Purchase cameras and supplies)		

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Assets	=	Liabilities	+	Equity
+9 000				
+1000				
–10 000				

STEP 4 Post the information to the ledger

Cash		Supplies		Equipment	
15 000	10 000	1000		9 000	
5 000		1000		9 000	

Transaction #3

ViVi 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	1500	
	Service Revenue		1500
	(Provide service to customer)		

Assets	=	Liabilities	+	Equity
+1500				+1500

STEP 4 Post the information to the ledger

Cash		Service Revenue	
15 000	10 000		1500
1500			
6 500			1500

Transaction #4

ViVi receives $2000 to video a ceremony at a future date.

STEP 1 What accounts are affected and how?

We receive cash, so the Cash account increases. Because ViVi 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	2 000	
	Unearned Revenue		2 000
	(Cash received in advance of providing service to customer)		

Assets	=	Liabilities	+	Equity
+2 000		+2 000		

STEP 4 Post the information to the ledger

Cash		Unearned Revenue	
15 000	10 000		2 000
1500			
2 000			
8 500			2 000

Transaction #5

ViVi 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 ViVi 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

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STEP 4 Post the information to the ledger

Cash		Advertising Expense	
15 000	10 000	250	
1500	250		
2 000			
8 250		250	

Transaction #6

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

STEP 1 What accounts are affected and how?

ViVi 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	3 500	
	Service Revenue		3 500
	(Provide service to customer on account)		

Assets	=	Liabilities	+	Equity
+3 500				+3 500

STEP 4 Post the information to the ledger

Accounts Receivable		Service Revenue	
3 500			1500
			3 500
3 500			5 000

Transaction #7

ViVi 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	9 000	
	Notes Payable		9 000
	(Purchase of a video camera with a note payable)		

Assets	=	Liabilities	+	Equity
+9 000		+9 000		

STEP 4 Post the information to the ledger

Equipment		Notes Payable	
9 000			9 000
9 000			
18 000			9 000

Transaction #8

ViVi 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	3 500	
	Accounts Receivable		3 500
	(Receive payment from customer)		

Assets	=	Liabilities	+	Equity
–3 500				
+3 500				

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STEP 4 Post the information to the ledger

Cash		Accounts Receivable	
15 000	10 000	3 500	3 500
1 500	250		
2 000			
3 500			
11 750		0	

Transaction #9

ViVi 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		2 000	
	Cash			2 000
	(Pay salaries to employees)			
	Assets	= Liabilities	+	Equity
	–2 000			–2 000

STEP 4 Post the information to the ledger

Cash		Salaries Expense	
15 000	10 000	2 000	
1 500	250		
2 000	2 000		
3 500			
9 750		2 000	

Transaction #10

ViVi 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		1500	
	Cash			1500
	(Pay dividends to owners)			
	Assets	= Liabilities	+	Equity
	–1500			–1500

STEP 4 Post the information to the ledger

Cash		Dividends	
15 000	10 000	1500	
1 500	250		
2 000	2 000		
3 500	1500		
8 250		1500	

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Not all transactions involve cash

Summary

After recording and posting the 10 transactions, ViVi's 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	1000	
	Cash		10 000
# 3	Cash	1500	
	Service Revenue		1500

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# 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	1500	
	Cash		1500

Let us assume May was the first month of operation.

General ledger

Cash

15 000	10 000
1500	250
2 000	2 000
3 500	1500
8 250	

Accounts Receivable

3 500	3 500
0	

Supplies

1000	
1000	

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

	1500
	3 500
	5 000

Advertising Expense

250	
250	

Salaries Expense

2 000	
2 000	

Dividends

1500	
1500	

Video Vitals
Trial balance
31 May

	Debit	Credit
Cash	$ 8 250	
Supplies	1000	
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	1500	
Total	$31 000	$31 000

Preparing a trial balance

MINDTAP Learn more by watching the animation: 'Preparing Financial Statements'

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 ViVi's ledger. As expected, the total debit balances of $31 000 equal the 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. ViVi's 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 Vitals
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

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

With net profit calculated, ViVi's 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:

MINDTAP Review this material with the e-lecture.

MINDTAP Test your understanding with the revision quizzes for this chapter.

Video Vitals Statement of changes in equity (retained earnings section) for the month ending 31 May	
Retained earnings, 1 May	$ 0
+ Profits	2 750
– Dividends	1500
Retained earnings, 31 May	$1250

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. ViVi's 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 Vitals Balance sheet at 31 May	
Cash	$8 250
Supplies	1000
Equipment	18 000
Total assets	$27 250
Unearned Revenue	$2 000
Notes Payable	9 000
Contributed Equity	15 000
Retained Earnings	1250
Total liabilities and equity	$27 250

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EXERCISES

1 Purpose of an accounting system

LO1

What is the purpose of an accounting system?

2 Chart of accounts

LO1

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

3 Chart of accounts

LO1

Which of the following accounts are liabilities?

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

4 Accounting transactions

LO1

Lewis Limited 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 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
vii paid to be featured on Facebook, receiving over one million likes
vii received a $10 000 deposit before any work has commenced.

REQUIRED

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

5 Analyse transactions

LO2

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

i received $12 700 for services performed during August
ii purchased $2400 of supplies on account (on credit)
iii paid employee salaries of $6560 for the first week of August
iv paid $1800 towards the previous purchase of supplies
v received $44 920 for services performed in July
vi paid $10 000 for equipment.

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).

6 T-accounts

LO3

Theodore reports the following asset and liability T-accounts:

Account #1		Account #2		Account #3	
$1000	$6000	$8400	$3250	$4280	$3600
$4000	$3000	$2120		$1660	$1120

REQUIRED

Determine the balance in each account and identify whether each account would more likely be an asset or a liability account. Why did you classify the account as asset or liability?

7 Posting transactions

LO3

Tia records the following transactions during November:

Date	Account title	Debit	Credit
1 Nov.	Accounts Receivable	9600	
	Service Revenue		9600
6 Nov.	Cash	5700	
	Accounts Receivable		5700
15 Nov.	Telephone Expense	750	
	Cash		750
26 Nov.	Inventory	7020	
	Accounts Payable		7020

REQUIRED

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

8 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	11000	
	Accounts Payable		11000

REQUIRED

Is this entry correct or not? Explain your answer.

9 Trial balance

LO4

Hildebrand Consulting provides the following incomplete trial balance:

Hildebrand Consulting Trial Balance 30 September		
	Debit	Credit
(a)	$ 8640	
Accounts Receivable	(b)	
Supplies	1230	
Notes Payable		$3000

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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).

10 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.

11 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.

12 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.

13 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 and Retained Earnings.
b What is Handywoman's profit for the month of January?

14 Recording transactions

LO3, 4, 5

REQUIRED

a Prepare journal entries for each transaction in question 13 (omitting explanations).
b Post the journal entries to their appropriate ledger (T) accounts
c Prepare a trial balance at 31 January.

15 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.

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16 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).

17 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.
6th 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.

18 Recording transactions

LO3, 4, 5

In the month of March, Peter Well Diggers 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).

19 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.

20 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?

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21 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	1700	
	Cash		1700
21	Cash	5 000	
	Notes Payable		5 000
24	Dividends	1500	
	Cash		1500
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

22 Recording transactions, posting to ledger

LO3, 4, 5

On 1 November, 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

a Prepare journal entries for each transaction, including explanations.

b Post to the relevant ledger account

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

LO2, 3, 4

Mariana and Ricardo 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, $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.

24 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.

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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.

25 Recording transactions

LO3, 4, 5

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

Howard Limited Trial balance 31 January		
	Debit	**Credit**
Cash	$ 5 600	
Accounts Receivable	12 890	
Supplies	9 235	
Prepaid Rent	1500	
Property, Plant & Equipment	30 500	
Accounts Payable		$ 7 625
Unearned Revenue		6 400
Notes Payable		15 000
Contributed Equity		25 000
Sales Revenue		9 650
Salaries Expense	2 300	
Electricity Expense	650	
Dividends	1000	
Totals	$63 675	$63 675

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

26 Read and interpret financial statements

LO3, 4, 5

Access CSL's (or another company as instructed) latest annual report (simply Google 'CSL 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 $123 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.

27 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 climb. 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. She provides a fabricated invoice as documentation. She states that without the rain the work would have been completed before year end and it is extra work the business will be doing at the beginning of the next financial year anyway. She asks you to do this as a personal favour to her.

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REQUIRED

a Identify the ethical issues associated with this scenario.
b What factors other than accounting should be considered?
c What are your alternatives?

28 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.

29 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 do not mean 'good' and/or 'bad'.

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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:

- **LO1** Explain how profit is measured and reported under the accrual and cash bases of accounting.
- **LO2** Identify the four major scenarios 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.

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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.

cash basis of accounting
An approach that records revenues when cash is received and records expenses when cash is paid.

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.

accrual basis of accounting
An approach that records revenues when they are earned and records expenses when they are incurred.

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:

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

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

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

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 do not 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 profit 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

MINDTAP Learn more by watching the animation: Income: Revenue or Gain?

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 business. A business that generates accrual income but never generates cash 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

Note 2 from CSL's Notes to the Financial Statements appears below. How can you tell from this note that CSL uses the accrual basis of accounting?

Note 2: Revenue and Expenses

Recognition and measurement of revenue

Revenue is recognised when the Group satisfies a performance obligation by transferring control of the promised good or service to a customer at an amount that reflects the consideration to which an entity expects to be entitled in exchange for the goods or services.

Further information about each source of revenue from contracts with customers and the criteria for recognition follows.

Sales: Revenue is earned (constrained by variable considerations, which include returns, discounts, rebates and allowances) from the sale of products and services. Sales are recognised when performance obligations are either satisfied over time or at a point in time. Generally the supply of product under a contract with a customer will represent the satisfaction of a performance obligation at a point in

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time, which is when control of the product passes to the customer, or generally upon shipment.[1]

Analysis:

The explanation provided by CSL is a standard 'text book' definition of revenue recognitional in accrual accounting.

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 *Annual Report 2019/2020* in this book's appendix), while in the reconciliation the difference between *net cash from operating activities* (cash profits of $2488 million) and *profits after income tax* (accrual profits of $2103 million) is almost $390 million. In the previous year the figure was $275 million, but in 2019 cash flow was lower not higher than profits. Cash basis income is higher than accrual basis income due primarily to increases to depreciation (an expense but not a cash outflow).

MINDTAP Review this material with the e-lecture.

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 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 business 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 business 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 business sells 12-month subscriptions to its monthly magazine. On 1 October, it receives $120 for 12 subscriptions. To record this transaction, the business 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 business 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:

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

Suppose further that the business prepares financial statements at the end of each month. As of 31 October, it 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 business receives cash before it provides a service, the business should always increase a liability account for the amount received. As it 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 because the financial performance during the month and the financial position is the same regardless of which account was credited when the cash was originally received.

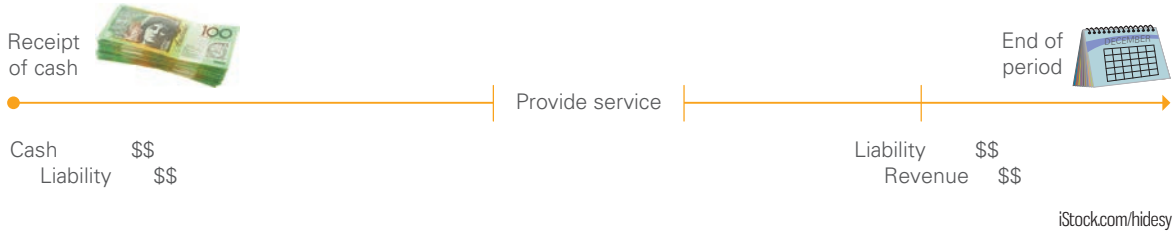
This situation is illustrated below. First, accept that the credit was made to the revenue account (this may not be the desirable way to record the transaction; however, it is important to your understanding of adjusting entries). To record this transaction (the other way), the business would record 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 business recorded it as a revenue (it may have believed the

Exhibit 4.1 **ENTRIES IN A DEFERRED REVENUE SCENARIO**



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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 business prepares financial statements at the end of each month. As of 31 October, it 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

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 business 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	1000	
	Service Revenue		1000
	(To record revenue earned during September)		

Assets	=	Liabilities	+	Equity
+1000				+1000

This adjusting 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		1000			1000
0		1000			1000

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.

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Making it Real

GIFT CARDS

Although gift cards have existed for many years, the 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).

You might assume that retailers record revenue when the gift card is sold. However, the transfer of goods (inventory) or services 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. Retail company Woolworths records unredeemed gift cards as Contract liabilities. In its *2020 Annual Report*, under Notes to the Consolidated Financial Statements: 3.8 Trade and other payables, it states:

> Contract liabilities represent consideration received for performance obligations not yet satisfied primarily relating to the Group's loyalty programs and gift cards. Substantially all of the revenue deferred at period end will be recognised in the following period.[2]

Contract liabilities were $250 million in 2020.

Jonathan Tyler

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

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

21 Sept.	Cash	1000	
	Accounts Receivable		1000
	(To record receipt of cash)		

Assets	=	Liabilities	+	Equity
+1000				
–1000				

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	
0	
1000	
1000	

Accounts Receivable	
1000	
	1000
0	

General rule

When a business earns a revenue before it receives cash, it 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 business 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 premises.

When a business pays for a resource before it uses or consumes it, they have a *deferred expense*. We use the term *deferred* because at the time of cash payment for the resource, the business has yet to use or consume the resource it is acquiring and therefore cannot record an expense in the accounting system.

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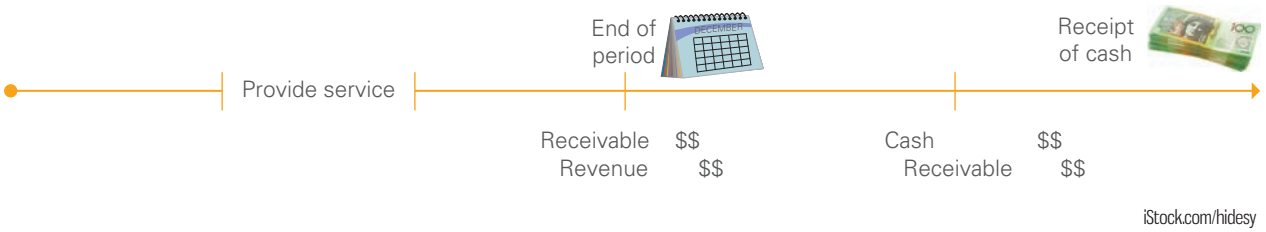
Exhibit 4.2 **ENTRIES IN AN ACCRUED REVENUE SCENARIO**



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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 business purchases a 12-month insurance policy for $3600. To record this transaction, it 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 it prepares financial statements at the end of April. As of 30 April, the business has been covered for two months and has therefore consumed two months of insurance, or $600 ([$3600 ÷ 12] × 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		Prepaid Insurance		Insurance Expense	
10 000				0	
	3 600	3 600	600	600	
6 400		3 000		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

Depreciation is another example of an expense where cash is paid before the expense is incurred. Depreciation is the process of spreading over their

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useful lives the cost of non-current assets such as equipment and buildings. For example, suppose that on 1 July a business 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 business prepares financial statements at the end of the financial year: 30 June the following year. As of 30 June, it 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 business 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	
40 000	
40 000	

Accumulated Depreciation	
	0
	10 000
	10 000

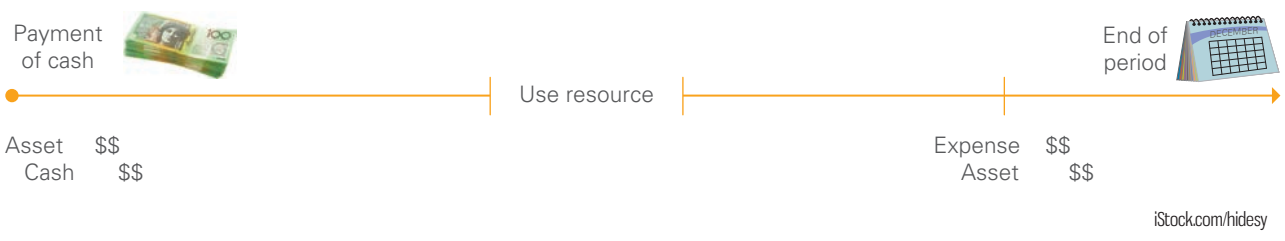
Depreciation Expense	
0	0
10 000	
10 000	

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 business pays cash before it incurs an expense, it should always increase an asset account for the amount paid. As the business 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**.

Exhibit 4.3 **ENTRIES FOR A DEFERRED EXPENSE SCENARIO**



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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 business. When this occurs, they have an *accrued expense*. An accrued expense is another name for a liability.

Salaries expense

To illustrate an accrued expense adjustment, suppose that a business' daily payroll is $1000. It pays its employees via direct deposit every Saturday for the work the employees have provided to the end of Friday. Suppose further that the business 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 business 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	
8 000	
8 000	

Salary Payable	
	5 000
	5 000

Salaries Expense	
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 it 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:

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 business 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 it prepares its financial statements on 30 November.

As of 30 November, the business 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:

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Cash		Interest Payable		Interest Expense	
1100					
			500	500	
1100			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		Interest Payable	
1100			500
	500	500	
600			0

General rule

When a business incurs an expense before it pays cash, it 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 it 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**.

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.

Ethics and adjusting entries

Recall that in Chapter 2 you were introduced to APES 110 *Code of Ethics for Professional Accountants* and one of the threats to compliance with the fundamental principles was self-interest.

The self-interest threat is that a financial or other interest will inappropriately influence an accountant's judgement or behaviour. The lowest possible estimate of an expense might be made if by doing so a performance target is met and a bonus paid. Most accountants working for a business will desire to keep their job, and one way to do that is to try to ensure the company does not go out of business. Accrual accounting and adjusting entries specifically require managers and accountants to make choices and estimates and exercise judgement

Exhibit 4.4 **ENTRIES IN AN ACCRUED EXPENSE SCENARIO**

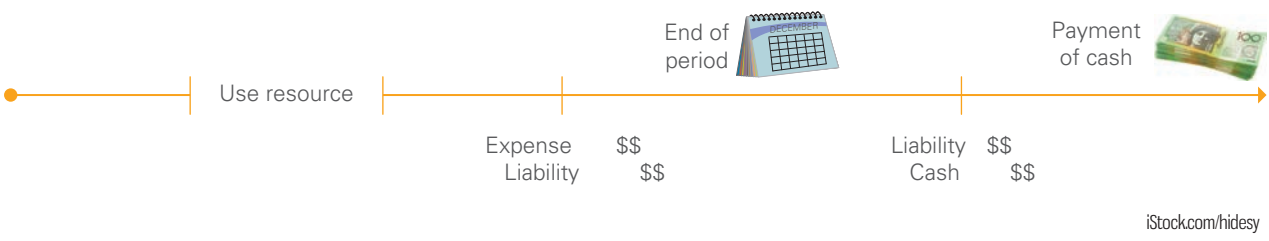

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Exhibit 4.5 SUMMARY OF ADJUSTING JOURNAL ENTRY SCENARIOS

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 $$ Cash $$

ethically. The examples discussed above are primarily the application of mathematics, because the choices and estimates are given. For depreciation, the estimated life and residual value were provided, but in a business, these need to be estimated and the depreciation method (straight line, reducing balance or units-of activity) needs to be chosen. Accountants should always exercise professional judgement to:

(i) Represent the facts accurately and completely in all material respects;

(ii) Describe clearly the true nature of business transactions or activities; and

(iii) Classify and record information in a timely and proper manner.[3]

MINDTAP Review this material with the e-lecture.

Making it Real

DEPRECIATING A LAPTOP

At the beginning of the university year you buy an excellent laptop fully loaded with software for $2000. Six months later you need to determine the depreciation for tax purposes. To do this you need to estimate how long the laptop will last and if it will be worth anything when you need to upgrade. The shorter the estimated life, the lower the residual value and an accelerated depreciation method will give you the highest tax deduction. There is no rule book that tells you what to do in every possible circumstance, but general guidelines as discussed above, experience and the guidance of colleagues will assist you. One way of thinking of what is ethical is would you be happy to be on the evening TV news justifying what you have done? (Though not social media, because no matter what you have done there is always someone with an opposing [and often irrational or illogical] opinion!)

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 Vitals (ViVi) example from Chapter 3 will be continued. As a result of the transactions entered into by ViVi 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 Vitals
Unadjusted trial balance
31 May

	Debit	Credit
Cash	$ 8 250	
Supplies	1000	
Equipment	18 000	
Unearned Revenue		$ 2 000
Notes Payable		9 000
Ordinary Shares		15 000
Service Revenue		5 000
Advertising Expense	250	
Salaries Expense	2 000	
Dividends	1500	
Totals	$31000	$31000

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In addition to these accounts and balances, the following information was available on 31 May:

1. On 31 May, ViVi filmed the retirement reception for a customer who paid $2000 on 10 May (see Transaction #4 in Chapter 3).
2. On 31 May, ViVi filmed the first night of a two-night local play. The second night will be filmed on 1 June, at which time ViVi will bill the customer. The local play customer has agreed to pay ViVi $1500 for each night.
3. After a physical count, ViVi determined that it had $650 of supplies remaining.
4. The interest rate for the note payable is 6 per cent (per annum).
5. ViVi 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

ViVi 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	2 000	
	Service Revenue		2 000
	(To record revenue earned)		

Assets	=	Liabilities	+	Equity
		–2 000		+2 000

The entry would be posted to the relevant T-accounts as follows:

Unearned Revenue	
	2 000
2 000	
	0

Service Revenue	
	5 000
	2 000
	7 000

Adjustment 2: Accrued revenue

ViVi has filmed one night of the local play. Therefore, it has earned revenue for one night: $1500. The trial balance does not reflect this because ViVi 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	
	5 000
	2 000
	1 500
	8 500

Adjustment 3: Deferred expense

ViVi has $650 in supplies on hand. However, the trial balance shows $1000 in the Supplies account, which is the amount that ViVi originally purchased. Therefore, ViVi 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

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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

ViVi 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, ViVi 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	
	0
	45
	45

Interest Expense	
0	
45	
45	

Adjustment 5: Deferred expense

ViVi 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	
18 000	
18 000	

Depreciation Expense	
0	
600	
600	

Accumulated Depreciation	
	0
	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 ViVi 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 Vitals Adjusted trial balance 31 May		
	Debit	**Credit**
Cash	$ 8 250	
Accounts Receivable	1500	
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	1500	
Totals	$33 145	$33 145

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Using a worksheet

An alternative approach to journalising the adjusting entries, posting these to the ledger and then extracting the adjusted trial balance is to use the original trial balance and add four columns on the right. In the last two columns you have the adjusted trial balance and in the middle two the adjustments. The adjustments are 'added to' or 'subtracted from' the original trial balance numbers in accordance to the standard debit and credit processes (e.g. a $100 Dr and a $300 Cr gives a $200 Cr) and the result appears below.

For adjustment (1) Unearned revenue, there is $2000 credit. In the trial balance, the adjustment of $2000 debit leaves zero in Unearned revenue in the adjusted trial balance. The $2000 credit adjustment goes to Service revenue. With the $5000 credit in the trial balance plus the $1500 credit from adjustment (2) we end up with $8500 in the adjusted trial balance. Note how closely this follows the ledger account process.

The worksheet used in accounting was the inspiration for electronic spreadsheets such as Excel, the most extensively used business software in the world.

Video Vitals 31 May

	Unadjusted Trial Bal		Adjustments		Adjusted Trial Bal	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash	8 250				8 250	
Accounts Receivable			(2) 1500		1500	
Supplies	1000			(3) 350	650	
Equipment	18 000				18 000	
Accumulated Depreciation				(5) 600		600
Unearned Revenue		2 000	(1) 2 000			0
Interest Payable				(4) 45		45
Notes Payable		9 000				9 000
Contributed Equity		15 000				15 000
Service Revenue		5 000		(1) 2 000		8 500
				(2) 1500		
Supplies Expense			(3) 350		350	
Interest Expense			(4) 45		45	
Depreciation Expense			(5) 600		600	
Advertising Expense	250				250	
Salaries Expense	2 000				2 000	
Dividends	1500				1500	
Totals	$31000	$31000	$4 495	$4 495	$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, ViVi's income statement for the month of May would appear as follows:

Video Vitals 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

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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, the retained earnings part of ViVi's 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. ViVi's 31 May adjusted trial balance shows no balance in beginning Retained Earnings and a $1500 balance in Dividends. Therefore, ViVi's statement of retained earnings for the month of May would appear as follows:

Video Vitals Statement of changes in retained earnings for the month ending 31 May	
Retained Earnings, 1 May	$ 0
Add: Profits	5 255
Less: Dividends	(1500)
Retained Earnings, 31 May	$ 3755

With retained earnings calculated, ViVi's balance sheet can be prepared. ViVi's 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, ViVi's 31 May balance sheet would appear as follows:

Video Vitals Balance sheet at 31 May		
Cash		$ 8250
Accounts Receivable		1500
Supplies		650
Equipment	$18 000	
Less: Accumulated Depreciation	600	17 400
Total Assets		$27 800
Interest Payable	$ 45	
Notes Payable	9 000	
Total Liabilities		$ 9045
Contributed Equity	$15 000	
Retained Earnings	3755	
Total Shareholders' Equity		18 755
Total Liabilities and Shareholders' Equity		$27 800

MINDTAP Review this material with the e-lecture.

Making it Real

EVALUATING STRATEGY

To determine whether any strategy is successful 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 they swim or run faster, jump higher or lift greater weights? For someone on a diet, have they 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 2017, CSL reported net profit after tax of $1739, while in 2020 it was $3064 (all in millions of Australian dollars). CSL's share price has gone from around $100 to $300 in the 42 months since 2017. 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 were implemented, but from the Excel graph below it appears investors (shareholders) see similar improvement since 2017. However, the share price is only part of the story; it does not show the $8.80 of dividends paid during the 42 months, but compared to the increase (capital gain) of $200 it might be seen as immaterial.

LO4 Closing process

closing process
The process of transferring all revenue, expense and dividend account balances to the Retained Earnings account.

After financial statements are prepared, companies conduct the closing process. The **closing process** is when all revenue, expense and

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temporary accounts
Accounts that accumulate balances only for the current period.

dividend account balances are transferred to the Retained Earnings account. This transfer is necessary for three reasons.

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.

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 ViVi's adjusted trial balance are shown in the following partial adjusted trial balance:

Video Vitals 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	1500	

ViVi 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	1500	
	Dividends		1500
	(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	
1500	
	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	
1500	
	1500
0	

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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 ViVi's 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. ViVi's post-closing trial balance is as follows:

Video Vitals Post-closing trial balance 31 May		
Cash	$ 8 250	
Accounts Receivable	1500	
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

MINDTAP Review this material with the e-lecture.

LO5 The accounting cycle: a summary

accounting cycle
The sequence of steps in which an accounting information system captures, processes and reports a company's accounting transactions during a period.

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 business' 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.

Exhibit 4.6 THE ACCOUNTING CYCLE

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 the closing entries
7	Prepare a post-closing trial balance

MINDTAP Test your understanding with the revision quizzes for this chapter.

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EXERCISES

1 Cash and accrual basis

LO1

Why use accrual accounting when cash accounting is simpler and easier?

2 Cash and accrual basis

LO1

During 2024, 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.

3 Adjusting journal entries

LO2, 3

Consider the following incomplete *adjusting* journal entries:

1	(a)	6 400	
	Accumulated Depreciation		6 500
2	Interest Expense	8 500	
	(b)		8 500
3	Accounts Receivable	17 000	
	(c)		17 000
4	(d)	6 750	
	Subscription Revenue		6 750
5	Unearned Interest Revenue	6 900	
	(e)		6 900

REQUIRED

Identify the likely account(s) that would complete each ***adjusting*** journal entry (a) to (e).

4 Adjusting journal entries

LO2

Consider the five entries in the preceding exercise.

REQUIRED

Identify each entry as an accrued expense, an accrued revenue, a deferred expense or a deferred revenue.

5 Adjusting journal entry – expense

LO2, 3

Wonder World Ltd pays its one-year insurance policy of $24 000 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 Wonder World would make during October (receipt of cash) and on 31 December.

6 Adjusting journal entry – revenue

LO2, 3

Leopard Legal agrees to represent Lucy in court for a speeding fine. The firm charges a flat fee of $200 per hour and always completes the service before billing the client. The firm completes the service on 16 April and bills Lucy on 15 May for 10 hours of work. 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 Show the T-accounts with the adjusting journal entry posted to them.

c If the adjustment was not made, what would the effect be on reported profits?

7 Adjusting journal entry – expense

LO2, 3

On 1 March, Mustafa borrows $124 000 from Northern Lights Bank on a short-term loan. Interest is paid after three months and the annual interest rate is 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.

8 Adjusting journal entry errors

LO2, 3

Talia, 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 Commissions earned but not yet received have been overlooked.

d Wages were last recorded six days before the end of the financial period.

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.

9 Calculate expenses and revenues

LO2, 3

The current- and prior-year balance sheets of ALM show the following account balances:

	Current year	Prior year
Supplies	$4 000	$6 500
Unearned Revenue	8 400	8 000

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During the current year, ALM purchased $13 300 of supplies and received $8700 of cash for services to be performed later.

REQUIRED

Using ledger accounts, determine ALM's supplies expense and service revenue for the current year.

10 Adjusting journal entries

LO2, 3

Kristina Kool provides the following selected information from its trial balance and adjusted trial balance at 31 October:

Kristina Kool
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 Kristina must have made at 31 October.

11 Prepare financial statements from trial balance

LO3

The adjusted trial balance for Davina Departments is as follows:

Davina Departments
Adjusted trial balance
30 June

	Debit	Credit
Cash	$3 500	
Accounts Receivable	400	
Supplies	1500	
Accounts Payable		$ 650
Salaries Payable		1900
Retained Earnings		1600
Service Revenue		5 450
Salaries Expense	3 700	
Supplies Expense	500	
Total	$9 600	$9 600

REQUIRED

Prepare Davina's income statement and statement of retained earnings for the month of June and the balance sheet at 30 June.

12 Ethics and adjusting journal entries

LO2

Ethics are not important when we look at adjusting entries as the process is all about mathematical calculations. Discuss.

13 Closing entries

LO4

Rebecca Lawn and Order (RLO) earns and records $90 000 of revenues and $72 000 of expenses during the month. RLO also pays and records $3000 in dividends for the month.

REQUIRED

Prepare RLO's closing entries for the month and determine the net change in retained earnings because of those entries.

14 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.

15 Adjusting journal entries

LO2, 3

In its first year of operations, Sameera 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, Sameera has earned $5000 of the $15 000 in transaction (iv) and has incurred but not recorded $800 of electricity and $500 of salaries expense. Sameera 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.

16 Adjusting journal entries

LO2, 3

Lewis' annual accounting period ends on 30 June 2022. Marshall prepares financial statements and therefore ***makes adjusting journal entries semi-annually*** (every six months), and the following information applies to all necessary adjusting journal entries at 30 June 2022:

a Lewis carries the following two insurance policies:

Policy	Purchase date	Policy length	Cost at purchase date
i	1 July 2020	5 years	$50 000
ii	1 July 2021	2 years	$20 000

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b On 1 January 2022, office supplies on hand were $1800. In the past six months, additional supplies of $2700 were purchased, and a count revealed $2150 available supplies at 30 June 2022.

c Lewis owns one building:

Cost	Useful life	Annual depreciation
$150 000	25	$6 000

d Lewis decides to rent out a portion of its building. On 1 June 2022, Lewis received a prepayment of $5700 for rent for the months of June, July and August.

e Lewis' staff consists of seven employees. Each employee earns a total of $1200 a week for a five-day week and is paid each Monday for the previous week's work. Note that 30 June 2022 falls on Thursday.

REQUIRED

Prepare all necessary adjusting entries at 30 June 2022 (remembering adjustments were made on 31 December 2021).

17 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 (six 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?

18 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	$ 1200	
Depreciation Expense	10 750	
Interest Expense	560	
Salaries Expense	5 000	
Supplies Expense	2 500	
Utilities Expense	2 080	
Dividends	1000	

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?

19 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

REQUIRED

Match accounting terms (i) to (viii) 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 The final step in the accounting cycle whereby all revenue, expense and dividend account balances are transferred to the Retained Earnings account.

h Revenue is earned before cash is received.

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PROBLEMS

20 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 2023 income statement and additional data from 2022 and 2023 are as follows:

Golden Gloria Time Ltd Cash-Basis Income statement for the year ending 31 December 2023	
Revenues	$54 000
Expenses	35 000
Profit	$19 000

Additional information:

	31 December 2022	31 December 2023
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 2022 were collected and paid in 2023. All deferred revenues and expenses as of 31 December 2022 were earned and used in 2023.

REQUIRED

Convert revenues and expenses from the cash basis to the accrual basis and recalculate income. Briefly explain why each adjustment is made.

21 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 Tran Spa 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 Amy received an advertising bill to be paid next month, $400.
vii Assume the trial balance was last adjusted on 31 July.

REQUIRED

a Prepare all necessary adjusting entries for the month of September and prepare an adjusted trial balance as of 30 August.
b Use a worksheet to prepare the adjusted trial balance.

22 Adjusting entries and closing entries

LO2, 3, 4

The unadjusted and adjusted trial balances of Lee Learning are as follows:

Lee Learning Trial balance 30 June				
	Unadjusted		Adjusted	
	Debit	Credit	Debit	Credit
Cash	$ 17 000		$ 17 000	
Accounts Receivable	16 500		21 500	
Prepaid Insurance	9 200		6 800	
Supplies	1 200		400	
Buildings	666 000		666 000	
Land	649 600		649 600	
Accumulated Depreciation		$ 30 000		$ 63 000
Accounts Payable		19 900		22 000
Salaries Payable		0		3 600
Unearned Revenue		24 100		20 100
Notes Payable		150 000		150 000
Contributed Capital		1 000 000		1 000 000

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Retained Earnings		69 200		34 600
Service Revenue		97 100		106 100
Advertising Expense	15 600		15 600	
Depreciation Expense			33 000	
Insurance Expense			2 400	
Salaries Expense	15 200		18 800	
Supplies Expense			800	
Electricity Expense			2 100	
Totals	$1 390 000	$1 390 300	$1 434 000	$1 434 000

REQUIRED

a Compare the two trial balances and re-create 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)?

23 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	$ 6 900	
Accounts Receivable	4 500	
Prepaid Rent	6 300	
Supplies	2 250	
Equipment	18 000	
Accumulated Depreciation		$ 900
Unearned Revenue		1 500
Notes Payable		10 000
Contributed Capital		8 000
Retained Earnings, 1 April		12 200
Service Revenue		11 200
Advertising Expense	650	
Depreciation Expense	900	
Interest Expense	150	
Rent Expense	2 100	
Salaries Expense	1 700	
Dividends	350	
Totals	$43 800	$43 800

Additional Information:

i Rent is $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 were 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 (yes, this is important).

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 and/or use a worksheet to prepare the adjusted trial balance.

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.

24 The accounting cycle

LO2, 3, 4, 5

Zhao Zoo was founded on 1 April and entered into the following transactions:

1st Issued shares to shareholders in exchange for $100 000 cash.

1st Purchased equipment for $65 000.

1st Purchased supplies for $2000.

1st Purchased a one-year insurance policy to be applied evenly over the next period, to be paid next month – $3700

1st Took out a loan from First Bank for $100 000.

1st Hired two new employees on salary of $4000 a month each.

6th Received prepayment for a contracted job to be performed in May – $22 500.

8th Billed customers for services provided – $42 000.

12th Paid to have an ad placed on website during April – $7000.

18th Billed customers for services provided – $34 000.

24th Paid dividends to shareholders – $5000.

30th Prepaid the next six months of rent starting with May – $18 000.

Additional information:

i April depreciation for the equipment is $1085.

ii Interest on the loan from the bank is paid annually at a rate of 6 per cent.

iii Some of the prepaid insurance has expired.

iv Employees' salaries earned during April are to be paid in May.

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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.

CASES

25 Locate and understand accounting information

LO1, 2

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?

26 Communication activity

LO1, 2, 5

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

Send an SMS (keep it polite) explaining the importance of adjusting entries and the potential misstatements that can result from their exclusion.

27 Communication activity

LO1, 2, 3, 5

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.

28 Ethics and adjusting entries

LO2, 5

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. CEO Richard Yalda recently approached the chief accountant, Sadek Ahmed, 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?

29 Ethics and adjusting entries

LO2, 5

You are the group service manager with a major company. After the service is provided, the customer pays. At the end of each year, you are required to estimate how much of each outstanding service contract has been completed. At year-end, you have $1 million of outstanding contracts. You estimate that you have completed (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 might report earned. Explain why you would report those amounts (remembering what is not earned this period will be earned in the next).

a Your compensation is based on performance and you are $550 000 short of your target before your estimate.
b Your compensation is based on performance and you are $450 000 short of your target before your estimate.
c Your compensation is based on your group's performance, and while you have met your target before your estimate, the group needs $600 000 to meet the group target.
d Discuss the ethics of your decision in answering (c) above in the context of self-interest and group interest.

MINDTAP Download the Enrichment Modules for further practice

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5 CASH AND INTERNAL CONTROLS

This chapter examines the concepts of internal control and how those concepts affect the accounting especially 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. Cyber-attacks emphasise the need for internal controls; we will look at this under Cash controls.

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:

- **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.

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LEARN STUDY APPLY

LO1 Internal control

In May 2019, two former managers at CBA were separately charged with fraud after allegedly misappropriating close to half a million dollars from internal accounts. 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] Headlines in June 2020 like 'Jail time for Ballina woman who stole $180,000 from her employer over six years' and 'Greed and "dodgy and dishonest" perks land WA Health contractors in jail for corruption' are not uncommon. Other cases, like the eight-year jail sentence for the accountant who took nearly $20 million over a two-year period from (former) retailer Clive Peters, illustrate the importance of good controls over cash.

Over many years, there have been numerous widely publicised accounting frauds. Major corporations such as HIH Insurance in Australia and Enron in the USA 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. In the USA, the Sarbanes–Oxley Act of 2002 is probably even better known and went further in requiring corporations to include in their annual reports to

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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.

shareholders an 'internal control report'. 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:

- the company's operations are effective and efficient (including that assets, especially cash, are not misappropriated)
- the company's financial reporting is reliable (which involves safeguarding financial records)
- the company is complying with applicable laws and regulations (chiefly labour and environmental).

All businesses 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

To illustrate management's responsibility for internal control, **Exhibit 5.1** contains an excerpt from the Auditing Standard ASA 265 *Communicating Deficiencies in Internal Control to Those Charged with Governance and Management*. While it is not the external auditor's responsibility, if deficiencies are discovered they need to be reported to the company.

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.

Exhibit 5.1 **AUDITING STANDARD ASA 265 *COMMUNICATING DEFICIENCIES IN INTERNAL CONTROL TO THOSE CHARGED WITH GOVERNANCE AND MANAGEMENT***

Scope of this Auditing Standard

1. This Auditing Standard deals with the auditor's responsibility to communicate appropriately to those charged with governance and management deficiencies in internal control that the auditor has identified in an audit of a financial report. This Auditing Standard does not impose additional responsibilities on the auditor regarding obtaining an understanding of internal control and designing and performing tests of controls over and above the requirements of ASA 315 and ASA 330. ASA 260 establishes further requirements and provides guidance regarding the auditor's responsibility to communicate with those charged with governance in relation to the audit.[2]

Review this material with the e-lecture.

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.

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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 this book's appendix. What was the auditor's opinion regarding the effectiveness of CSL's internal control?

Analysis:

In Australia, unlike the USA, the auditor does not express an opinion on the adequacy of the internal control system. In their 'Independent Auditor's Report to the Members of CSL Limited', they state:

> 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.[3]

Risk assessment

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.

risk assessment
The identification and analysis of the risks that threaten the achievement of organisational objectives.

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, these 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 *Annual Report 2019/2020*, under 'Our Material Risks', six are specifically listed:

- patient safety and product quality
- product innovation and competition
- supply, capacity and operations
- market access
- people and culture
- privacy and cybersecurity[4].

Low-risk ratings may be applied because the impact on the organisation is likely to be insignificant (e.g. a mine worker taking a pocket full of coal or iron ore) or there is little likelihood of the event occurring (e.g. a meteorite destroying a company's warehouse), so they generally do not warrant serious concern. In contrast, significant risks (e.g. a mine worker taking diamonds or gold) and those with a higher likelihood of occurring (e.g. rain damage to unprotected computers) demand considerable attention. One of the constant risks for most organisations is the risk of an employee stealing cash. This requires more attention. That attention comes in the form of control activities.

Control activities

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:

control activities
The policies and procedures established to address the risks that threaten the achievement of organisational objectives.

- 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.

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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 that ideally is sequentially numbered so that the sale will neither be lost nor recorded twice. The invoice might also require the employee's password (or facial recognition) 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 better 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
The need for an 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.

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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 the nature of 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. At 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.

MINDTAP Review this material with the e-lecture.

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 transfers of cash, either physically by cards or online, have their own controls: passwords, PINs, SMS authorisation codes, security questions, etc. During the 2020 pandemic the Australian Government allowed people to withdraw up to $10 000 from their superannuation accounts. There have been many reports of money being withdrawn by third parties and transferred overseas so it is either untraceable or inaccessible. Information about superannuation accounts was often obtained through phishing emails. In 2009, the Australian Taxation Office was unable to collect tax from TPG after the 'Myer float' because $2.4 billion was transferred overseas, beyond Australian jurisdiction. While this is not an example of theft it demonstrates how easy it is to transfer large sums of money without the need for large suitcases.

Two of the controls of cash are bank reconciliations and petty cash funds. Each is discussed in the following sections.

Bank reconciliations

MINDTAP Learn more by watching the animation: Bank Reconciliation

Most businesses keep the majority of their cash in a bank. This in itself is a good control procedure because it limits opportunities for physical theft, but does present opportunities for electronic theft. 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 can compare these records to verify its cash balance. This comparison is called a bank reconciliation.

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:

bank reconciliation
The process of reconciling the differences between the cash balance on a bank statement and the cash balance in a business' records.

1. Reconcile the bank balance to the actual cash balance.
2. Reconcile the business' book (ledger account) 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.

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

deposit in transit
A deposit that has been made by the business but has not cleared the bank as of the statement date.

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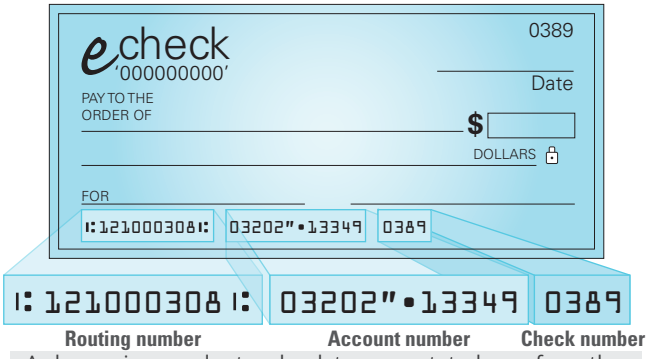
Records of cash are kept by both the business and the bank

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 cheques are becoming less common. For property sales in Australia, a 10 per cent deposit is still generally made by cheque, which allows the cheque to be deposited if the sale is confirmed, or returned (or destroyed) if the sale falls through.

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. Some banks also offer digital cheque systems

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 that are 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.

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Bank reconciliation example

To illustrate a bank reconciliation, suppose that Ehuang Enterprises maintains an account with Murray River Bank. At the end of March, Ehuang shows a cash balance of $14 567 while Murray River shows a balance of $9880. 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 Ehuang's customers and a $50 monthly service fee. Ehuang had not recorded either of these two items.

Resolution: The collection is a credit memorandum. Add it to Ehuang's cash balance. The fee is a debit memorandum. Subtract it from Ehuang'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. Ehuang had not recorded this item.

Resolution: The NSF cheque is a debit memorandum because no cash was received from the customer's cheque that Ehuang deposited earlier. Subtract it from Ehuang's cash balance.

5 A cheque clearing the bank for $400 was erroneously recorded in Ehuang's records at $450. The cheque was written to pay off an open account payable.

Resolution: Ehuang recorded $50 too much for the cheque. Therefore, Ehuang's cash is understated by $50. Add the $50 to Ehuang's cash balance.

Ehuang'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:

Ehuang Bank reconciliation 31 March		
Balance per bank statement		$9 880
Add deposits in transit:		
30 March	$6 450	
31 March	1236	7 686
Deduct outstanding cheques:		
No. 1987	$ 589	
No. 1991	2 080	2 669
Actual cash balance		$14 897
Balance per business records		$14 567
Add:		
Collection of receivable	$ 550	
Error by Ehuang	50	600
Deduct:		
Monthly service charge	$ 50	
NSF cheque	220	270
Actual cash balance		$14 897

Both reconciliations correctly show an actual cash balance of $14 897. 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

Ehuang 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

Ehuang corrects the error made when the $400 cheque was recorded for $450. This requires Ehuang to add back to both cash and accounts payable.

31 Mar.	Cash	50	
	Accounts Payable		50
	(To correct error)		

Assets	=	Liabilities	+	Equity
+50		+50		

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Entry #3: Monthly service charge

Ehuang 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

Ehuang 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. Ehuang 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.

petty cash fund
An amount of cash kept on hand to pay for minor expenditures.

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.

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 $300 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	300	
	Cash		300
	(To establish $300 petty cash fund)		

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.

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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

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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	$300
Less: cash remaining in the fund	45
Cash requested to replenish fund	$255
Receipts in the fund:	
Postage	$ 75
Office supplies	141
Miscellaneous	39
Total receipts	$255

The report shows that the fund needs $255 to be fully replenished. It also shows that there are receipts totalling $255. As a result, Tran would cash a cheque for $85 to replenish the fund and record expenses as follows:

31 May	Postage Expense	75	
	Supplies Expense	141	
	Miscellaneous Expense	39	
	Cash		255
	(To replenish petty cash fund and record various expenses)		
	Assets = Liabilities + Equity		
	–255		–75
			–141
			–39

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. This 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.

MINDTAP Review this material with the e-lecture.

LO4 Reporting cash and cash equivalents

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.

cash
A medium of exchange.

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 2020 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.[5]

Cash and cash equivalents are reported on the balance sheet usually as the first current asset.

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CSL Analysis

CSL's balance sheet in this book's appendix reports Cash and Cash Equivalents of $1194.4 million in 2020. What has happened to the balance over the year?

Analysis:

CSL's Cash and Cash Equivalents have increased from $657.8 million in 2019 to $1194.4 million in 2020; a substantial increase of $533.6 million or more than 80 per cent.

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Most cash is held in bank deposits, not notes and coins

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 this book's appendix, horizontal and vertical analyses of cash result in the following:

Horizontal analysis	
Cash and Cash Equivalents increase 2019 to 2020	$536 million (81%)

Vertical analysis	2020	2019
Cash and Cash Equivalents	7.7%	5.3%

The horizontal analysis shows that CSL's cash increased significantly, by $536 million in 2020, which equals an 81 per cent increase over the prior year. The vertical analysis shows that cash made up less than 8 per cent of total assets in 2020, but significantly more than in 2019. This was a large percentage increase in cash from the prior year, because total assets increased over 25 per cent for the year cash did make up an even larger percentage of total assets.

While the preceding analysis shows that CSL's cash increased during 2020, it does not indicate how cash increased. To find this out, financial statement users need to 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 $2.5 billion in cash from operations during 2020, which is over 50 per cent more than in 2019.

Investing activities include the buying and selling of revenue-generating assets. CSL reports a net cash outflow of almost $1.4 billion from investing activities in 2020. The majority of that outflow was to pay for property, plant and equipment (PPE).

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Financing activities include the raising and repayment of capital through debt and equity. During 2020, CSL both repaid loans ($1.4 billion) and borrowed ($1.65 billion) for an increase of over $250 million in borrowings. The majority of the net outflow from financing activities was to pay dividends (almost $900 million). From the bottom of the cash flow statement you can see cash over the period increased by almost $480 million. CSL does not tell us why it decided to increase its cash holdings, but it does state that 'liquidity and refinancing risks are not significant',[6] which may be due to the large cash holdings. Historically, CSL has used excess cash to buy back shares; however, due to the COVID-19 pandemic, CSL may be preserving its cash to grow the business through the development and/or manufacture of a vaccine.

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 in the past 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 this book's appendix, 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 2020 and 2019 is calculated as follows (rounded to the closest $ million):

Free cash flow		
	2020	2019
Cash Flows from Operating Activities	$ 2 488	$ 1644
Less: Capital Expenditure (investing activities)	(1367)	(1287)
Less: Dividends	(883)	(807)
Equals: Free Cash Flow	$ 238	$ (450)

As a growing business, CSL may be expected to increase its cash. The balance sheet shows an increase of $536 million during the year ($658 million to $1194 million), yet there is less than half this as 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 over $250 million ($1653 million – $1399 million), compared with almost $290 million in 2019. The cash flow statement shows the free cash flows and the increase in cash came entirely from operations and the major users were dividends and purchasing PPE.

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Exhibit 5.2 CSL'S 2020 CONSOLIDATED STATEMENT OF CASH FLOWS

Consolidated Statement of Cash Flows

For the Year Ended 30 June 2020

The format of the consolidated statement of cash flows was changed to the indirect method of presentation for the cash flows from operating activities. The prior comparative period was changed to align to the new format, which is informative in showing the impact of changes in the balance sheet on cash flows.

		Consolidated Entity	
	Notes	2020 US$m	2019 US$m
Cash Flows from Operating Activities			
Profit before income tax expense		**2,572.7**	2,341.1
Adjustments for:			
Depreciation and amortisation		**419.8**	375.5
Inventory provisions		**189.5**	191.3
Share-based payments expense		**81.0**	52.0
Bad debt provision		**10.1**	(3.5)
Finance costs		**142.4**	127.8
Loss (gain) on disposal of property, plant and equipment		**0.5**	(0.8)
Changes in operating assets and liabilities:			
Decrease/(increase) in trade and other receivables		**124.9**	(367.1)
Increase in inventories		**(686.0)**	(558.3)
Increase in trade and other payables		**157.8**	136.2
(Decrease)/increase in provisions and other		**(27.0)**	18.6
Income tax paid		**(355.0)**	(527.7)
Finance costs paid		**(142.4)**	(140.7)
Net cash inflow from operating activities		**2,488.3**	1,644.4
Cash flows from Investing Activities			
Payments for property, plant and equipment		**(1,206.8)**	(1,117.6)
Payments for intangible assets		**(160.8)**	(167.2)
Payment for business acquisition (Net of cash acquired)		**(17.8)**	–
Receipts/(payments) from other investing activities		**18.7**	(2.5)
Net cash outflow from investing activities		**(1,366.7)**	(1,287.3)
Cash flows from Financing Activities			
Proceeds from issue of shares		**42.0**	31.8
Dividends paid	10	**(883.1)**	(806.8)
Proceeds from borrowings	11	**1,652.7**	898.5
Repayment of borrowings	11	**(1,399.2)**	(610.2)
Principal payments of AASB 16 lease liabilities		**(54.7)**	–
Other financing activities		**(0.4)**	(4.8)
Net cash (outflow)/inflow from financing activities		**(642.7)**	(491.5)
Net (decrease)/increase in cash and cash equivalents		**478.9**	(134.4)
Cash and cash equivalents at the beginning of the financial year		**657.8**	812.7

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	Notes	Consolidated Entity 2020 US$m	2019 US$m
Exchange rate variations on foreign cash and cash equivalent balances		**14.6**	(20.5)
Cash and cash equivalents at the end of the period		**1,151.3**	657.8
Reconciliation of cash and cash equivalents			
Cash and cash equivalents at the end of the period as shown in the statement of cash flows is reconciled as follows:			
Cash and cash equivalents		**1,194.4**	657.8
Bank overdrafts		**(43.1)**	–
Cash and cash equivalents at the end of the period		**1,151.3**	657.8

The consolidated statement of cash flows should be read in conjunction with the accompanying notes.

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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, so 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.

In the 2020 COVID-19 pandemic in Australia, the Federal Government provided $10 000 grants to sole traders and JobKeeper payments to businesses to allow them to pay employees when less or no cash was coming in.

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Cash is critical to any successful business

MINDTAP Test your understanding with the revision quizzes for this chapter.

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EXERCISES

1 Internal control

LO1

Considering opportunity, incentive (pressure and motivation) and rationalisation, why might employees take cash?

2 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.
iii A junior accountant is put in charge of petty cash.
iv A bank reconciliation is prepared.
v You are required to have your supervisor authorise purchases over $100.

REQUIRED

Which element of internal control activities does each of the above scenarios best relate to?

3 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.

4 Internal control activities

LO1, 2

Cruttenden 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.

5 Bank reconciliation items

LO3

The following items may or may not be relevant to a company's bank reconciliation:

i The company incorrectly records a deposit as $430, but it is correctly cleared by the bank for $340.
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 $28 monthly service fee.
iv A $2750 deposit made by the company is not on the bank statement.
v Payment received from a customer is shown on the bank statement but not in the company's cash account.

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.

6 Petty cash

LO3

On 1 June, Bhavna Branch establishes 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

a Prepare all necessary journal entries for the month of June.
b Prepare the journal entry to replenish the fund if only $94.20 was in the fund on 30 June.

7 Calculate free cash flow

LO5

During the year, a company had cash flow from operations of $720 000. During the year the company also bought a new piece of equipment for $210 000, and $90 000 of dividends were paid.

REQUIRED

What is the company's free cash flow for the year?

8 Evaluate cash

LO5

Mariana Manufacturing and Mining strives to keep a 'consistent' amount of cash on hand. Its latest balance sheet (in millions) provides the following information:

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Cash and cash equivalents, current year	$ 9 930
Cash and cash equivalents, prior year	10 024
Total assets, current year	140 700
Total assets, prior year	135 728

REQUIRED

Using horizontal and vertical analyses, determine whether Mariana is maintaining a 'consistent' amount of cash. Round percentages to one decimal point (e.g. 9.4%).

9 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 shareholding in CSL
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 NSF
x $100 one ounce Australian gold coins.

REQUIRED

For each of the stated items, indicate whether the item should be included or excluded from the cash and cash equivalents total.

10 Internal control activities

LO1, 2

Bina'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.

11 Bank reconciliation items

LO2

Wajeeha'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 Wajeeha'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 Wajeeha's 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.

12 Bank reconciliation items

LO3

Consider the following two independent situations:

i A company's 30 April bank reconciliation shows deposits in transit of $400. The company's books indicate deposits of $2420 for the month of May, but the bank statement indicates deposits of $2225 for May.
ii A company's 30 April bank reconciliation indicates outstanding cheques of $450. The company's books indicate disbursements of $1845 for the month of May, but the bank statement shows $2040 of disbursements for May.

REQUIRED

a For situation (i), determine deposits in transit at 31 May.
b For situation (ii), determine outstanding cheques at 31 May.

13 Prepare bank reconciliation

LO3

Chaman Company's 30 June bank statement shows a balance of $19 250. Chaman's books show a 30 June cash balance of $18 100. Chaman also has the following information:

i deposits in transit as of 30 June, $2500
ii outstanding cheques as of 30 June, $3900
iii service charge reported on the bank statement, $150
iv non-sufficient funds cheque returned with bank statement, $2500
v interest on note receivable collected by the bank, $1800.

REQUIRED

Prepare Chaman'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?

14 Prepare bank reconciliation

LO3

Chia-Ling Company's 30 September bank statement (all figures in thousands) shows a balance of $5381. Chai-Ling's 30 September cash balance is $4580. Chai-Ling also has the following information:

i deposits made but not appearing on the September bank statement, $550
ii cheque written but not appearing on the September bank statement, $1220

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iii one cheque written for the purchase of supplies was erroneously recorded for $89 but appears on the bank statement as $98
iv monthly service charges listed on the bank statement are $23. Chai-Ling had already recorded the effect of $13 of those charges
v a customer payment for a $150 receivable was collected by the bank but not yet recorded by Chai-Ling.

REQUIRED

Prepare Chia-Ling's bank reconciliation as of 30 September and also prepare any necessary journal entries resulting from the reconciliation.

15 Bank reconciliation items

LO3

A company makes the following journal entries after preparing a bank reconciliation:

i	Accounts Receivable	6 900	
	Cash		6 900
ii	Cash	9 200	
	Accounts Payable		9 200
iii	Cash	5 000	
	Accounts Receivable		5 000
iv	Service Charge Expense	200	
	Cash		200

REQUIRED

Explain the likely circumstance behind each of the entries.

16 Petty cash

LO3

On 1 September, Saul's Consultants establishes a petty cash fund for $700. On 30 September, the fund's custodian prepares a report showing $360 in cash remaining and receipts of $109.50 for miscellaneous items, $112.50 for postage and $122 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.

17 Petty cash

LO3

On 1 January, Teddy Trading 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.

18 Evaluate cash

LO5

In a recent annual report, Lucy's Learning reported the following account balances:

Cash and cash equivalents, current year	$ 5 259
Cash and cash equivalents, prior year	2 871
Total assets, current year	213 759
Cash flows from operating activities	25 959
Capital expenditures	5 502
Dividends	4 764

REQUIRED

a Prepare horizontal and vertical analyses of Lucy'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

19 Bank reconciliation and internal control evaluation

LO1, 2, 3

Theodore Textile Trading (TTT) prepares monthly bank reconciliations of the company's cheque account balance. An extract of the bank statement of TTT showing the last entries for May 2022 indicated the following:

		Withdrawals	Deposits	Balance
May 28	NSF – cheque No. 399	1000		6 767
May 29	DEPOSIT – Franc' s Fabrics		2 700	9 467
May 31	Service Charges	30		9 437
May 31	Interest		40	9 477

On investigation it was found:

- The NSF cheque No. 399 was a customer's cheque previously deposited into the bank account that bounced due to insufficient funds in the customer' s bank account.
- The deposit from Franc's Fabrics related to the collection of a note ($2500) and the related interest ($200). A previous adjusting entry had recorded the interest revenue as a receivable at the time it was earned. This $2700 cash deposit had not been recorded in the accounting records of TTT.
- The May 31 Interest deposit had not been recorded in the accounting records of TTT.

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An analysis of TTT's accounting records revealed the following items that appeared in the accounts of TTC but did not appear in the bank statement for May:

- Cheque number #5489 for $650 paid to Electric Energy for an electricity bill and cheque number #5490 for $230 paid to Officegear Supplies for stationery.
- A cheque for $1780 received from Talia Lewis and a cheque for $1560 received from GeoTex. Both were for textile designing services and were deposited into the bank on 30 May.

Additionally, it was found that cheque #5488 correctly appeared as a withdrawal of $780 in the bank statement but was incorrectly recorded as a cash disbursement of $870 in the accounting records of TTT. The cheque was to pay an open (existing) account payable.

The closing balance of the cheque account per TTT's accounting records on 31 May was $10 137.

REQUIRED

a Prepare a bank reconciliation in proper form for 31 May 2022.
b Record the transactions (adjustments) TTT will need as a result of this bank reconciliation process.
c What amount would TTT report as the cash balance in the statement of financial position (balance sheet) at 31 May 2022?
d How does the preparation of bank reconciliations aid in internal control?

20 Prepare bank reconciliation

LO3

Hui-ju Hardware Company's bank statement for the month of June and its general ledger cash account at the end of June are as follows:

Bank Statement				
Date	**Disbursements**		**Deposits**	**Other**	**Balance**
1 June					$8 250
3	# 300	$1220			7 030
4			$2 100		9 130
6	# 303	365			8 765
9	# 304	840			7 925
15	# 302	900			7 025
16	# 307	1400			5 625
18	# 305	2 000			3 625
18			3 500		7 125
19	# 308	1620			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 June	Balance	9 130	5 June # 301	790
17 June		3 500	6 June # 302	900
24 June		2 220	6 June # 303	365
27 June		5 100	8 June # 304	840
30 June		1750	11 June # 305	2 000
			15 June # 306	1180
			16 June # 307	1400
			18 June # 308	1260
			20 June # 309	150
			22 June # 310	560
			23 June # 311	355
			26 June # 312	3 650

Other information: Hui-Ju had one deposit in transit of $2100 and one outstanding cheque (#300) of $1220 at 31 May. All cancelled cheque amounts agree with the bank statement.

REQUIRED

a Identify all deposits in transit and outstanding cheques at 30 June.
b Prepare a bank reconciliation for the month of June.
c Prepare all journal entries required by Hui-ju at 30 June. 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.

21 Evaluate cash

LO5

In their recent annual reports, Jasmine and Lily reported the following account balances:

	Jasmine	Lily
Cash and cash equivalents, 30/06/22	$ 1880	1427
Cash and cash equivalents, 30/06/21	2 087	1086
Total assets	26 275	62 169
Cash flows from operating activities	3 744	4 779
Capital expenditures	1014	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%).

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CASES

22 Research and analysis

LO5

Access the latest copy of CSL's annual report by doing an internet search for 'CSL Annual Report' (annual reports are usually available towards the end of September for 30 June end of financial years).

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.

23 Written communication

LO1, 2

You start a business with Samir, a cosplaying clothing retailer business. You plan on implementing the internal controls that you have learnt from university, but Samir is worried about its effectiveness. Samir 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.

24 Written communication

LO1, 2

You are the owner of Valuable Vintage, an indie retail business close to the university. You have a shop 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 do not relate to the main purpose of the business, which is to 'sell stuff'.

REQUIRED

Prepare a memo that can be given to employees explaining the importance of the control environment in general and control activities specifically. Use no more than one A4 page and set it out as best you can to encourage staff to read it and take notice. (Consider font size, headings, underlining, spaces, etc.)

25 Ethics

LO1, 2, 3

You have found an apparent weakness in the internal control (IC) over cash because there has been a large amount of cash ($420 000) taken. Further investigation reveals the cash has been returned even before you knew it was taken. Following up you are able to determine the cash was taken and returned by someone who reports directly to you. They are immediately dismissed. In writing your report recommending the internal controls be strengthened to prevent this occurring again, you are horrified to find it is not an IC weakness but that you had signed the authorisation of the withdrawal, although you cannot recall doing so. What should you do and why?

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6 RECEIVABLES

This chapter examines the accounting for receivables. Specifically, the chapter focuses on how companies account for the recording (including the GST payable), 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:

- **LO1** Describe the recording and reporting of receivables, including GST.
- **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.

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LEARN STUDY APPLY

LO1 Accounts receivable: recording, GST and reporting

A receivable represents a claim on the assets of another entity. The most common type of receivable is an account receivable. We first came across accounts receivables in Chapter 2. An **account receivable**, you may remember, is an amount owed by a customer who has purchased the business' product or service. Sometimes these receivables are referred to as trade debtors or because they arise from the trade of the business.

account receivable
An amount owed by a customer who has purchased the business' goods or services.

Recording accounts receivable and GST

Receivables are recorded at the time of the sale or the provision of the service. To illustrate, suppose that on 2 June, Howard Limited sells four smartphones for $250 each to a customer on account (or on credit). Howard would record the revenue and receivable

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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.

2 June	Accounts Receivable			1000	
	Sales				1000
	(To record sale on account)				
	Assets	=	Liabilities	+	Equity
	+1000				+1000

Both assets and equity (revenue) increase because of this sale. When Howard collects the receivable, it will increase the cash and eliminate the receivable.

In Australia, as in many countries, a government-imposed **Goods and Services Tax (GST)** is added to most products and services (the major exemptions in Australia are unprocessed food, health, education and financial services). In Australia the GST rate is 10 per cent (in New Zealand it is 15%, UK has a similar Value Added Tax [VAT] of 20%, in China it is mostly 16%, and in India the VAT rate varies from state to state, as does Sales Tax in the USA).

Goods and Services Tax (GST)
A value-added tax charged on most sales but also able to be claimed back on purchases.

GST is a value-added tax that is charged on most sales but is also able to be claimed back on purchases – thus it is value added. If a retailer buys a computer for $500 before GST and sells it for $600 plus GST, the $50 of GST on the purchase ($500 × 10%) is claimed back and the customer is charged $60 ($600 × 10%). The retailer then sends the Australian Taxation Office $10 ($60 – $50) or 10 per cent on the $100 gross profit or 'value added'.

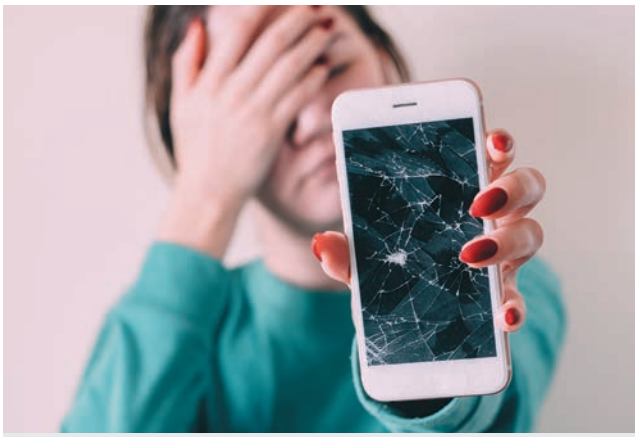
In the above example, Howard would charge the customer $1000 plus 10 per cent GST – an extra $100 that is collected on behalf of the Australian Taxation Office (ATO).

2 June	Accounts Receivable			1100	
	Sales				1000
	GST Payable				100
	(To record sale on account plus GST)				
	Assets	=	Liabilities	+	Equity
	+1100		+100		+1000

At the end of the period (monthly for larger businesses, and quarter or yearly for smaller businesses) the GST is sent to the ATO (Dr GST Payable, Cr Cash). As we will discover in Chapter 7, any GST paid (on goods and services purchased) is offset (subtracted from) the GST Payable and the net amount paid (or claimed back when GST paid [GST Receivable] is greater). We will ignore GST from now on as it overly complicates each of the remaining transactions (e.g. below there would $25 of GST Payable to be reduced [debited] and the customer would owe $275 less [credit Accounts Receivable $275 = $250 + $25]).

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 4 June the customer returns one of the four smartphones because it has a cracked screen. Howard would record the return with the following entry.

4 June	Sales Returns and Allowances			250	
	Accounts Receivable				250
	(To record sales return)				
	Assets	=	Liabilities	+	Equity
	–250				–250



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Damaged goods need to be returned

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

The 'Allowance' part of Sales Returns and Allowances would apply if the customer was willing

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to keep the phone (they may be able to repair it themselves) but would seek a reduction in price, say $100. The entry would be the same as above except the amount $100 not $250.

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 net sales. A business uses this account to maintain a record of returns each period. Like the Sales account, Sales Returns and Allowances is a temporary account, so the balance is closed (zeroed out) at the end of each period (this was covered in 'Closing process' in 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 2/10, n/30, meaning that customers can receive a 2 per cent discount if they pay within 10 days of the invoice. To illustrate, suppose that Howard grants terms of 2/10, n/30. On 12 June the customer pays the remaining $750 bill. By qualifying for a 2 per cent discount, the customer saves $15 ($750 × 2%) and pays only $735. Howard would record the receipt of payment as follows:

12 June	Cash		735		
	Sales Discounts		15		
	Accounts Receivable				750
	(To record payment with discount)				
	Assets	=	Liabilities	+	Equity
	+735				–15
	–750				

The entry increases Cash for the $735 payment and decreases Accounts Receivable for the full $750 balance. The difference, which equals the discount of $15 for timely payment, goes into the Sales Discounts account. Like Sales Returns and Allowances, the Sales Discounts account is considered a contra-revenue account (according to the Accounting Standard AASB 118) 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. In the past sales discount may have been treated 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 and GST payable

Because GST Payable will be paid within one year it is reported as a current liability. On the other side of the balance sheet, accounts receivables are expected to be collected within a year (hopefully within a month or two), so they are classified and reported as current assets. However, unfortunately not all receivables are normally collected. Some customers do not pay their bills, some customers have financial hardships, some relocate without paying while others simply refuse to pay. As a result, businesses must follow the principle of prudence and report their accounts receivable at net realisable value.

Net realisable value is the amount of cash that is expected to be collected from the total (or gross) accounts receivable balance. It is calculated by subtracting from gross receivables the amount that is not expected to be collected. For example, from $2000 of receivables we do not expect to collect $50, so net realisable value is $1950. The amount that is not expected to be collected goes by many names: provision for impairment loss, allowance for bad debts, allowance for doubtful debts, or even 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.

MINDTAP Review this material with the e-lecture.

CSL Analysis

Look at CSL's balance sheet in this book's appendix. Can you tell whether the company's receivables are reported at net realisable value?

Analysis:

CSL simply reports: 'Trade and other receivables'. The Accounts Receivable paragraph in Note 15 states:

> Trade and other receivables, and contract assets 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.
>
> A provision for expected credit loss (ECL) is recognised in accordance with AASB 9. ECLs are based on the difference between the contractual

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cash flows due in accordance with the contract and all the cash flows that the Group expects to receive.... When a trade receivable for which a provision for expected credit loss has been recognised becomes uncollectible in a subsequent period, it is written off against the provision.[1]

Note 15 shows that in 2020 Trade receivables were $1121 million (contract assets $191 million) less provision for expected credit loss of $25 million. (In 2019, the figures were $1274 million, $182 million and $18 million, respectively.)

Therefore, receivables are stated at net realisable value.

To illustrate the reporting of receivables, consider the following receivables balances from Note 9 of CPA Australia's *Annual Report 2019* (at 31 December 2019):

	2019 $'000s	2018 $'000s
Current Assets		
Trade and other receivables	2 578	2 852
Loss allowance	(49)	(42)
	2 529	2 810

In determining the recoverability of a trade receivable, the Group considers any change in the credit quality of the trade receivable from the date credit was initially granted up to the end of the reporting period. Trade receivables consist of many members and customers, spread across diverse industries and geographical areas. The Group does not have any significant credit risk exposure to any single party or group of counter parties having similar characteristics and the maximum exposure to credit risk is equal to the value of our receivables.[2]

In contrast, Chartered Accountants Australia and New Zealand, in Note 7 of its *Annual Report 2020*, 'Trade and other receivables', lists the following:

	2020 $'000s	2019 $'000s
Current		
Trade receivables	21632	15 803
Allowance for expected credit loss	(2 182)	(846)
	19 450	15 342

Accounting Policies Trade receivables are recognised and carried at the original invoice amount less an allowance for expected credit loss ('ECL'). For trade receivables, the Group applies a simplified approach in calculating ECLs. The Group does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date.[3]

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 a **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 may not find a company's bad debt expense ('expected credit loss') listed separately. If you do, it is likely bad news because the amount was large enough to warrant individual reporting. Banks usually report their bad debts expense – the loans that are not repaid by customers – but this is a little different from what we are doing here.

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.

Canstar Blue reports on discounts in the energy industry: 'A pay on time energy discount rewards you for your punctuality by giving you a set amount off your electricity bill for paying the full amount owing before the due date. Depending on your provider and plan, the conditions of your pay on time discount can vary significantly.'[4]

An example of a substantial pay-on-time discount is as follows:

- Due date by direct debit: 09 December 2020.
- Total amount if paid after due date: $562.75.
- Discounted amount if paid by due date: $419.97.

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.

Direct write-off method

Under the **direct write-off method**, bad debt expense is recorded when it is determined that a receivable is uncollectible and it is removed from the records. The receivable is eliminated or 'written off' the accounting records, and bad debt expense is recorded for the amount of the receivable.

direct write-off method
The method in which bad debt expense is recorded when it is determined that a receivable is uncollectible and it is removed from the records.

To illustrate, suppose that Chan makes a $4000 credit sale during October 2021 to Baron. In April 2022, Chan determines that it will be unable to collect

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from Baron. Chan would make the following entries to reflect this activity:

Oct. 2021	Accounts Receivable	4 000	
	Sales		4 000
	(To record sale on account)		

Assets	=	Liabilities	+	Equity
+4 000				–4 000

Apr. 2022	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 Accounts 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 go against 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 2021, but the expense is recorded in 2022. 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 goes against the matching principle, generally accepted accounting principles (GAAP) discourage its use. The only exception is when bad debt expense is immaterial to the business. For most businesses, 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 2021 is not consistent with 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 in the same period as the related revenue is recognised, and another to write off receivables when they become uncollectible.

allowance method
The 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, at the end of each accounting period, we need to record bad debt expense. 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 setting 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 it is believed will ultimately be uncollectible. As described earlier, the Allowance 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 Singh Sports makes credit sales of $800 000 during 2021. Based on experience, Singh estimates that $16 000 of these sales will not be collected. Singh would therefore make the following entries to record this activity:

During 2021	Accounts Receivable	800 000	
	Sales		800 000
	(To record sales on account)		

Assets	=	Liabilities	+	Equity
+800 000				+800 000

End of 2021	Bad Debt Expense	16 000	
	Allowance for Doubtful Debts		16 000
	(To record bad debt expense)		

Assets	=	Liabilities	+	Equity
–16 000				–16 000

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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 2021 sales. It also reduces Singh'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 this chapter.

Recording a write-off

Regardless of the method used to account for uncollectible receivables, a business must write off a receivable when it is deemed to be uncollectible. Under the direct write-off method bad debt expense is recorded 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 Singh Sports determines in 2022 that a $5000 receivable from Yang Bai is uncollectible and decides to write it off the books. Singh would make the following entry:

2022	Allowance for Doubtful Debts	5 000			
	Accounts Receivable				5 000
	(To record write-off)				
	Assets	=	Liabilities	+	Equity
	–5 000				
	+5 000				

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

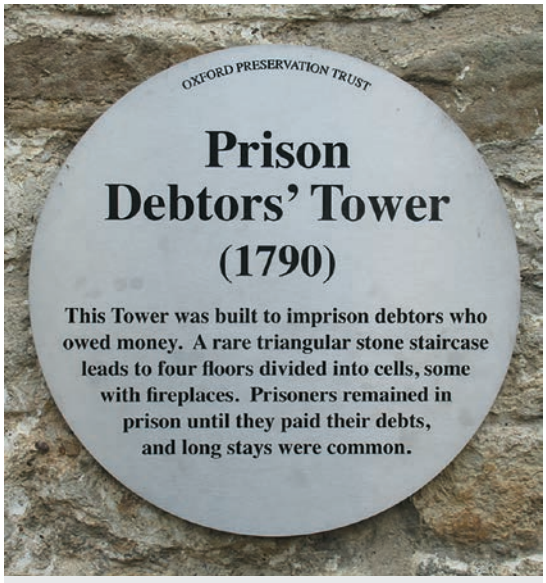
Making it Real

COLLECTING DEBTS

Most businesses 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. During an economic recession, customer payments may slow 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, a business may be forced to alter their collections policies. Traditionally, buyers with delinquent accounts would have their credit slashed or cancelled. In recessions, a business needs to consider alternative approaches that 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 be unable to pay their payables and could be forced into bankruptcy from lack of liquidity.

Before allowing a customer to buy on credit, a check is normally made of the customer's credit rating. You can get a copy of your credit report for free from a credit reporting body (CRB) by visiting https://moneysmart.gov.au/managing-debt/credit-scores-and-credit-reports, or searching online 'MoneySmart get your credit score for free'.



Jonathan Tyler

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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or profit/loss. More specifically, the entry has no effect on Singh'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. Singh now knows that Bai will not pay, but Singh had already allowed for that possibility. Therefore, Singh'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 Bai pays the bill in full later during 2022. When this payment occurs, the following two entries are made:

2022	Accounts Receivable	5 000	
	Allowance for Doubtful Debts		5 000
	(To reverse the original write-off)		
	Cash	5 000	
	Accounts Receivable		5 000
	(To collect the receivable)		

Assets	=	Liabilities	+	Equity
+5 000				
–5 000				

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.

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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 using the allowance method.

When estimating bad debt expense, a business may use one of two different approaches:

- percentage-of-sales approach
- percentage-of-receivables approach.

Both approaches use information such as general economic conditions, interest rates, past experience, industry norms or trends and current customer credit ratings to make the estimate as accurate as possible.

Percentage-of-sales approach

percentage-of-sales approach
The 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 a percentage, usually based on past experience adjusted for changes in the economy and the businesses' specific circumstances. For example, suppose a business with $250 000 of sales in 2022 estimates that it will not collect 2 per cent of those sales. The estimate for bad debt expense at the end of 2022 would be $5000 ($250 000 × 2%). The entry to record the estimate is shown below.

End of 2022	Bad Debt Expense	5 000	
	Allowance for Doubtful Debts		5 000
	(To record bad debt expense)		

Assets	=	Liabilities	+	Equity
–5 000				–5 000

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
The 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 an estimated percentage. 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 a receivables balance of $25 000 at the end of 2022. Based on past experience, we expect that 1 per cent of the receivables balance will be uncollectible. As a result, the balance in the allowance account at year-end should be 1 per cent of receivables, or a $250 credit balance ($25 000 × 1%). The next step is to make the adjustment.

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Since the allowance method for bad debts relies on estimates, the 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 a credit, it does not require a correction to 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 $250 credit requires a $150 credit entry. Therefore, bad debt expense for the period is $150. This is illustrated as follows:

Allowance for Bad Debts		
	100	Existing balance
	150	Adjustment required = Bad Debt Expense
	250	Desired balance ($25 000 × 1%)

End of 2022	Bad Debt Expense	150		
	Allowance for Doubtful Debts			150
	(To record bad debt expense)			
	Assets	= Liabilities	+	Equity
	–150			–150

In contrast, assume that the allowance account has a $50 debit balance prior to adjustment. In that case, the necessary adjustment is a $300 credit entry. Therefore, bad debt expense for the period is $300. This is illustrated as follows:

Allowance for Bad Debts		
50		Existing balance
	300	Adjustment required = Bad Debt Expense
	250	Desired balance ($25 000 × 1%)

End of 2022	Bad Debt Expense	300		
	Allowance for Doubtful Debts			300
	(To record bad debt expense)			
	Assets	= Liabilities	+	Equity
	–300			–300

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 the prior period allowance estimate and write-offs.

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 may be grouped together in 30-day increments. An increasing uncollectible percentage to older receivables is then applied.

ageing schedule
A listing of accounts receivable by their ages.

To illustrate, we can prepare an ageing schedule at the end of 2022, as shown in **Exhibit 6.1**. Of the receivables, $66 000 are reported and we break 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.

Assuming in the above we have a credit balance of $870 in the allowance account prior to recording bad debt expense, we 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 2022	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.

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Exhibit 6.1 **AGEING SCHEDULE OF ACCOUNTS RECEIVABLE**

	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	1000	1200	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	$ 1185	$ 1350	$ 4 057

* The percentages will depend on the business' past experience, their credit policy and current economic conditions.

CA ANZ's *Annual Report 2020* outlines its ageing schedule, and shows that of the debts that are not past due, they expect to collect 99.9 per cent, while those over one year past due they expect to collect only 16.4 per cent.

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 businesses 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 are behind in paying ('have past due receivables').

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The loss allowance as at 30 June 2020 and 30 June 2019 was determined as follows for both trade receivables and contract assets (in $'000):							
30 June 2020	**Current (not past due)**	**30 to 90 days past due**	**91 to 180 days past due**	**181 to 270 days past due**	**271 to 365 days past due**	**More than 365 days past due**	**Total**
Expected loss rate	0.1%	3.9%	15.6%	26.6%	55.2%	83.6%	
Gross carrying amount – trade receivables	16,738	1,192	544	412	1,303	1,443	21,632
Loss allowance	14	47	85	110	719	1,207	2,182

Source: CA ANZ, 'Trade and Other Receivables', *Annual Report 2020*, Part II, p. 18.

LO4 Analysing accounts receivable

Any investor, creditor or manager of a business should be interested in how well a business manages its accounts receivable. Because a receivable is an uncollected sale, the main question that should be asked of a business 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 2020 CA ANZ provided more insight into its receivables.

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:

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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

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

Given the CA ANZ's financial information in **Exhibit 6.2**, horizontal and vertical analyses of accounts receivable and revenue result in the following calculations. Note that the net realisable value of receivables, as reported on the statement of financial position, is used in the calculations.

Exhibit 6.2 **ACCOUNT BALANCES FROM THE CA ANZ *ANNUAL REPORT 2020***

Source	Accounts	2020 $000	2019 $000
Statement of Profit and Loss	Total revenue	141 033	138 290
	Expected credit loss	1336	276
Statement of Financial Position	Trade and Other Receivables	19 819	15 342
	Total Assets	229 204	227 545

Source: CA ANZ, *Annual Report 2020*, https://www.charteredaccountantsanz.com/news-and-analysis/news/2020-annual-report.

Horizontal analysis		
	Dollar change	**Percentage change**
Trade and Other Receivables	19 819 – 15 342 = 4 477	4 477 ÷ 15 342 = 29%
Revenue	141 033 – 138 290 = 2 743	2 743 ÷ 138 290 = 2%
Vertical analysis		
	2020	**2019**
Trade and Other Receivables	19 819 ÷ 229 240 = 8.6%	15 342 ÷ 227 545 = 6.7%
Bad Debts Expense (Expected credit loss)	1 336 ÷ 141 033 = 0.9%	276 ÷ 138 290 = 0.2%

The calculations show a large increase in the CA ANZ's receivables. Horizontal analysis shows the receivables balance increased by almost $4.5 million or 29 per cent in 2020. Horizontal analysis of revenue shows growth in sales of under $3 million, only 2 per cent, during the year, so it does not appear that receivables are much higher than the modest increase in revenue might suggest. Vertical analysis also shows that receivables as a percentage of assets were higher: 8.6 per cent in 2020 to 6.7 per cent in 2019. Bad debts, while small and definitely not a major expense (less than 1% of revenue), have grown more than fourfold (from 0.2% to 0.9%). CA ANZ in Note 2 of its *Annual Report 2020* emphasises the judgement made in estimating bad debts: 'All judgements, estimates and assumptions made are believed to be reasonable based on the most current set of circumstances available to management. Actual results may differ under different conditions from when the judgments, estimates and assumptions were made. Significant judgments, estimates and assumptions, including the impacts of COVID-19 on expected credit loss.'[5]

Receivables turnover ratio

The preceding analysis indicates the impact of the pandemic on CA ANZ. Another perspective to assess the management of receivables is to calculate the receivables turnover ratio. The **receivables turnover ratio** compares credit sales during a period to its average receivables balance during that period. It is calculated as follows:

receivables turnover ratio
A comparison of credit sales to receivables that measures a company's ability to generate and collect receivables.

CA ANZ Annual Report 2020

CA ANZ, 'Trade and Other Receivables', Annual Report 2020, cover image

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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 (i.e., those where 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 of Total operating revenue was on credit, the figure is likely to be slightly overstated:

$$9150.8 \div (1703.9 + 1821.7) \div 2 = 5.2 \text{ times}$$

The 5.2 times ratio indicates CSL's 2020 sales were over five times its average receivables balance. In other words, the company was able to generate and collect its receivables balance approximately every 70 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

$$\text{Days-in-Receivables Ratio} = \frac{365}{\text{Receivables Turnover Ratio}}$$

As February 2020 had 29 days:

$$366 \div 5.2 = 70.5 \text{ days}$$

This figure of 70.5 indicates that it takes CSL just over 70 days between selling an item and collecting the receivable. If we assume, for example, that 50 per cent of CSL's revenue was on credit, then its days-in-receivables would be 140 days. Whether this is good or bad requires some comparison, looking at the prior year (2017 was 120 days) as well as the ratios of 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 terms. 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 the management of receivables is the allowance (provision for expected credit loss) 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 for expected credit loss) ratio for 2020 and 2019 is calculated as follows from the information in its balance sheet and Note 15 Trade and other receivables. This shows a decline in 2020, as might be expected during a pandemic, but still a very small expense.

2020	2019
25.3 ÷ 1313.3 = 1.9%	17.5 ÷ 1456.4 = 1.2%

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LO5 Notes receivable

An account receivable is an amount owed by a customer who has purchased the business' product or service. Sometimes, because of a customer's poor credit rating or because of the size of the transaction, a more formal agreement with the customer beyond a normal account receivable may be entered into. This can be done with 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 one 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 (the receivable).

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 this book's appendix, calculate and interpret: (1) horizontal analysis, and (2) vertical analyses of accounts receivable and sales.

Analysis:

1 Horizontal analysis
Accounts Receivable
(Receivables and contract assets):

($1703.9 – $1821.7) ÷ $1821.7
= 6.5% negative

Sales and Service Revenue:

($8796.6 – $8205.4) ÷ $8205.4 = 7.2%

2 Vertical analysis
Accounts Receivable (2020):

$1703.9 ÷ $15 464.7 = 14.8%

Sales and Service Revenue (as a percentage of Total operating revenue):

$8796.6 ÷ $9150.8 = 96.1%

The negative 6.5 per cent horizontal analysis indicates that receivables decreased during the year by over 6 per cent. With an increase in sales of over 7 per cent, an increase in receivables would be expected. CSL has either collected more efficiently or only extended credit to those customers who were more likely to pay promptly.

The 14.8 per cent vertical analysis indicates that a relatively 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 and services; some also comes from royalties and licence fees.

When a promissory note is accepted, we have 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.

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 2022 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 2023.

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. 2022	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,

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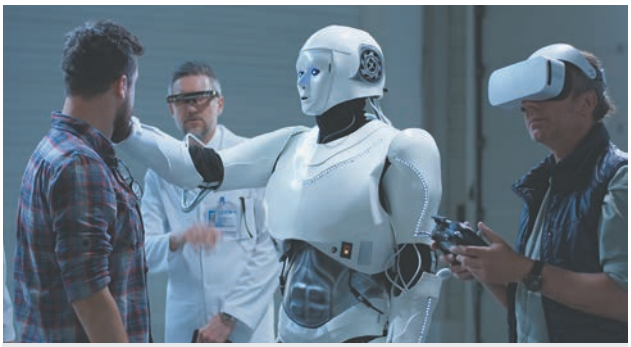
the annual interest rate and the length of time the note is outstanding. In this example, Tata's note receivable is outstanding for only six months. As a result, interest of 6 per cent (per year) will be charged for six of the 12 months of the year. Therefore, interest over the life of the note is $5520, calculated as follows:

Interest = Principal × Annual rate of interest × Time outstanding

= $184 000 × 0.06 × 6/12 months

= $5 520



Dreamstime.com/Evgeniy Shkolenko

Industrial robots need not look like a machines – they may be humanoid to better interact with people, such as when taking their temperature for COVID-19 screening.

KEY FORMULA 6.6: INTEREST EARNED

Interest Earned = Principal × Annual Rate of Interest × Time Outstanding

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 2023. 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

= $1 840

On 31 December Tata would record this interest revenue as follows:

31 Dec. 2022	Interest Receivable			1840	
	Interest Revenue				1840
	(To record interest earned on note)				
	Assets	=	Liabilities	+	Equity
	+1840				+1840

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 2023. The entry also increases Interest Revenue to reflect the inflow of assets attributable to the year 2023. 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 2023, 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 2023	Cash			189 520	
	Interest Receivable				1840
	Note Receivable				184 000
	Interest Revenue				3 680
	(To record collection of note)				
	Assets	=	Liabilities	+	Equity
	+189 520				+3 680
	−184 000				
	−1840				

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

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current period ($184 000 × 6% × 4/12). This interest revenue will be reported on Tata's 2023 statement of comprehensive income. The result of the entry is a net increase to assets of $3680 and an increase to equity of the same amount. 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. If this seems low to you, remember that equity should have been increased substantially when the sale was made and the note created. In the next chapter we look at the increase in equity resulting from the difference between the price a product is sold for and what was paid for it.

MINDTAP Review this material with the e-lecture.

MINDTAP Test your understanding with the revision quizzes for this chapter.

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EXERCISES

1 Recording accounts receivable LO1

On 1 March, Cole Company sells groceries items to a customer for $10 000. Terms of the sale are 1/10, n/30. On 5 March, the customer returns $2000 of the goods. The customer pays on 10 March. You can assume no GST is payable on these groceries.

REQUIRED

a Prepare all journal entries to record the sale, the return and the collection of the receivable. Ignore GST and any effects on inventory or cost of goods sold.

b Prepare the above journal entries assuming GST.

2 Record sales, accounts receivable and returns with GST LO1

Using the information in Exercise 1 above but assuming 10% GST is added to the $10,000 selling price.

REQUIRED

Prepare all journal entries to record the sale, the return and the collection of the receivable including the GST, but ignore any effects on inventory or cost of goods sold.

3 Recording sales returns LO1

On 2 March, Talia Taylors sells cloths to a customer for $30 000. On 6 March, the customer returns $1750 of merchandise. The accountant recorded the return with the following entry:

6 March	Sales	1750	
	Accounts Payable		1750

REQUIRED

Prepare the entry the accountant should have made when the merchandise was returned on 6 March and explain why the accountant's entry was incorrect. Ignore GST and any effect on cost of goods sold or inventory.

4 Reporting accounts receivable LO1

The following records the receipt of cash from a debtor within the discount period:

Cash	2 940	
Sales Discounts	60	
Accounts Receivable		3 000

REQUIRED

Explain why the customer has paid only $2425, yet their debt has reduced by the full $2500.

5 Direct write-off method LO2

Lewis sells $500 of avocados to Lucy during January. In April, Lewis determines that he will be unable to collect the receivable from Lucy.

REQUIRED

Prepare the journal entries to record the sale and the bad debt expense if Lewis uses the direct write-off method. Ignore GST and any effect on cost of goods sold or inventory.

6 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 from the perspective of the information reported on the balance sheet and the income statement?

7 Estimating bad debt expense LO3

Tran uses the percentage-of-sales approach to estimate bad debts. Sales for the year were $950 000 and gross profit was $450 000. Tran estimates that 8 per cent of sales are uncollectible.

REQUIRED

What is Tran'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?

8 Allowance method LO2, 3

Yaowen uses the allowance method to account for bad debt expense. Yaowen makes credit sales of $190 000 during the year. At year end, Yaowen estimates that $9000 of those sales will not be collected. The next year, Yaowen determines that a $4000 receivable is uncollectible and should be written off.

REQUIRED

Prepare the journal entries to record the credit sales, bad debt expense and the subsequent write-off of uncollectible accounts.

9 Estimating bad debt expense LO3

Rachel's Rabbles has a receivables balance of $185 000 at the end of the year. Based on past history, Rachel estimates that she will not collect 3 per cent of these receivables. Prior to any year-end adjustment, the balance in the allowance account was $300 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 $200 credit instead of the $300 debit. What is bad debt expense in this situation? Show your calculation in T-account form.

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10 Horizontal and vertical analyses

LO4

The following information pertains to Lara Limited:

	2023	2022
Net sales	$350 000	$342 000
Net accounts receivable	289 000	197 000
Bad debt expense	9 900	1900
Total assets	410 000	425 000

REQUIRED

Undertake horizontal analyses of the four accounts and vertical analysis for bad debts expense and net accounts receivables. Round percentages to one decimal point (e.g. 23.9%). Comment on the results of your analysis.

11 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. Why are you unable to comment on this analysis without further information?

12 Effects of recording bad debt expense

LO2, 3, 4

You are the company secretary of a new company in the first year of operation and shareholders are asking about how some of the accounting methods have impacted the figures in the financial statements. The chairperson 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 has had compared to if the direct write-off method had been used:

	Bad debts expense	Net income	Amount of accounts receivables reported on the balance sheet	Receivables turnover ratio
Effect of bad debt expense entry				

REQUIRED

Fill out the grid with increase, decrease or no effect. Be prepared to explain why if called upon to do so.

13 Accounting for notes receivable

LO6

On 1 March, Abby Actuarial accepted from Nguyen Networks a six-month, 8 per cent, $170 000 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 (remembering the 30 June adjustment).

14 Uncollectible receivables

LO2

Le Ma reported the following information in her 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.

15 Uncollectible receivables

LO2, 3

At 31 December, Duong Designers had gross accounts receivable of $345 000. Historically, Duong's Designers has estimated bad debt expense as 2 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 $3000. Again, calculate the expense assuming a debit balance of $100.

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, and (ii) the net realisable value of receivables?

16 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 or more months overdue	19 000

Prior experience has shown that the company will probably collect 95% of its current receivables, 85% of one month overdue, 75% of two months overdue, and 65% of three or more months overdue.

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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.

17 Recording notes receivable

LO5

On 1 April, Choi Corporation accepted a six-month, 6 per cent, $850 000 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.

18 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 accepted 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

19 Accounts receivable entries

LO1, 2, 3

During the 2021–22 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 of 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 debit and an allowance account of $43 000 credit.

REQUIRED

a Prepare all journal entries to record each of the transactions that occurred in 2021–22 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. You can ignore GST.
b Prepare the journal entry for the sales assuming GST now needs to be added to the selling price.

20 Comparing methods for uncollectible receivables

LO2, 3

The following data pertains to the operations of Knight Kiters for 2023:

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%

A 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 2023 under the direct write-off method and the allowance method.
b Calculate profit or loss under both methods (assume a tax rate of 30 per cent).
c As a reporting entity, does Knight Kiters have the option of which method to use under Australian Accounting Standards?

21 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, 2023	$ 584 000	$ 460 000
Net accounts receivable, 2022	505 000	398 000
Net revenues, 2023	2 425 000	2 195 000
Net revenues, 2022	2 200 000	1 500 000

REQUIRED

a Calculate the 2022 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?

22 Recording notes receivable

LO5

On 1 February, Tran invoiced Adams for $40 000 plus 10% GST. On 15 May, Tran deemed the account uncollectible and, using the direct write-off method, wrote it off. On 1 July, Adams offered Tran a six-month, 8 per cent, $44 000 promissory note in payment of its obligation, which Tran accepted. Adams paid the principal and the interest at the maturity date.

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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 might Adams' motives be for offering a promissory note in settlement of such an old debt? Can you think of any reasons Adams may not accept it?

CASES

23 Research and analysis

LO1, 4

Access the latest annual report for Cochlear Limited (ASX: COH) (or a company chosen by your professor).

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 account (Allowance for Impairment Loss or similar)?
   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 and 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).

24 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 2 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 be prudent (conservative) and increase the allowance for bad debts to 5 per cent of net credit sales with the expectation that the lower net income this year 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.

25 Ethics in GST

LO2

Given GST is a value-added tax, not charging a customer GST is not like other tax evasion as the amount is small (only 10% not 30% like company tax) and the amount really only applies to the difference between the input price and the output price – a marginal tax. Comment.

26 Written communication

LO2, 3

The Chief Financial Officer (CFO) of a biotechnical company that sells throughout Australasia is currently training new employees. In today's training session the group is told that total credit sales for the month are $900 million, accounts receivable total $1 120 million (less a $10 million allowance for bad debts) and bad debt expense for the month is $13 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 has said you understand the difference, the CFO asks you to research this issue and prepare a three- to five-minute PowerPoint presentation explaining the difference to present to the other trainees.

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7 INVENTORY

This chapter examines the accounting for inventory and the effect of GST. 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 concludes with an analysis of a business' inventory position, before an Extension section covers inventory management under the periodic system.

Learning Objectives

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

- **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** EXTENSION: record purchases and calculate the cost of sales under a periodic system.

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LEARN STUDY APPLY

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 or 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.

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 'listed 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 are 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 and allowances (including purchase discounts) from the supplier
- but usually not GST.

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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

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 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 both the perpetual system and the periodic system.

perpetual inventory system
A system that updates the inventory account each time inventory is bought or sold.

periodic (physical) inventory system
A system that updates the inventory account only at the end of an accounting period.

Purchases
An account used to accumulate the cost of all purchases.

To illustrate the recording of inventory, suppose that Shenton Grinders Cafe purchases $10 000 of inventory on account (on credit) on 10 October. The purchase would be recorded as follows:

10 Oct.	Inventory			10 000	
	Accounts Payable				10 000
	(To record purchase of inventory)				
	Assets	=	Liabilities	+	Equity
	+10 000		+10 000		

Both assets and liabilities increase as a result of this transaction.

Following on from Chapter 6, where the Goods and Services Tax (GST) was introduced, when a business purchases most inventory items it is charged GST by the seller. There are exceptions like fresh food, water and medical supplies, so let us assume here the inventory was not (GST-free) roasted coffee beans but environmentally unfriendly disposable cups.

Shutterstock.com/magicoven

A disposable foam cup attracts GST (as would any cup) but is particularly environmentally unfriendly

The supplier will then charge Shenton $11 000 (10 000 + 10% or 10 000 × 1.1). But Shenton will be able to claim back the $1000 from the Australian Tax Office (ATO). This is the mirror image of sale of inventory: charging and collecting GST and remitting it to the ATO, as discussed in Chapter 6. The purchase of inventory with GST would be recorded as below:

10 Oct.	Inventory			10 000	
	GST Receivable			1000	
	Accounts Payable				11 000
	(To record purchase of inventory with GST)				
	Assets	=	Liabilities	+	Equity
	+10 000		+11 000		
	+1000				

When Shenton lodges its Business Activity Statement (BAS), it will claim back the GST paid for this and other goods and services it has purchased that attracted GST. In reality, it will offset this claim back against the GST it has charged its customers. As most businesses sell more than they buy (if they did not, then making a profit might be difficult), for each period they usually owe the ATO more than they can claim back.

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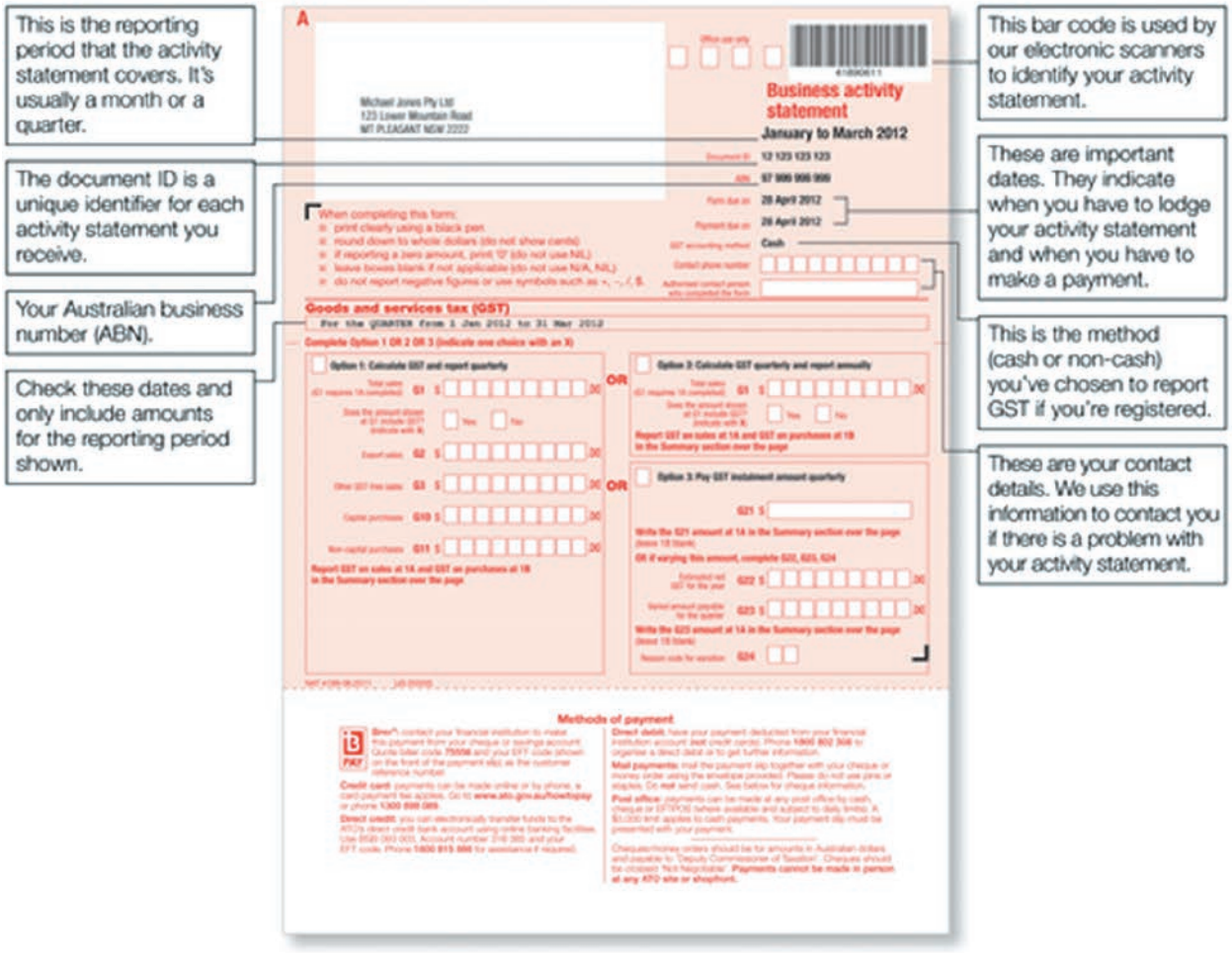
Making it real

GST AND BAS

While the GST paid on inventory will be claimed back from the ATO, GST charged on sales will have to be remitted to the ATO. Most businesses will also have included on their BAS 'Pay As You Go' (PAYG) tax payments, which have businesses paying tax regularly (much like wage earners have tax deducted from their earnings). Therefore, most businesses will be sending money to the ATO rather than receiving a refund.

An example of a paper BAS from the ATO is shown below. The electronic version is tailored to each business.

EXAMPLE: Business activity statement – front



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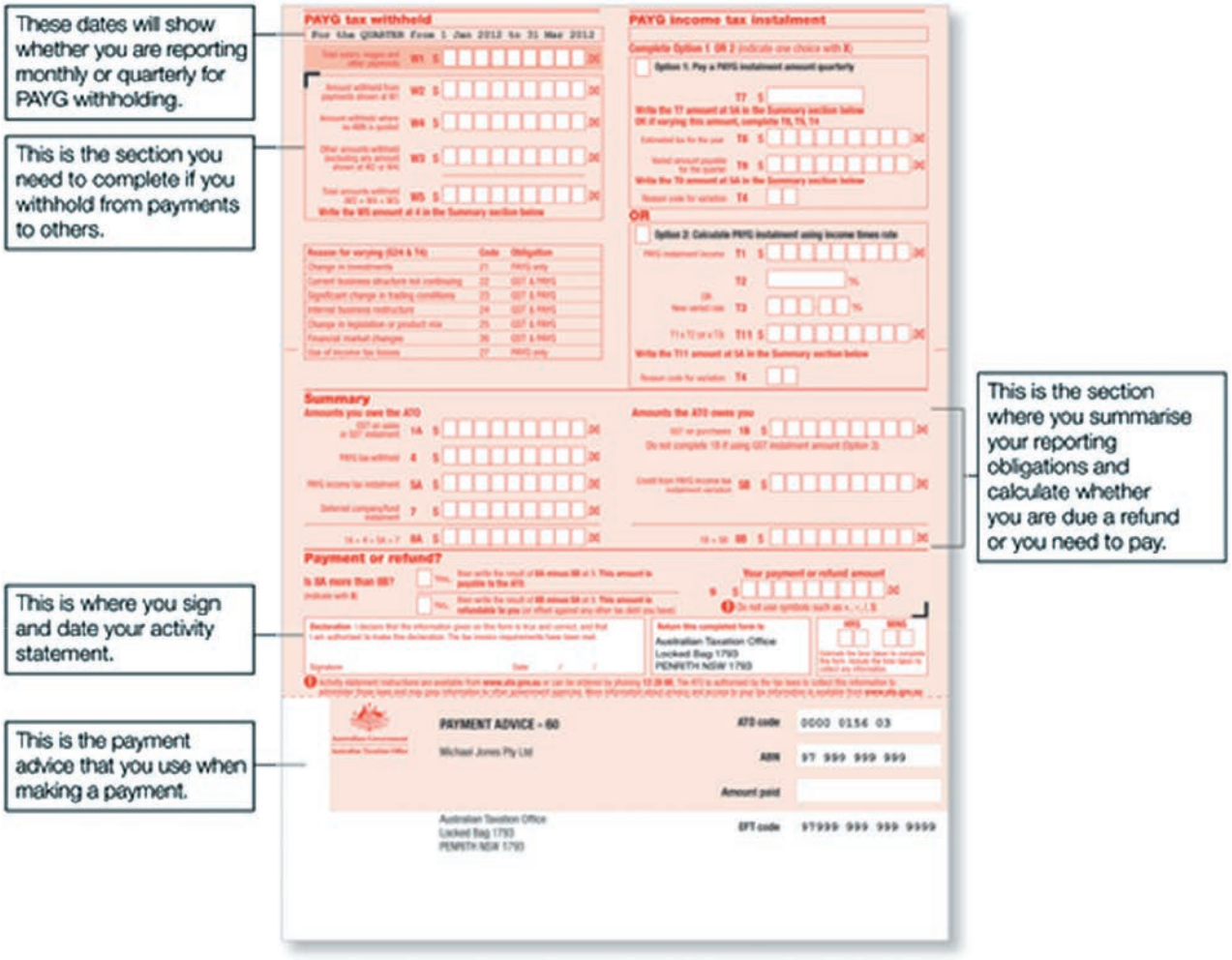
EXAMPLE: Business activity statement – rear



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We could continue to demonstrate each transaction to include GST. In the following example, the transportation would have a $20 GST added to it, and the treatment would be as above with a debit to GST Receivable and $220 payable to the transport company. But like for receivables in Chapter 6, this may overly complicate the basics associated with inventory. Inventory is valued the same in the business regardless of it being GST-free (e.g. coffee beans) or attracting GST (e.g. cups). Therefore, GST is ignored in the main entries for the remainder of the chapter, but there is the opportunity to complete some of the end-of-chapter exercises with GST.

In some cases, a business must pay for the transportation ('postage'). Such additional costs are called **transportation-in** (freight-in) and are added to the overall cost of the inventory. To illustrate, suppose that Shenton pays a third-party carrier $200 to transport the inventory to its warehouse. Shenton would record the payment with the following entry:

transportation-in
An account that accumulates the transportation costs of obtaining the inventory.

10 Oct.	Inventory	200	
	Cash		200
	(To record transportation-in)		

Assets	=	Liabilities	+	Equity
+200				
−200				

Sometimes, a business will return inventory to the supplier (vendor) 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 suppliers as well as the cost reductions from vendor allowances.

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To illustrate, suppose that on 12 October Shenton is granted a $500 reduction in the cost of the goods (inventory) due to blemishes on the inventory. Even though Shenton keeps the inventory, its cost has decreased due to the purchase allowance. Therefore, Shenton would reduce the cost of the inventory and the amount payable to the supplier with the following entry:

12 Oct.	Accounts Payable	500	
	Inventory		500
	(To record purchase allowance granted by supplier)		

Assets	=	Liabilities	+	Equity
–500		–500		

In addition to returns and allowances, companies sometimes receive discounts from suppliers if payment is made within a certain time period. Such *purchase discounts* reduce the cost of the inventory. To illustrate, suppose that Shenton pays its remaining $9500 bill to the supplier on 15 October, which qualifies Shenton for a 1 per cent discount. As a result, Shenton would save $95 ($9500 × 1%) and pay only $9405. The entry to record payment would be as follows:

15 Oct.	Accounts Payable	9 500	
	Inventory		95
	Cash		9 405
	(To record payment)		

Assets	=	Liabilities	+	Equity
–95		–9 500		
–9 405				

The entry decreases Accounts Payable for the full $9500 (since the debt is paid in full) and decreases Cash by the $9405 paid. The difference is a reduction to (the asset) Inventory because the purchase discount of $95 has reduced the cost of the inventory.

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* para. 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, Shenton's *net purchases* of inventory can be calculated as follows:

Gross purchases	$10 000
Add: Transportation-in	200
Less: Purchase returns and allowances	(500)
Less: Purchase discounts	(95)
Net purchases (Inventory balance)	$9 605

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 both the perpetual system and the periodic system.

To illustrate the recording of cost of sales, suppose that on 2 November Shenton sells inventory that cost it $400 to a customer for $600 cash. Shenton 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 Shenton'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). If GST involved the Cash collected would be greater ($660), Sales revenue would be the same and the extra $60 would be credited to the GST Payable Account, as in Chapter 6.

The second entry records the effect of the sale on Shenton'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

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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 Shenton earned on the sale.

In contrast, a service business only has a 'money' flow – it does not have the corresponding 'goods' flow.

Shutterstock.com/Marcin Balcerzak

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 this book's appendix. Inventory is an important asset. CSL reported Inventories of over $3 billion in both 2019 and 2020 – its largest current asset. It also reported almost $4 billion in Cost of Sales in both years, its largest expense.

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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 this book's appendix.

- 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 COS).
- In 2020, Receivables and Contract Assets 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 23 per cent the size of COS.

To determine the cost of inventory sold, companies can use one of the following four inventory costing methods:

- specific identification
- first-in, first-out (FIFO)
- last-in, first-out (LIFO)
- moving average.

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 USA. To illustrate each method, the following example will be used. Suppose that Wattle General Store sells eucalyptus oil that it purchases from Wollemi Manufacturing. During the month of September, Wattle 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

The **specific identification method** determines cost of sales based on the actual cost of each inventory item sold. To use this method, a retailer

specific identification method
A method that determines the cost of sales based on the actual cost of each inventory item sold.

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MINDTAP Learn more by watching the animation: Specific Identification

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 Wattle specifically identifies each of its inventory items and provides the detailed inventory activity, as shown in **Exhibit 7.1**. It 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.

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		$ 1260
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		$ 1540
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

CSL, because of the nature of its product, is likely to use specific identification. Each batch of medical supplies will be able to be identified from manufacturing to customer (i.e. hospital, chemist or doctor) and in many cases to the 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.

MINDTAP Learn more by watching the animation: FIFO

First-in, first-out (FIFO)

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

first-in, first-out (FIFO) method
A method that calculates cost of sales based on the assumption that the first unit of inventory available for sale is the first unit sold.

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Exhibit 7.2 CALCULATIONS FOR THE FIFO 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		$ 1260
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		$ 1550
30 Sep.	Sell 50 units				35	$13	$455	0	$13	$ 0
					15	$14	$ 210	15	$14	$ 210
					50		$665	45	$15	$ 675
								60		$ 885

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 Wattle to assign the costs of the first units purchased (the oldest stock on hand) to cost of sales. On 10 September, Wattle 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, Wattle 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 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. This is even the case for items where a retailer may attempt to sell the oldest stock first; for example, fresh 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.

MINDTAP Learn more by watching the animation: LIFO

Last-in, first-out (LIFO)

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 USA. **Exhibit 7.3** illustrates the calculations under the LIFO method.

last-in, first-out (LIFO) method
A method that calculates cost of sales based on the assumption that the last unit of inventory available for sale is the first unit sold.

At each sale, the LIFO method requires Wattle to assign the costs of the last or most recent units purchased to cost of sales. On 10 September, Wattle sold

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Exhibit 7.3 CALCULATIONS FOR THE LIFO 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		$ 1260
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		$ 1515
30 Sep.	Sell 50 units				5	$14	$ 70	35	$12	$ 420
								25	$14	$ 350
					45	$15	$ 675	0	$15	$ 0
					50		$ 745	60		$ 770

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, Wattle 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.

MINDTAP Learn more by watching the animation: Moving Average

Moving average

moving average method
A method that calculates cost of sales based on the average unit cost of all inventory available for sale.

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.

KEY FORMULA 7.1: AVERAGE UNIT COST

$$\text{Average Unit Cost} = \frac{\text{Cost of Goods Available for Sale}}{\text{Units Available for Sale}}$$

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:

Once the average unit cost is known, it is multiplied by the units sold to determine cost of sales. **Exhibit 7.4** contains Wattle'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, Wattle has 100 units available for sale at a total cost of $1260. Therefore, the average unit cost is $12.60 ($1260/100). Wattle uses that unit cost to determine the costs of the inventory sold and the inventory that remains. Having sold 65 units, Wattle'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, Wattle 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, Wattle 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, Wattle's cost of sales on 30 September is $698 (50 × $13.96).

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Exhibit 7.4 CALCULATIONS FOR THE MOVING AVERAGE 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		$1260
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		$1536
30 Sep.	Sell 50 units				50	$13.96	$698	60	$13.96	$ 838

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.

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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 Wattle's inventory data in a table 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.

The table summarises Wattle's 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. (Note that cost of goods available for sale is the same regardless of the inventory costing method used.) That cost is then allocated to either what was sold (cost of sales) or what was not sold (ending inventory).

Exhibit 7.5 COMPARISON OF INVENTORY COSTING METHODS

	Units	FIFO	Moving average	LIFO
Beginning inventory	40	$ 480	$ 480	$ 480
Add: Net purchases	135	$1875	$ 1875	$1875
Cost of goods available for sale	175	$2355	$2355	$2355
Less: Ending inventory	60	$ 885	$ 838	$ 770
Cost of sales	115	$1470	$ 1517	$1585

In Wattle'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

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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 (inflation) 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 USA, 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 Wattle generated revenues of $5240 from its sale of inventory during September. Suppose further that it incurred $1960 in operating expenses during the month. **Exhibit 7.6** contains comparative multi-step statements of income prepared under each inventory costing method.

Exhibit 7.6 **COMPARATIVE STATEMENTS OF INCOME**

	FIFO	Moving average	LIFO
Sales	$5 240	$5 240	$5 240
Cost of sales	(1470)	(1517)	(1585)
Gross margin	$3 770	$3 723	$3 655
Operating expenses	(1960)	(1960)	(1960)
Profit before tax	$1810	$1763	$1695

Comparing the profit before tax under the LIFO and FIFO assumptions (which are the two extremes), you can see that Wattle 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.

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

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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 para. 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 (the 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 57.1 per cent in 2020 (Gross profit of $5226.4 million ÷ Total operating revenue of $9150.8 million), and 56.0 per cent in 2019. The COGS is then 42.9 per cent (100% – 57.1%), but remember that included in Total operating revenue are service revenue, fees and other revenues. Therefore, the mark-up on its products is overstated by comparing Total operating revenue to COS.

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.

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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

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, and 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
A rule that 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 provides the 30 June inventory information shown in **Exhibit 7.7**.

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Exhibit 7.7 LCNRV CALCULATION FOR LOYEUNG AS OF 30 JUNE

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)

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

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 'Note 4: Inventories' in CSL's financial statements in this book's appendix. What inventory valuation method does the company use?

Analysis:

'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.' (Note that 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.'[5]

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 us call it Suying Syndicate – 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 Suying Syndicate *Annual Report 2022*.

Exhibit 7.8 ACCOUNT BALANCES FROM SUYING SYNDICATE ANNUAL REPORT (ALL FIGURES IN MILLIONS)

Source	Accounts	2022	2021
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

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:

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KEY FORMULA 7.2: HORIZONTAL ANALYSIS

Dollar Change in Account Balance = Current-year Balance – Prior-year Balance

$$\text{Percentage Change in Account Balance} = \frac{\text{Dollar change}}{\text{Prior-year balance}}$$

Dreamstime.com/Dimabl

Some inventory, like newspapers, needs to be sold quickly or it becomes of no value and needs to be recycled

KEY FORMULA 7.3: VERTICAL ANALYSIS

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

Given Suying Syndicate's 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 –6780 (75)	$\frac{(75)}{6780} = 1.1\%$ negative
Cost of Sales	44 157 –42 929 1228	$\frac{1228}{42\,929}$ 2.9%

Vertical analysis		
	2022	2021
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 2022 and 2021. So, although inventory stocks were down slightly, the decrease mirrored an overall decrease in Suying Syndicate's 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 2021 and 70.2 per cent of sales in 2022. The reason for this increase is that cost of sales increased faster than sales. This is a trend that will need to be watched in the future.

Inventory turnover ratio

inventory turnover ratio
A ratio that compares cost of sales during a period to the average inventory balance during that period and measures the ability to sell inventory.

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:

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 keeping (stocking) inventory on the shelves.

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CSL analysis

Using CSL's information in this book's appendix, 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:

($3509.5 – $3038.8) ÷ $3038.8 = 15.5% increase in inventory 2019 to 2020

In the CSL *Annual Report 2019/20*, 'Note 2: Revenue and Expenses' states:

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.

Cost of sales:

($3924.4 – $3761.2) ÷ $3761.2 = 4.4%

2 Vertical analysis

Inventory:

$3509.5 ÷ $15 464.7 = 22.7%

Cost of sales:

$3924.4 ÷ $8796.6 = 44.6%

In this case we use sales (and service) 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 22.7 per cent vertical analysis of inventory shows that just under one-quarter of the company's total assets was tied up in inventory. This seems reasonable, given that CSL is a major supplier of medicines. The 44.6 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 less than 45 cents (but service revenue has reduced this percentage). This may seem low, but most of the research and development costs associated with coming up with new medicines are not part of COS.

3 Inventory turnover ratio

$3924.4 ÷ [($1703.9 + $1821.7) ÷ 2] = 2.23

4 Days-in-inventory

366 ÷ 2.23 = 164 days

The 2.23 times inventory turnover ratio indicates that CSL makes and sells its average stock of inventory a little over twice per year. The days in inventory ratio of 164 days indicates its holding enough inventory to supply over five months, if anything should happen to their supply chain. CSL can supply large quantities of medicine quickly when a pandemic or similar mass health emergency arises.

Suying Syndicate's 2022 inventory turnover ratio is calculated as follows:

$$\frac{44\,157}{\left((6\,705 + 6\,780)/2\right)} = 6.5$$

The 6.5 ratio indicates that Suying Syndicate's cost of sales for 2022 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 ratio into a measure of days by dividing the turnover ratio into 365 days (2022 is not a leap year like 2020 was). Thus, the days-in-inventory ratio is calculated as follows:

days-in-inventory ratio
A ratio that converts the inventory turnover ratio into a measure of days by dividing the turnover ratio into 365 days.

$$\frac{365}{6.5} = 56.2$$

A ratio of 56.2 indicates that it takes Suying Syndicate 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.

MINDTAP Review this material with the e-lecture.

LO7 EXTENSION: periodic inventory system

A periodic inventory system does not update the inventory and cost of sales accounts *during* the period.

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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 suppliers (vendors) as well as the cost reductions from supplier 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 suppliers as well as the cost reductions from supplier allowances.

Purchase Discounts account
An account that accumulates the cost reductions generated from supplier discounts granted for prompt payments.

To illustrate the recording of inventory, the example used earlier in the chapter is repeated (without GST). While the four accounts could be used, a simpler approach would be to record all costs associated with purchasing inventory to the Purchase account (an expense account). Suppose that Shenton Grinders Cafe purchases $10 000 of inventory on account on 10 October. The purchase would be recorded as follows:

10 Oct.	Purchases	10 000	
	Accounts Payable		10 000
	(To record purchase of inventory)		

Assets	=	Liabilities	+	Equity
+10 000				+10 000

Suppose further that Shenton pays a third-party carrier $200 cash to transport the inventory to its warehouse (debit Purchases or Transportation-in and credit Cash). On 12 October Shenton is granted a $500 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 Shenton pays its remaining $9500 bill to the supplier on 15 October, which qualifies Shenton for a 1 per cent discount. As a result, Shenton would save $95 ($9500 × 1%) and pay only $9405. The entry to record payment would be as follows:

15 Oct.	Accounts Payable	9 500	
	Purchases (or Purchase Discounts)		95
	Cash		9 405
	(To record payment)		

Assets	=	Liabilities	+	Equity
−9 405		−9 500		+95

The entry decreases Accounts Payable for the full $9500 and decreases Cash for the $9405 payment. The difference (the purchase discount) is a reduction in Purchases (expense).

Given the preceding activity, Shenton's **net purchases** of inventory can be calculated as follows:

net purchases
The value of inventory purchased and transportation-in less purchase returns and allowances and purchase discounts.

Purchases	$10 000
Add: Transportation-in	200
Less: Purchase returns and allowances	(500)
Less: Purchase discounts	(95)
Net purchases	$9 605

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.

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To illustrate this process, the example used earlier in the chapter is repeated. Suppose that during the month of September, Wattle 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, Wattle counts 60 units on hand. Wattle's cost-of-goods-sold model for September is therefore as follows:

	Units	Cost
Beginning inventory	40	$ 480
Add: Net purchases	135	1875
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, Wattle must use one of the four inventory costing methods.

Specific identification

Under the specific identification method, Wattle determines the cost of ending inventory based on the actual cost of the units on hand. Suppose that Wattle 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 Wattle'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	$1485

First-in, first-out (FIFO)

Under the FIFO method, Wattle 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 Wattle'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	$1470

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, Wattle 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. Wattle 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 Wattle'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	$ 1615

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Weighted average

Under the weighted average method, Wattle 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).

Wattle's weighted average cost per unit, rounded to the nearest cent, is calculated as follows:

$$\frac{\$2\,355}{175} = \$13.46$$

MINDTAP Test your understanding with the revision quizzes for this chapter.

Wattle can therefore calculate the cost of ending inventory as follows, rounded to the nearest dollar:

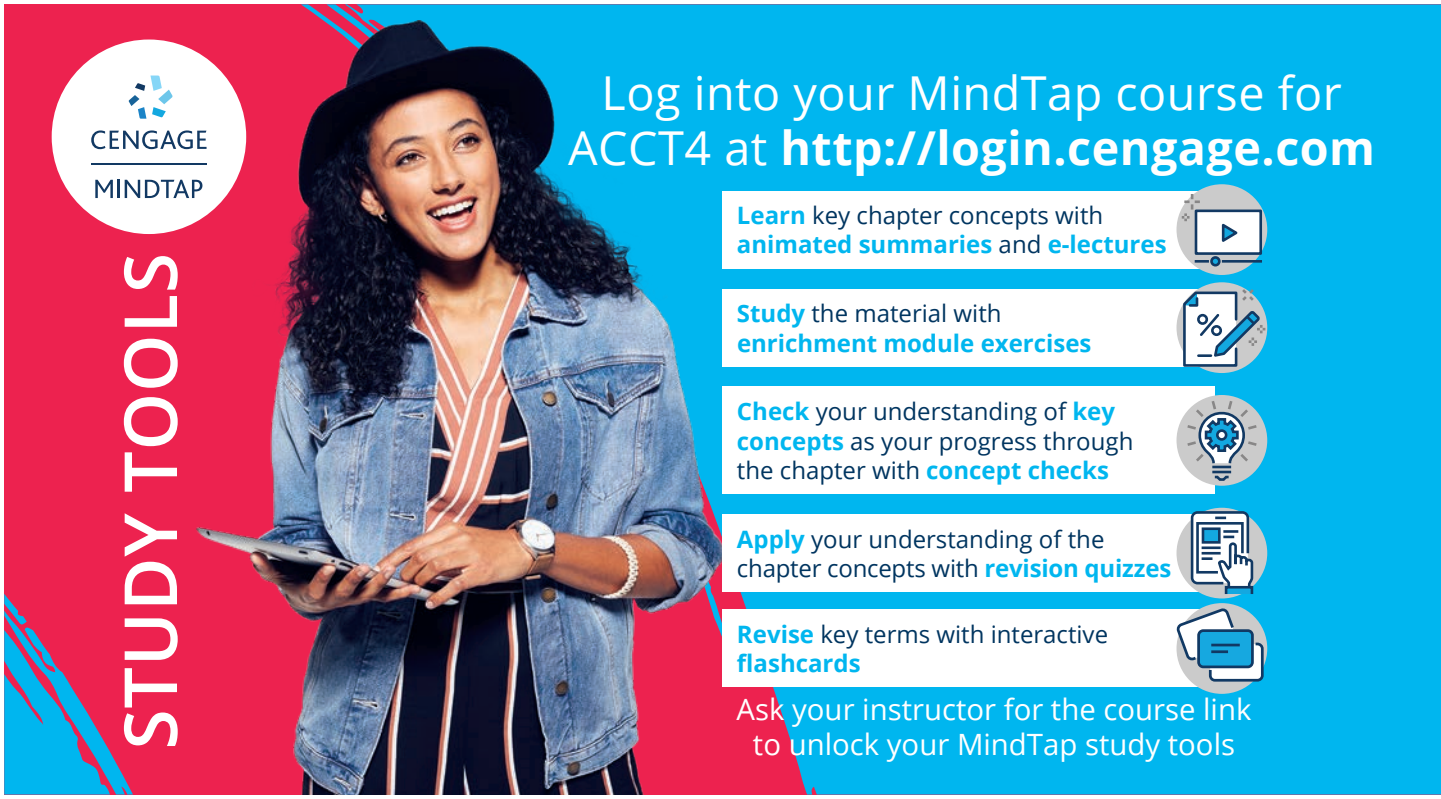
	Units	Unit cost	Total cost
Ending inventory	60	$13.46	$808

Plugging this into the cost-of-goods-sold model yields Wattle'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	$1547

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 (or under) statement of COGS will be counterbalanced in the next period.

MINDTAP Review this material with the e-lecture.



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EXERCISES

1 Describe inventory

LO1

How would you describe the physical nature of CSL's inventory? (What does CSL sell?)

2 Classifying inventory costs

LO1

Use the example of buying on eBay (where sometimes 'postage' is free and other times it can be more expensive than the item being purchased) to illustrate why freight in (transportation–in) should be included in the cost of inventory.

3 Determining inventory costs

LO1

Matthew purchased 1000 XBoxes from the importer for $75 000. The supplier gave Matthew a $15 000 discount because the units glowed green rather than light blue as ordered. The cost to ship the Xboxes was $1500 and insurance while in transit was $500.

REQUIRED

Determine Matthew's cost of inventory.

4 Recording inventory purchases

LO1

On 20 March, Lewis Leasehold purchased on account gas hot water heaters for $66 000. Lewis pays the supplier on 30 March, which qualifies it for a 2 per cent discount. Lewis uses a perpetual inventory system.

REQUIRED

a Record Lewis' purchase of the inventory and payment for the inventory ignoring GST.
b Record only the purchase, assuming the $66 000 purchase price was before GST was added.
c If the $66 000 included GST, how much would the GST be?

5 Inventory purchases

LO1, 2

Consider the following separate situations.

	Lucy's Lounges	Sarah's Sofas	Tyler's Tables
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	1890	1750	(f)
Cost of sales	5 220	(d)	7 590

REQUIRED

Calculate the missing amounts for entries (a) to (f).

6 Recording purchases and sales of inventory

LO1, 2

Talia Trading purchased 275 units of inventory on account for $5775. Due to early payment, Talia received a discount and paid only $5225. Talia 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. Talia uses a perpetual inventory system.

REQUIRED

a Prepare all journal entries to record Talia's purchases and sales assuming the FIFO inventory costing method.
b Which journal entries would be different if Talia used the LIFO inventory costing method? How would they be different?

7 Inventory costing methods

LO2

Zhao's November inventory activity is as follows. Zhao uses a perpetual inventory system:

Date	Transaction	Units	Unit cost	Total cost
1st	Beginning inventory	32	$55	$1760
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

You are the accountant of a quickly expanding national smartwatch online retailer and your boss asks you to explain the financial statement impact of inventory costing methods. After attending a tax conference and hearing how accounting choices can make 'the numbers' look good, she is interested in how the business might use FIDO, LIDO or something like that to report the highest profits, higher inventory values and, of course, pay the lowest taxes. Note the purchase price of smartwatches has been *falling* over the last two years and that trend is expected to continue.

REQUIRED

a Explain the effects of using the LIFO and FIFO methods on income, inventory and taxes. Can your boss get all that she wants?
b If the business was Australian based, what might be the difficulty in choosing any inventory costing method?

9 Inventory costing methods

LO2

Huang Hardware provides the following information relating to its July inventory activity. Huang uses a perpetual inventory system.

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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 In attempting to calculate Huang's cost of sales (cost of goods sold), what additional information would you need to know?

b Calculate the ending inventory and cost of sales using the FIFO, LIFO and moving average costing methods. Round 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

Talia Lewis and Company sells Logo Belts for $270 each. On its first day of business in July, the company purchased 200 belts for $130 each. The company sold 30 units during the first month of operations and sold an additional 130 units the next two months. To prevent inventory stockouts during Christmas, the company bought an additional 70 units for $145 each in October. The company only sold 85 units from November through June. The company uses a perpetual inventory system and the FIFO inventory costing method.

REQUIRED

a Calculate Talia Lewis 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

Wright experiences a fire in its warehouse at the end of the year, which destroys its entire inventory. Wright'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, Wright experiences a 65 per cent gross profit percentage on sales.

REQUIRED

Use the gross profit method to estimate Wright's cost of sales and ending inventory.

13 Applying lower-of-cost-and-net-realisable-value

LO5

Kay Mart 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 businesses: A, B and C.

In millions	A	B	C
Beginning inventory	$ 569	$ 774	$ 989
Ending inventory	423	214	356
Cost of sales	1376	1232	1771
Sales	2 232	1836	3 025

REQUIRED

Calculate the inventory turnover ratio and days in inventory ratio for each business. How do the businesses compare?

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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 2022 and 2021		
	2022	2021
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, Mariana implemented an inventory management system that it believes will result in greater efficiencies and profits. Mariana's CEO was therefore disappointed when she saw the following condensed income statement (all numbers in millions) showing no increase in net income:

	2021	2022
Sales	$650	$775
Cost of sales	373	452
Operating expenses	232	278
Net income	45	45

REQUIRED

Use horizontal and vertical analyses to explain to the CEO why the inventory management system was effective. Round percentages to one decimal point (e.g. 4.8%).

17 Appendix: Recording and reporting inventory

LO7

De Lucca Zaggia purchased 275 units of inventory on account for $5775. Due to some defects in the merchandise, De Lucca Zaggia received a $2 per unit allowance and paid only $5225. De Lucca Zaggia 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. De Lucca Zaggia uses a periodic inventory system.

REQUIRED

a Prepare all journal entries to record de Lucca Zaggia's purchases of inventory, ignoring GST.

b Calculate de Lucca Zaggia'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.

c Record the first 275-unit purchase, assuming the $5775 did not include GST.

d If the $5775 purchase price included GST, what would the GST amount be?

18 Appendix: Inventory costing methods (periodic system)

LO7

Huang Hardware commenced business in January and provides the following information. 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 To calculate Huang's cost of goods sold, what additional information is needed?

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?

d Explain why the COGS calculated in (b) above is likely to be the same if Huang was using FIFO and a perpetual inventory system but different for LIFO.

19 Inventory costing methods

LO7

Emma's November inventory activity follows. Emma uses a periodic inventory system.

Date	Transaction	Units	Unit cost	Total cost
1 Nov	Beginning inventory	32	$55	$1760
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.

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PROBLEMS

20 Effects of inventory costing methods on profits after tax

LO2

Cruttenden Confectioners has hired you to examine whether the business 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

Cruttenden 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 Cruttenden the reasons why such an analysis is irrelevant in Australia.

21 Recording inventory activity

LO1, 2,5

Wakefield starts the month of January with 40 boxes of Bear Bars costing $20 each. The following transactions occurred during the month.

i 2nd Purchased 15 additional boxes for $22 each; paid with cash
ii 4th Paid freight costs of $30 on 2 January purchase
iii 10th Sold 45 boxes for $40 each
iv 27th Purchased 10 additional boxes on account for $23 each

REQUIRED

Assume Wakefield uses a perpetual inventory system and the FIFO costing method.

a Prepare all necessary journal entries related to Wakefield's inventory activity, ignoring GST.
b Prepare all necessary journal entries related to Wakefield's inventory activity assuming the dollar amounts above do not include GST and Bear Bars are not GST exempt (i.e. include GST).
c Suppose that the inventory has a replacement value of $375 at the end of the month. What entry, if any, is required? Why is GST not relevant?

22 Analysing inventory

LO6

The following is comparative financial data for two businesses. All balance sheet data are as of 30 June 2023 and 30 June 2022.

	ABC		XYZ	
	2023	2022	2023	2022
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	
Profit (Total Comprehensive Income)	543 000		228 500	
Cash	85 070	$ 82 508	16 100	$ 15 777
Inventory	250 000	225 000	70 000	65 600
Property and 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 2023 income data for both businesses. Why might you say XYZ is more profitable?
b Prepare a horizontal analysis of the 2023 financial data for both businesses using 2022 as the base year. What does this analysis show?
c Calculate the inventory turnover and days in inventory ratios for 2023 for both businesses. Do these ratios change your conclusions about these companies? (Hint: include your analysis from [a] above.)

23 EXTENSION: periodic inventory system

LO7

Wakefield 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 Wakefield uses a periodic inventory system and the FIFO costing method.

a Prepare all necessary journal entries related to Wakefield's inventory activity, ignoring GST.
b Prepare all necessary journal entries related to Wakefield's inventory activity assuming the dollar amounts above do not include GST and Bear Bars are not GST exempt (i.e. include GST).
c Calculate COGS and closing inventory using LIFO and weighted average methods.

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24 Inventory errors

LO7

Suppose that an organisation's preliminary financial statements show profit of $690 000 and ending inventory of $118 500. Several years later it was discovered that ending inventory should be $127 500.

REQUIRED

a Describe the error in the inventory account (e.g. inventory was over- or understated 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?

CASES

25 Ethics of inventory costing

LO2, 3

In Australia, should reporting entities be allowed to choose FIFO, weighted average or specific identification methods when each is likely to produce different profit (and tax) numbers? Why?

26 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.

MINDTAP Download the Enrichment Modules for further practice

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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 possibly 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' (loss of value).

Learning Objectives

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

- **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.

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LEARN STUDY APPLY

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 developed and then sold is an investment. The business' intended use of the asset dictates how the asset is classified.

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

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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 Chu Corporation buys a refrigerated display cabinet with a purchase price of $56 600. Prior to receiving the cabinet, Chu has it painted in Chu's corporate colours for $2400 and then pays $10 000 to modify the shop and install the cabinet. Finally, Chu pays $1400 for one year's insurance. Given the preceding items, the cost of Chu's cabinet is determined as follows:

Purchase price	$ 56 600
Painting	2 400
Installation	10 000
Total cost	$ 69 000

Courtesy CSL

Accounting for non-current assets like this electron microscope involves the purchase, depreciating the microscope over its life and then disposing of the microscope

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 cabinet during its operations and is therefore an operating expense during the year (debit Insurance Expense $1400, credit Cash $1400). If the insurance was to cover potential damage during installation then it would have been included in the asset cost. GST is often payable on the purchase of assets, but claimed back. As GST does not change the assets value we ignore it here.

Assuming that Chu paid cash, the entry to record the purchase of the cabinet would be as follows:

Refrigerated display cabinet (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 $1 600 000 including stamp duty (taxes). The land requires $110 000 to remove an old asbestos building before it can be used. Some old fixtures from the building sold for $2000. The total cost of the land is as follows:

Purchase price	$ 1600 000
Demolition and safe removal	110 000
Less: Sales of fixtures	(2 000)
Total cost	$ 1708 000

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 fixtures 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**.

Some students experience some confusion with depreciation because of its everyday use in our language.

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.

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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 current 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 usually 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 Chu calculates the cabinet's depreciation as $10 000 for the first year. At year-end, Chu would make the following entry:

Year-end	Depreciation Expense			6 000	
	Accumulated Depreciation				6 000
	(To record the depreciation expense)				
	Assets	=	Liabilities	+	Equity
	–6 000				–6 000

This entry increases Depreciation Expense for the $6000 of cost allocated to the current period. However, instead of decreasing Refrigerated Cabinet, 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 or as a separate line item in the notes to the accounts.

CSL Analysis

Look at CSL's Consolidated Balance Sheet and Note 8 in this book's appendix.

- 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 2020, 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 Property, Plant and Equipment (PPE). Note 8 shows six specific PPE: Land; Buildings; Leasehold Improvements; Plant and Equipment; Right of Use assets; and Capital Work in progress.
- PPE in 2020 have a cost of $8784 million and accumulated depreciation/amortisation $2479 million. Land has no depreciation while Buildings has $220 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).

Jonathan Tyler

Not all assets need to be physically worn out to be fully depreciated

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Reporting non-current assets

carrying amount
The unexpired cost of a non-current asset, calculated by subtracting accumulated depreciation from the cost of the non-current asset.

Non-current assets are reported on the balance sheet, as we have seen with CSL, just below current assets. Notice CSL does not include the word 'net' in the balance sheet for PPE, but in Note 8 the $6305.4 million at 30 June 2020 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.

MINDTAP Review this material with the e-lecture.

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 a non-current asset being depreciated.

estimated residual value
The expected value of a non-current asset at the end of its useful life.

estimated 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.

depreciation method
The method used to calculate depreciation expense, such as the straight-line, reducing-balance and units-of-activity methods.

- **Cost** – the historical cost of the asset being depreciated. This is the amount that was recorded when the asset was purchased.
- **Estimated 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.
- **Estimated 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** refers to the method used to calculate the depreciation expense. Generally Accepted Accounting Principles (GAAP) 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.

MINDTAP Learn more by watching the animation: Depreciation methods.

To illustrate how depreciation expense is calculated under each method, assume the following information is about the Gavaskar Building Supply Company's new delivery van:

- Purchase date: 1 January 2021
- Cost: $65 000
- Estimated residual value: $15 000
- Estimated useful life: five years or 200 000 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

$$\text{Depreciation Expense} = \frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life}}$$

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. 2021	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 2025. **Exhibit 8.1** illustrates depreciation for the entire useful life of the asset.

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Exhibit 8.1 DEPRECIATION SCHEDULE – STRAIGHT-LINE METHOD

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2021	($65 000 – $15 000) ÷ 5	$10 000	10 000	55 000
2022	($65 000 – $15 000) ÷ 5	10 000	20 000	45 000
2023	($65 000 – $15 000) ÷ 5	10 000	30 000	35 000
2024	($65 000 – $15 000) ÷ 5	10 000	40 000	25 000
2025	($65 000 – $15 000) ÷ 5	10 000	50 000	15 000

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.

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

$$\begin{aligned}\text{Depreciation} &= \text{Depreciation Rate} \times \text{Carrying Amount} \\ &= (\text{Straight-Line Rate} \times 1.5) \\ &\quad \times (\text{Cost} - \text{Accumulated Depreciation})\end{aligned}$$

Because an asset's carrying amount declines as the asset is depreciated, the amount of depreciation expense will therefore differ each period. The depreciation expense will become 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:

$$\begin{aligned}\text{Depreciation Expense for 2021} &= (20\% \times 1.5) \times (\$65\,000 - \$0) \\ &= \$19\,500\end{aligned}$$

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, the extra $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

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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, giving a carrying amount of $45 500 ($65 000 – $19 500). Therefore, depreciation expense in the second year would be:

Depreciation Expense for 2022 = 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 and final 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 2025 = 30% × $15 606 = $4682

Now, at this point we need to be careful, as matters become more complex. 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 2024 is $49 394. Therefore, depreciation expense in 2025 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 2024	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 2025 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.

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, aircraft or heavy equipment) 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

Exhibit 8.2 DEPRECIATION SCHEDULE – REDUCING-BALANCE METHOD

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2021	(20% × 1.5) × ($65 000 – $0)	$19 500	19 500	45 500
2022	30% × ($65 000 – $19 500)	13 650	33 150	45 000
2023	30% × ($65 000 – $33 150)	9 555	42 750	22 295
2024	30% × 22 295	6 689	49 394	15 606
2025	Cannot be 30% × $15 606	606 only	50 000 maximum	15 000 minimum

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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. (In passing, the Australian Taxation Office allows a deduction of $0.72 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 2021. Its depreciation expense for 2021 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

Exhibit 8.3 DEPRECIATION SCHEDULE – UNITS-OF-ACTIVITY METHOD

Year	Calculation	Depreciation expense	Accumulated depreciation	Carrying amount
			$ 0	$65 000
2021	$0.25 × 48 000 km	$12 000	12 000	53 000
2022	$0.25 × 44 000 km	11 000	23 000	42 000
2023	$0.25 × 54 000 km	13 500	36 500	28 500
2024	$0.25 × 34 000 km	8 500	45 000	20 000
2025	$0.25 × 20 000 km	5 000	50 000	15 000

Exhibit 8.4 COMPARISON OF THREE DEPRECIATION METHODS

	Straight-line		Reducing-balance		Units-of-activity	
Year	Depreciation expense	Carrying amount	Depreciation expense	Carrying amount	Depreciation expense	Carrying amount
2021	$10 000	$55 000	$19 500	$45 500	$12 000	$53 000
2022	10 000	45 000	13 650	31 850	11 000	42 000
2023	10 000	35 000	9 555	22 295	13 500	28 500
2024	10 000	25 000	6 689	15 606	8 500	20 000
2025	10 000	15 000	606	15 000	5 000	15 000
Total	$50 000		$50 000		$50 000	

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Making it Real

SIMPLIFIED DEPRECIATION RULES – INSTANT ASSET WRITE-OFF

There have been changes to the instant asset write-off.

From 12 March 2020 until 30 June 2020, the instant asset write-off:

- threshold amount for each asset is $150,000 (up from $30,000)
- eligibility has been expanded to cover businesses with an aggregated turnover of less than $500 million (up from $50 million).

Backing business investment – accelerated depreciation

From 12 March 2020 until 30 June 2021, the Backing business investment measure provides a time-limited (15-month) investment incentive to support business investment and economic growth by accelerating depreciation deductions. The key features of the incentive are as follows:

If you are not using the simplified depreciation rules for small business, you can claim a deduction of 50% of the cost or opening adjustable value of an eligible asset on installation. Existing depreciation rules apply to the balance of the asset's cost.

- Eligible businesses – businesses with aggregated turnover below $500 million.[1]

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Dual cab utilities are the most popular motor vehicles sold in Australia, not in small part due to the tax deductibility of the full purchase price for a business

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 that 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. With incentives to buy assets and receive an immediate write-off (full depreciation) for assets costing up to $150 000, depreciation and tax may be irrelevant, but remain very important for financial reporting.

Regardless of the method chosen, companies should disclose their choices in the notes to their financial statements so that comparisons can be made between different companies. This is an application of the qualitative characteristic of comparability. The disclosure is usually found in a note dedicated solely to PPE.

Science Photo Library/Look At Sciences/Hubert Raguetv

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

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CSL Analysis

Look at CSL's 'Note 8: Property, plant and equipment' in this book's appendix.

1 What method of depreciation does the company use?
2 Which assets have the shortest useful life and which the longest? What adjustments are made to residual values and useful life?

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Analysis:

1. CSL uses straight-line depreciation. Plant and equipment is expected to last three to 15 years and Buildings five to 40 years.
2. '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.'

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 depreciation estimates
- additional expenditures to improve the non-current asset
- declines in the asset's residual value (asset impairment).

Changes in depreciation estimates

Calculating depreciation expense requires that a company estimates 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 Suying Supply purchased a machine for $90 000 on 1 January 2019. Suying estimated at the time that the machine would have a 10-year useful life and a $10 000 residual value. Suying 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 2023, Suying decides that the machine will last only eight years (another four years) rather than the 10 years originally estimated and will have a residual value of only $6000 rather than $10 000. When these revisions are made, Suying does not correct the four previous depreciation expense entries of $8000 because they were based on reasonable estimates at the time. Instead, Suying 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 2019	$90 000
Less: Accumulated depreciation for four years (4 × $8000)	32 000
Carrying amount on 1 January 2023	$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 2023	$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 10, 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

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With this *new* depreciation expense calculated, Suying 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)		

So, Suying 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'.[2]

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 2019. 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 2023, 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 2024 and 2025.

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Is the work being carried out here capital expenditure (asset) or revenue expenditure (expense)?

Given this information, the $1000 is a 'revenue' expenditure and should be expensed as follows:

1 Jan. 2023	Maintenance Expense	1000	
	Cash		1000
	(To record normal maintenance)		

Assets	=	Liabilities	+	Equity
–1000				–1000

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. 2023	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:

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Carrying amount after the capital expenditure:	
Cost of the asset, 1 January 2019	$50 000
Less: Accumulated depreciation for four years	40 000
Carrying amount on 1 January 2023	$10 000
Add: Upgrades made on 1 January 2023	8 000
Updated carrying amount on 1 January 2023	$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 2023, 2024 and 2025, the company will record $6000 of depreciation expense each year.

Depreciation expense after capital expenditure:	
Updated carrying amount on 1 January 2023	$18 000
Less: Estimated residual value	0
Remaining depreciable amount on 1 January 2023	$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'.[3]

CSL Analysis

Look at CSL's Note 8 in this book's appendix. 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.[4]

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

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 Noncurrent Asset account is decreased to reflect the reduced value. This reduces assets.

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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'.[5]

Asset revaluations

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'.[6] The **revaluation model** states if 'fair value can be measured reliably the asset shall be carried at a revaluation amount'.[7] 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.

cost model
A model that posits that 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
A model that posits that if fair value can be measured reliably, the asset shall be carried at a revaluation amount.

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Assets are sometimes impaired because they are no longer in demand

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 gain/(loss) on defined benefit plans' (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.

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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,

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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 2021 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 2023 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 2023:

30 June 2023	Depreciation Expense	3 500	
	Accumulated Depreciation		3 500
	(To record the depreciation expense)		

As a result of this entry, the accumulated depreciation account is updated to a balance of $17 500 ($7000 in 2021, $7000 in 2022 and $3500 in 2023). 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 2023	12 500
Loss on sale	(500)

Because the asset's carrying amount of $12 500 exceeds the sale proceeds of $12 000, the company has 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 2024 for $8000. After updating depreciation, the Accumulated Depreciation account would have a balance of $22 750:

Three full years (2021, 2022, 2023)	$21 000
One-quarter of 2024 ($7000 × ¼)	1 750
Accumulated depreciation at 31 March 2024	$22 750

Therefore, the machine's carrying amount and the gain/loss on disposal at 31 March 2024 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 2024		7 250
Gain on sale		750

Because the sale proceeds of $8000 exceed the asset's carrying amount of $7250, the company has a $750 gain

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(revenue). With this information, the following journal entry can be prepared to record the disposal:

31 Mar. 2024	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.

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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 2022 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
$\text{Percentage Change in Account Balance} = \frac{\text{Dollar Change}}{\text{Prior year Balance}}$
Vertical analysis
$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}}$ or $\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

Exhibit 8.5 KALE ME CRAZY ACCOUNT BALANCES FROM THE 30 JUNE 2022 ANNUAL REPORT

Source	Accounts	2022 ($'000)	2021 ($'000)
Income statement	Total revenues	$ 70 567	$ 68 360
	Property and equipment, at cost	93 457	96 611
	Less: Accumulated depreciation	(32 694)	(33 657)
Balance sheet	Net property and equipment	60 762	62 954
	Total assets	85 385	88 175
Notes to financial statements	Depreciation expense	3 485	3 435

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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 (cost less accumulated depreciation) 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	60 763 – 62 954 = -2191	–2191 ÷ 62 954 = -3.5%
Depreciation expense	3485 – 3435 = 50	50 ÷ 3435 = +1.5%
Vertical analysis		
	2022	**2021**
Property and equipment	60 763 ÷ 85 384 = 71.2%	62 954 ÷ 88 175 = 71.4%
Depreciation expense	3485 ÷ 70 567 = 4.9%	3435 ÷ 68 360 = 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 1.5 per cent in depreciation expense from 2021 to 2022. 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 2022 non-current asset turnover ratio is calculated as follows:

70 567 ÷ (62 954 + 60 763) ÷ 2 = 1.14 times

The 1.14 ratio shows that KMC's total revenues for 2022 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. If 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 this book's appendix, calculate and interpret:

1 horizontal and vertical analyses of non-current assets and depreciation expense (see the Consolidated Statement of Cash Flows, 'Depreciation and amortisation')
2 non-current asset turnover ratio
3 average life and average age of non-current assets (see the Consolidated Statement of Cash Flows and 'Note 8: Property, Plant and Equipment').

Analysis:

1 Horizontal analysis
Non-current assets:

$9018.5 – $6774.3 = $2244.2 $2242.2 ÷ $6774.3 = 33.1%

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Depreciation and amortisation expense:

$419.8 – $375.5 = $44.3 $44.3 ÷ $375.5 = 11.8%

Vertical analysis

Non-current assets:

$9018.5 ÷ $15464.7 = 58.3%

Depreciation expense:

$419.8 ÷ $9150.8 = 4.6%

The horizontal analysis shows that while non-current assets increased substantially (almost one-third), PPE rose even more (36.4%). Surprisingly, then, depreciation expense was up much less (only 11.8%). The almost 80 per cent vertical analysis of non-current assets shows non-current assets are more important than current assets to CSL. The 4.6 per cent vertical analysis of depreciation expense indicates that while CSL has large non-current assets, depreciation expense consumes less than 5 cents per dollar of operating revenue in the most recent year.

2 Non-current asset turnover ratio

$9150.8 ÷ ($9018.5 + $6774.3) ÷ 2 = 1.16

The 1.16 non-current asset turnover ratio indicates that CSL generates $1.16 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:

$8784.3 ÷ $419.8 = 21.0 years

This shows that CSL's non-current assets on average last 21 years.

$2478.9 ÷ $419.8 = 5.9 years

The 5.9-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 and 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 2022 capital expenditures from the statement of cash flows

in thousands	2022	2021	2020
Property and equipment expenditures	$(6 407)	$(5 840)	$(5 226)

The negative number signifies a cash outflow. In 2022, KMC spent over $6.4 million in cash to purchase non-current assets. In the two previous years, the company spent about $5.9 million and $5.2 million. For the three years combined, this totals just under $17.5 million 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 $17.5 million 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 2022 operating cash flows from the statement of cash flows

in thousands	2022	2021	2020
Cash provided by operations	$17 752	$14 629	$13 025

CSL Analysis

Look at CSL's Consolidated Statement of Cash Flows in this book's appendix. How much cash has the company spent to acquire plant, property and equipment (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 CSL's cash flow statement, CSL spent $2324.4 million on PPE over the past two years, plus $346.8 million on intangibles and business acquired.

Its net capital expenditure (investing activity) in the most recent year was $1367.7 million, while its cash generated from operations was $2488.3 million. Thus, CSL generated more than enough cash (almost twice as much) to pay for its growth in non-current assets without having to borrow the cash, raise capital or dip into its retained earnings. But if you look further, of the $1120.6 million of free cash flow, $883.1 million was paid in dividends. What happened to the extra cash? Along with an increase in net borrowings ($1652.7 – $1399.2), $253.5 million mainly increased cash holdings and inventory. We look at cash flow statements in more detail in Chapter 12.

LO7 Intangible assets

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

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.

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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 more valuable to them.

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.

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.

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 (rented, leased) from McDonald's Corporation (the franchisor) the right to operate the restaurant.

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 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:

goodwill
An intangible asset equal to the excess that one company pays to acquire the net assets of another company.

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

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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 $2.1 billion of intangible assets (almost 14 per cent of total assets) made up of almost $1.2 billion of goodwill, almost $400 million of intellectual property and over $460 million of software. CSL only recognises goodwill as follows: 'Any excess of the fair value of the purchase consideration of an acquired business over the fair value of the identifiable net assets ... is recorded as goodwill'.[8]

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 just over 6 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

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.

amortisation
The process of spreading out the cost of an intangible asset over its useful life.

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.

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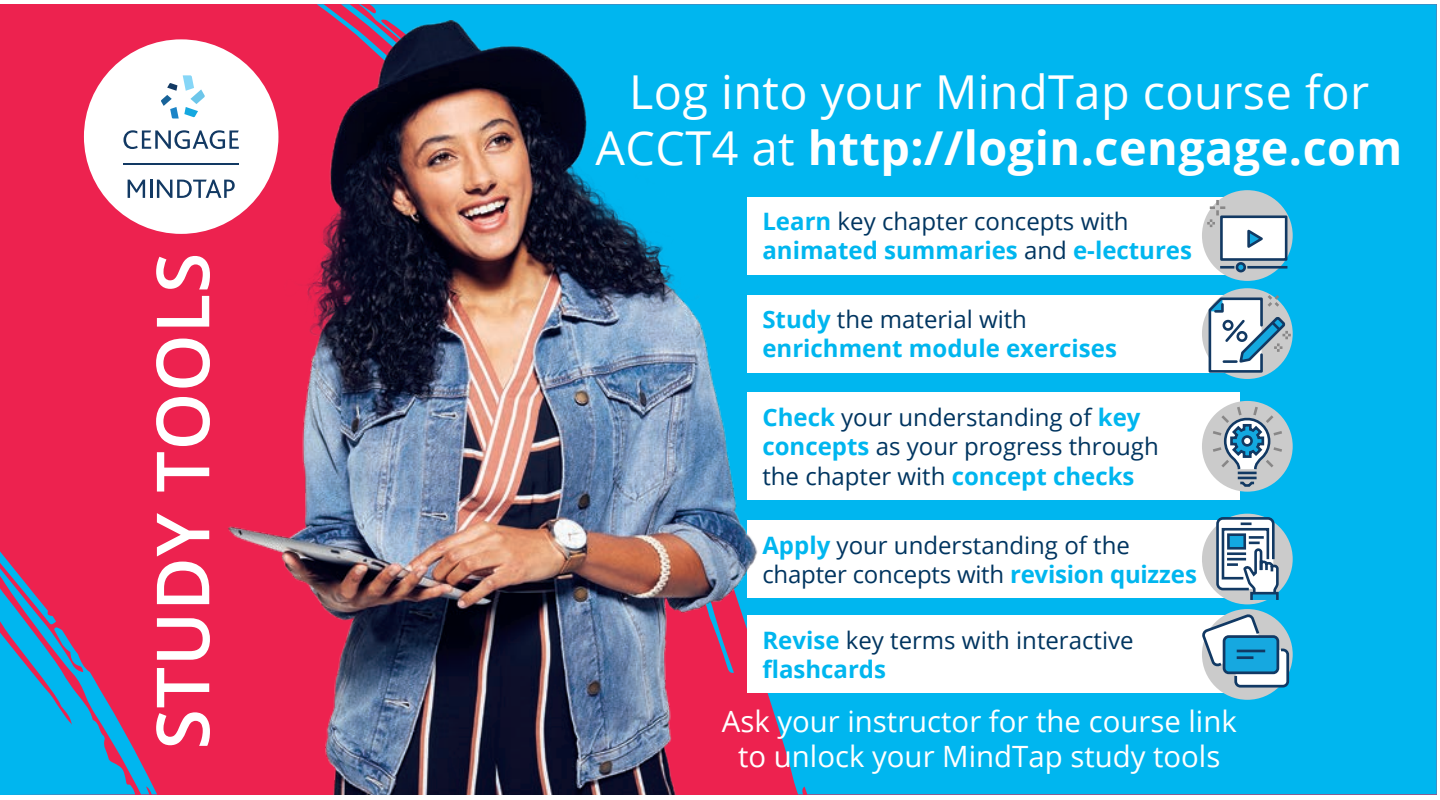
In its *Annual Report 2019/2020*, under 'Key Judgements and Estimates', CSL states:

> The impairment assessment process requires significant judgement. Determining whether goodwill and indefinite lived intangibles have been impaired requires an estimation of the recoverable amount of the cash generating units using a discounted cash flow methodology. The goodwill calculation uses cash flow projections based on operating budgets and a ten-year strategic business plan after which a terminal value ... is applied.'[9]

MINDTAP Test your understanding with the revision quizzes for this chapter.

Finally, intangibles with limited lives are subject to the same rules as plant, property and equipment when accounting for revaluations.

MINDTAP Review this material with the e-lecture.



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EXERCISES

1 Acquisition cost

LO1

Aadya Activities purchases equipment with a list price of $66 000. Regarding the purchase, Aadya:

i received a 2 per cent discount off the list price
ii paid shipping costs of $2400
iii paid $5250 to install the equipment, $3600 of which was for a unique stand for the equipment
iv paid insurance: $8400 for equipment, $900 for delivery and $7500 for a two-year policy to cover operations disruption
v paid $1800 to have the manufacturer train employees on safety features.

REQUIRED

Determine the acquisition cost of the equipment. Comment on why the $1800 of safety training was included or not included in the cost.

2 Acquisition cost

LO1

Emily incurred the following expenditures when purchasing land: $940 000 purchase price, $70 000 in stamp duty and $38 000 for clearing. She sold a building on the land for $16 000.

REQUIRED

Determine the acquisition cost of the land.

3 Determine net carrying amount LO2

Equipment is purchased for $201 600. It has an estimated useful life of 10 years and a residual (salvage) value of $1600.

REQUIRED

Assuming straight-line depreciation, determine the net carrying amount of the asset after three years.

4 Depreciation methods

LO2

Xing Pty Ltd purchases an excavator on 1 January for $150 000. The excavator has an estimated useful life of five years and an estimated residual value of $15 000.

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 and disadvantages of the two depreciation methods for financial reporting and for tax.

5 Depreciation methods

LO2

Saanvi Steel purchases a machine on 1 July for $18 000. The machine has an estimated useful life of seven years, during which time it is expected to produce 17 220 units. Residual value is estimated at $780. The machine produces 4650 and 4860 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 Depreciation methods

LO2

If Saanvi Steel can use one method of depreciation for financial reporting and another for tax, why shouldn't it also be able to use different estimated useful life and residual values?

7 Change in useful life

LO3

A business 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.

8 Change in estimates

LO2, 3

On 1 July 2022, Ananya 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, Ananya 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 2022–23 and 2023–24 financial years.
b Recalculate 2023–24 depreciation expense assuming that Ananya Activators leaves the useful life at eight years but reduces the residual value to $0.

9 Expenditures after acquisition

LO3

Vihaan Valuers acquired a new drone for $22 500 in 2021. At the end of 2024, accumulated depreciation on the drone was $7500. On 1 January 2025, Vihaan paid $600 for routine service on the drone and $2400 to update the software and add GPS and collision monitoring radar. The updates and additions are anticipated to extend the useful life of the drone by five years.

REQUIRED

Calculate the net book value of Vihaan's drone immediately after the service and updates and additions.

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10 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, $1250
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
ix wages of $52 000 for the technician for six months rebuilding and updating the studio
x a brass '8' purchased for $6 to attach to the front of the building
xi chairs taken from inventory for permanent use in the salesroom.

REQUIRED

Identify each expenditure as a capital or revenue expenditure and explain why the accountant should classify the expenditure as an 'expense' or 'asset'.

11 Impairment entry LO3

Fung Factories acquired equipment for $900 000. On 15 March 2022, Fung determines that the equipment is impaired by $130 000.

REQUIRED

Prepare the entry to record the impairment of the equipment.

12 Disposal LO4

Lihua Limited sells a building that has an original cost of $900 000 and an accumulated depreciation balance of $600 000.

REQUIRED

Prepare the journal entry to record the sale assuming the sales price was: (a) $300 000, (b) $285 000 and (c) $324 000.

13 Disposal LO2,4

On 1 January 2021, A&G Company pays $20 000 for equipment with a 10-year estimated life and a $2500 estimated residual value. On 1 January 2025, A&G sells the equipment for $9250 (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?

14 Evaluate non-current assets LO5

In its 2023 annual report, Meixiu 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, $252.

REQUIRED

a Calculate the non-current asset turnover ratio of Meixiu's business.
b Calculate the average useful life of Meixiu's non-current assets at the end of the 2023 financial year.
c Calculate the average age of Meixiu's non-current assets at the end of the 2023 financial year.

15 Evaluate non-current assets LO5

The following data was taken from the annual financial statements of Chenguang Company (all figures in thousands):

	Revenues	Non-current asset carrying amount
2020	8 563	395
2021	10 589	524
2022	13 584	687
2023	14 555	793

REQUIRED

Calculate the non-current asset turnover ratio for the four years presented. What does the trend in the ratio tell you about the company's performance?

16 Intangible assets LO7

Phoebe Pharmaceuticals incurred the following expenditures:

i Research costs of $1 800 000 were incurred to discover a cure for the common cold.
ii Phoebe paid $510 000 in development costs before it knew if it was technically feasible to make it as a product available for sale.
iii Phoebe paid about $360 000 on development but was not able to reliably measure the expenditure.
iv Phoebe incurred $540 000 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.

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PROBLEMS

17 Acquisition cost

LO 1

Sarah purchases an MRI machine with a list price of $2 766 000. Regarding the purchase, Sarah:

i received a 5 per cent discount off the list price by paying before delivery
ii paid shipping costs of $24 000
iii paid $525 000 to install the equipment, $260 000 of which was to reinforce the floor to withstand the weight of the MRI
iv paid $9000 to have the story of the installation of the MRI featured on the local news
v paid $8400 to insure the MRI
vi paid $6900 for a wireless safety cut-off switch
vii paid $18 000 to have the manufacturer train employees on the unique operating procedures.

REQUIRED

Determine the acquisition cost of the equipment (show calculations).

18 Depreciation methods

LO2, 4

Daiyu Development Industries purchased a depreciable asset for $150 000 on 1 July 2021. 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, Daiyu 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 2022 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 2024 for $90 000, or (ii) at the end June 2025 for $48 000?
d How is the gain or loss on the disposal of the equipment presented in the financial statements, assuming no revaluations?

19 Various transactions

LO 1, 2, 3, 4

On 1 January 2022, Fenfang Foods purchased a building for a cash price of $1192 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, Fenfang 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.

1/7/2023	New information caused the estimated life of the van to be reduced to three years total instead of five years.
17/12/2023	Repaired air conditioning system in the building that broke down for one week, $5000.
1/7/2024	Renovated bottom floor of the building for $115 000, adding three years useful life to the building.
1/1/2025	Sold the van for $5350.
1/7/2025	Sold the building for $1163 000.

REQUIRED

Prepare all entries for 2022 to 2025. Fenfang Foods' annual depreciation expense is calculated on 30 June each financial year.

20 Non-current asset transactions and reporting

LO1, 2, 4

A partial portion of the balance sheet at 31 December 2021 for Luli 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 2022:

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 residual value for $90 000 cash. The building was originally purchased on 31 December 2008 for $120 000 and depreciated using the straight-line method.
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 Luli's balance sheet at 31 December 2022.

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21 Evaluate non-current assets

LO2, 5

The following information was available from the 2023 financial statements of Papa Peng's Pizza:

	2022	2021
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.

22 Amortisation of intangible assets

LO7

Ping 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 Ping estimate it will only be able to use the copyright for the next five years. Ping 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.

CASES

23 Research and analysis

LO1, 5, 6

Access the most recent annual report of CSL, or that 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.

24 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. If the refurbishment was eligible for the 'instant asset write-off', why would this option be preferable?

25 Tweet communication

LO7

In 280 characters or less explain what impairment is when related to an intangible asset of indefinite life such as goodwill.

26 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.

MINDTAP Download the Enrichment Modules for further practice

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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), including interest payments and eventual payment on maturity. 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 three Extension sections cover more complex aspects of liabilities associated with the time value of money.

LO1 Current liabilities

A current liability is an obligation of a business that is expected to be paid (or satisfied) within one year (or within 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 or the 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.

iStock.com/kali9

A deposit in a bank is an asset to the customer, but it is a liability to the bank

Learning Objectives

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

- **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** EXTENSION: the time value of money.
- **LO8** EXTENSION: determine a bond's issue price.
- **LO9** EXTENSION: record bond interest payments under the effective interest method.

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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 your drone filming business from Chapter 1, Floating and 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			1100		
Service Revenue					1000
GST Payable					100
(To record service provided plus GST)					
Assets		=	Liabilities	+	Equity
+1100			+100		+1000

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 (expense) 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, cars, comics, 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 a specified amount, which in this case would be about 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 10 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		

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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.

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 it will reach the threshold. Payroll tax may be seen as a disincentive to employ more people. Let us 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 other costs like 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 but focused on the party lending the money; that is, the accounting for the notes receivable. Now we focus on the party borrowing the money; that is, the accounting for notes payable.

When a company issues a promissory note to borrow money (or delay payment for goods or services – which is 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		

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 (the amount borrowed and interest).

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).

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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. For example, on a 30-year, $500 000, 5 per cent mortgage, the monthly payment would be approximately $2684. Of the first payment, $2084 is interest and only $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 and $7500 a current liability. 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 examples, keep in mind that regardless of how the liability is classified on the balance sheet, the company is borrowing and repaying $500 000 principal plus $466 240 of interest. 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, the balance sheet reporting is important because it tells users of the financial statements what obligations will require paying 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 Consolidated statement of financial position (balance sheet) as at 30 June 2020 of the Chartered Accountants Australia and New Zealand (CA ANZ):[1]

CA ANZ 2020 and 2019 Current Liabilities (in thousands)

	Notes	2020	2019
Contract liability – fees in advance	11	77 581	69 851
Trade and other payables	12	17 461	17 162
Provisions	13	5 677	4 854
Lease liabilities	9	2 693	2 510
Total current liabilities		103 412	94 377

CA ANZ reports over $110 million in current liabilities in 2020, substantially up (almost 10%) on 2019. This total is made up mostly of fees in advance, primarily members who have paid their annual membership fees for the next financial year in the previous financial year (it is usually then a tax deduction for the member in the financial year paid – if you were wondering why they would pay in advance). 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 (again a tax deduction). Notes 9, 11, 12 and 13 of the financial statements provide more detail.

MINDTAP Review this material with the e-lecture.

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

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most common and largest non-current liabilities often arise from borrowing money. While the CA ANZ had over $100 million in current liabilities, they have just over $42 million in non-current liabilities. This is not surprising given they use members' fees to provide services to members (including attracting students like you when you graduate into the profession). Most businesses use shareholders' and borrowed money to provide goods and services to clients or 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.

LO3 Bonds

A financial instrument that companies use to borrow money on a long-term basis is a bond (or debenture). 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 this book's appendix. Using both statements, explain what happened to short-term debt (current liabilities) during 2020.

Analysis:

CSL decreased its current liabilities by just over 2 per cent in 2020. The balance sheet shows the balance of Total Current Liabilities going from $2188.2 million in 2019 to $4141.5 million in 2020, using up almost $50 million in cash to the business. The cash flow statement shows the increase in payables using up cash. The decrease in current borrowings is included with repayment of non-current borrowings in the Financing section of the cash flows and is not even separated in Note 11.

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 (investment) and records an asset.

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). Usually bonds have a face value, a stated interest rate (although this may not be fixed but change or 'float' with market interest rates) 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** (or principal value) is the amount that the company wants to borrow, but more accurately the amount that must be repaid to the creditor (lender) upon maturity of the bond. 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 in the contract or traditionally on the certificate that is given to the creditor 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 (sold). 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.

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**.

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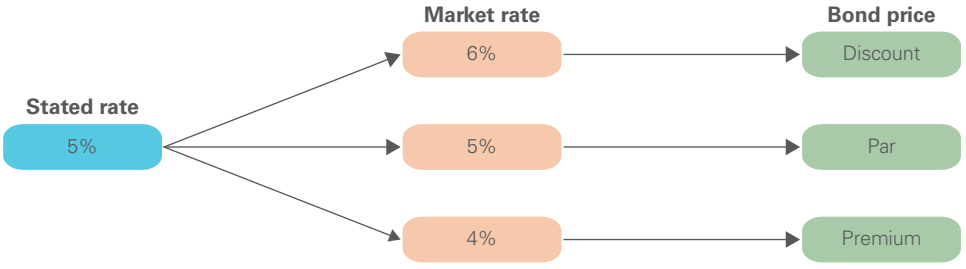
Exhibit 9.1 EXAMPLE OF A BOND CERTIFICATE

Tyler/Image

Exhibit 9.2 PREMIUM OR DISCOUNT



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 face value or par.

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. Bonds that are issued for more than face value are issued at a *premium*.

Actual issue prices are calculated using present value calculations (see the Extension section later in

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the chapter). Here, we take as given 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.

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Another kind of bond

Bonds issued at face value

MINDTAP Learn more by watching the animation: Bonds issued at face value

To illustrate a bond issued at face value, suppose that on 1 July 2022 Ma Mediators sells bonds with a face value of $100 000. The bonds carry a 4 per cent interest rate with a 1 July 2032 maturity date. Interest is to be paid semi-annually on 1 July and 1 January. Because the market rate of interest is also 4 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. 2022	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 very similar to the entry recording the note payable earlier in the chapter. This is to be expected 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 × 0.04 × 6/12 months
= $2000

Therefore, on 1 January, Ma would record its interest payment with the following entry:

1 Jan. 2023	Interest Expense		2 000		
	Cash				2 000
	(To record payment of interest)				
	Assets	=	Liabilities	+	Equity
	–2 000				–2 000

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 $2000 interest payment is scheduled for 1 July 2023. 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 and the liability at the end of the period. The second entry records Ma's payment on 1 July 2023. These two entries are shown as follows:

30 Jun. 2023	Interest Expense		2 000		
	Interest Payable				2 000
	(To record accrual of interest)				
	Assets	=	Liabilities	+	Equity
			+2 000		–2 000

1 Jul. 2023	Interest Payable		2 000		
	Cash				2 000
	(To record payment of interest)				
	Assets	=	Liabilities	+	Equity
	–2 000		–2 000		

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.

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Interest is paid and recorded in the same manner every 30 June, 1 July and 1 January for 10 years until 1 July 2032, the maturity date. Over time, Ma will make 20 payments of $2000 for a total of $40 000 of interest paid. Thus, the total cost of borrowing the $100 000 over the 10 years is $40 000 ($100 000 × 4% × 10 years).

Recording the maturity

On the 1 July 2032 maturity date, Ma would record the repayment of the bonds (in addition to the last interest payment) as follows.

1 Jul. 2032	Bonds Payable			100 000	
	Cash				100 000
	(To record repayment of the bonds)				
	Assets	=	Liabilities	+	Equity
	−100 000		−100 000		

Bonds issued at a discount

MINDTAP Learn more by watching the animation: Bonds issued at a discount

To illustrate a bond issued at a discount, suppose that on 1 July 2023 Nguyen Negotiators issues bonds with a face value of $200 000, a stated interest rate of 7 per cent and a maturity date of 30 June 2028. 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. 2023	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 2023
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

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is demonstrated here. However, the effective interest method is also demonstrated later in the chapter.

straight-line method of amortisation
A 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 2024.

30 June 2024	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 2024
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 (i.e. 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.

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 (interest expense) 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

Exhibit 9.3 AMORTISATION SCHEDULE – BONDS ISSUED AT A DISCOUNT

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	1600	198 400
5	14 000	800	14 800	800	199 200
	$70 000	$4 000	$74 000	0	$200 000

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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 (interest expense)	$74 000

Recording the maturity

In addition to the interest payment (and amortisation of discount), Nguyen must repay $200 000 on 30 June 2028 to satisfy its obligation. The entry to repay the bonds requires a decrease to both Cash and the Bonds Payable account.

30 Jun. 2028	Bonds Payable			200 000	
	Cash				200 000
	(To record repayment of the bonds)				
	Assets	=	Liabilities	+	Equity
	–200 000		–200 000		

Bonds issued at a premium

MINDTAP Learn more by watching the animation: Bonds issued at a premium

To illustrate the accounting for a bond issued at a premium, suppose that on 1 January 2022 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 2024. 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. 2022	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 immediately after the issue is shown as follows:

	1 Jan. 2022
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 both 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:

$$\begin{aligned}\text{Interest Paid} &= \text{Face Value} \times \text{Stated Interest Rate} \times \text{Time Outstanding} \\ &= \$50\,000 \times 0.08 \times 12/12 \text{ months} \\ &= \$4000\end{aligned}$$

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.

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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. 2022
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 (interest expense)	$11 400

Recording the maturity

Amber must repay $50 000 on 31 December 2024 to satisfy its obligation. The entry to repay the bonds requires a decrease to both Cash and Bonds Payable:

31 Dec. 2024	Bonds Payable	50 000	
	Cash		50 000
	(To record repayment of the bonds)		

Assets	=	Liabilities	+	Equity
–50 000		–50 000		

MINDTAP Review this material with the e-lecture.

Exhibit 9.4 AMORTISATION SCHEDULE – BONDS ISSUED AT A PREMIUM

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		

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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 2023 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 2027. 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 2029. 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 2029 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. 2029	19 900
Loss on redemption	$ 700

Wollongong would record the redemption with the following journal entry (figures in thousands):

Exhibit 9.5 CONDENSED AMORTISATION SCHEDULE (IN THOUSANDS OF $): BOND ISSUED AT A DISCOUNT

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
				$800	$19 200
31/12/23	$2 000	$100	$2 100	700	19 300
⋮	⋮	⋮	⋮	⋮	⋮
31/12/28	2 000	100	2 100	200	19 800
31/12/29	2 000	100	2 100	100	19 900
31/12/30	2 000	1000	2 100	0	20 000

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31 Dec. 2029	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.

MINDTAP Review this material with the e-lecture.

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, 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, although there are two main types of lease – operating leases and finance leases – Accounting Standard AASB 16 *Leases* 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]

lease
A contractual agreement in which the lessee obtains the right to use an asset by making periodic payments to the lessor.

Making it Real

CLASS ACTION AGAINST CLASS ACTION LAW FIRM

Alamy Stock Photo/Mick Sinclair

In yet another chapter of the financial difficulties of class action law firm Slater and Gordon (S&G), a group of international hedge funds led by Anchorage Capital Group decided to swap (some) bonds they held 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 was the first law firm in the world to 'go public' (formed into a public company) and was 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 A$1.2 billion). 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.

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off-balance-sheet financing
Where a company's future obligations regarding an asset are not reported as a liability on the balance sheet.

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 require future lease commitments to be disclosed in the notes to the financial statements. CSL in Note 13 (see this book's appendix) reports Operating Lease commitments in 2020 of $668.1 million, but only $25.4 million in Finance Lease commitments.

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.

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.

contingent liability
An obligation that arises from an existing condition whose outcome is uncertain and whose resolution depends on a future event.

Contingent liabilities

A **contingent liability** is an obligation that arises from an existing condition where 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).

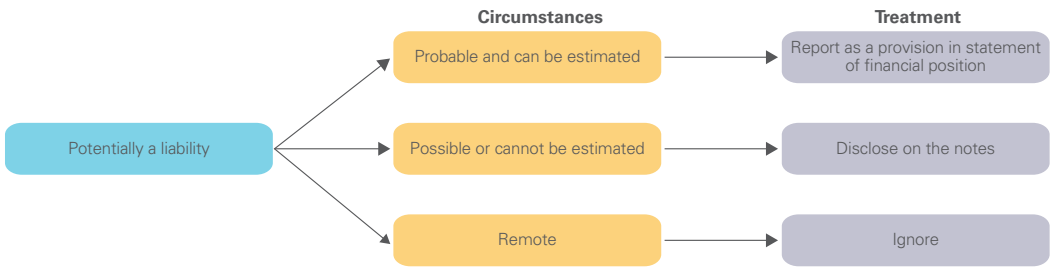
The Accounting Standard AASB 137 *Provisions, Contingent Liabilities and Contingent Assets* ensures:

> 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.[3]

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).[4]

Exhibit 9.6 POTENTIAL LIABILITY



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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 almost $200 million in 2020 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 'Note 13: Commitments and Contingencies' section in this book's appendix. How much does the company potentially owe?

Analysis:

In its note, CSL's disclosures of Capital Commitments are $585 million in 2020, down from $950 million in 2019. CSL also reports litigation under 'Contingent assets and liabilities':

The Group is involved in litigation in the ordinary course of business, including litigation for breach of contract and other claims. The Group remains subject to certain patent infringement actions brought by competitors. CSL is highly confident in our intellectual property positions which are the product of many years of innovative research by the Group. The Company is vigorously defending against the claims.[5]

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 requires information from the company's balance sheet, found in **Exhibit 9.7**, excerpted from ABC's *2022 Annual Report*.

Exhibit 9.7 **ACCOUNT BALANCES FROM AUSSIE BEACH CHRISTMAS' *2022 ANNUAL REPORT***

Source	Accounts	2022 ($ millions)	2021 ($ millions)
Balance sheet	Current Assets	$1808	$1683
	Total Assets	2964	2806
	Current Liabilities	1365	1226
	Total Liabilities	1889	1782

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

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or total revenues for income statement accounts. These calculations are summarised as follows:

KEY FORMULA 9.5: HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \frac{\text{Current Year Balance} - \text{Prior Year Balance}}{\text{Units Available for Sale}}$$

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

KEY FORMULA 9.6: VERTICAL ANALYSIS

$$\text{Percentage} = \frac{\text{Account Balance}}{\text{Total Assets}}\ \text{(Balance sheet)} \quad \text{or} \quad \frac{\text{Account Balance}}{\text{Net Sales or Revenue}}\ \text{(Income Statement)}$$

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	1889 – 1782 = 107	107 ÷ 1782 = 6.0%
Vertical analysis		
	2022	**2021**
Total liabilities	1889 ÷ 2964 = 63.7%	1782 ÷ 2806 = 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 were 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.

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.

current ratio
A ratio that compares a company's current assets to its current liabilities and measures its ability to pay current liabilities.

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 2022 current ratio is calculated as follows:

$$\frac{\$\ 1808}{1365} = 1.32$$

The 1.32 ratio shows that in 2022, 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 2021 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.

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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
A ratio that 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 2022 debt to assets ratio is calculated as follows:

$$\frac{\$\ 1889}{\$\ 2964} = 0.637$$

The 0.637 ratio shows that in 2022, 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.

MINDTAP Review this material with the e-lecture.

CSL Analysis

Using CSL's information in this book's appendix, calculate and interpret:
1 horizontal and vertical analyses of liabilities
2 the current ratio
3 the debt to assets ratio.

Analysis:

1 Horizontal analysis

Current Liabilities (2142 – 2188) ÷ 2188 = 2.1% negative

Non-current Liabilities (6796 – 4875) ÷ 4875 = 39.4%

Total Liabilities (8937 – 7063) ÷ 7063 = 26.5%

Vertical analysis

Total Liabilities ÷ Total Assets
8937 ÷ 15 465 = 57.8%

The 26.5 per cent horizontal analysis reflects a substantial increase in obligations, all from non-current liabilities. The 57.8 per cent vertical analysis of total liabilities shows that well over half of the company's assets are financed through debt, with just over 40 per cent through equity.

2 Current ratio

6446 ÷ 2142 = 3.0

The 3.0 current ratio indicates that CSL has $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.

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3 Debt to assets ratio

Total Liabilities ÷ Total Assets
8937 ÷ 15 465 = 57.8%

You will note the 57.8 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 1.4 to 1 (136.9%). 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 over $300 in 2020.

LO7 EXTENSION: the time value of money

Comparing last year's results to this year, especially in times of low interest rates and low inflation, does not cause too many issues, but comparing an amount invested today with the expected payout in 50 years is at best naive and misleading, and at worst dishonest.

A dollar today is preferred to a dollar in one year for three basic reasons: interest ($1 today can be invested to give more than $1 in a year), inflation ($1 today will generally buy more than $1 in a year) and risk (there is no certainty that in a year there will be the $1 to collect). In the same way we would prefer to pay $1 in the future than today. Combined, these three reasons usually mean the discount rate is considerably higher than interest rates.

The time value of money, or discounted cash flows, is based on the concept of compound interest.

compound interest
Where interest is reinvested and interest is earned on the interest reinvested.

Compound interest is when interest is reinvested (not withdrawn) and then in the second year interest is earned on the interest reinvested. If we invest $1.00 at 10% for three years, after one year we have $1.10 ($1 × 10% plus the original $1 or just $1 × 1.1). At the beginning of the second year we reinvest the *$1.10* (not just the original $1.00) and at the end of the second year we have $1.21 ($1.10 × 1.1). Reinvesting the $1.21 at the beginning of the third year gives us $1.331 at the end of the third year. Therefore, with a discount rate of 10%, $1.331 in three years is considered to be equivalent to $1.00 today.

present value (PV)
The amount of future cash flows discounted to their equivalent worth today.

We call this the **present value (PV)**, which is the amount of future cash flows discounted to their equivalent worth today. Following the same process, $1.00 in three years must be equivalent to less than $1.00 today. Or to put it another way, how much would we need to invest today to have $1.00 in three years? $0.7513.

These numbers can be arrived at by using tables or formulas (which can be calculated by hand, with a financial calculator, with Excel or via the internet). At this stage tables are the simplest.

Exhibit 9.8 is a small part of a future value tables for five years (periods) for 8 per cent, 10 per cent and 12 per cent. Future values show the compound interest as demonstrated above. Note for three years at 10% the factor shown is 1.3310, the same as the $1.331 arrived at above. After five years the figure would be $1.6105. Of course, one cannot have 0.05 of one cent, but for large dollar amounts the four decimal places may be insufficient.

Exhibit 9.8 FUTURE VALUES

Future Values: $(1 + r)^n$			
Periods	Interest Rate		
	8%	10%	12%
1	1.0800	1.1000	1.1200
2	1.1664	1.2100	1.2544
3	1.2597	1.3310	1.4049
4	1.3605	1.4641	1.5735
5	1.4693	1.6105	1.7623

With ready access to Excel, calculations are easier: selecting 'Formula', 'Financial', 'FV', then 10 per cent interest rate (Rate), five periods (Nper) with a present value (PV) of, say, $1 million gives a more accurate FV of $1 610 510.00, $10 more than the above table indicates, but $10 in $1 million over five years is probably not material (would not change a decision).

Moving in the other direction are present values, as seen in **Exhibit 9.9**. In five years, what would $1.6105 be equivalent to today, given a discount rate of 10 per cent? (Yes, it should $1.00.)

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Exhibit 9.9 PRESENT VALUES

Present Values			
	Discount Rate		
Periods	8%	10%	12%
1	0.9259	0.9091	0.8929
2	0.8573	0.8264	0.7972
3	0.7938	0.7513	0.7118
4	0.7350	0.6830	0.6355
5	0.6806	0.6209	0.5674

As with using future values tables, $1.6105 × 0.6209 (from the table 10% and five periods) = $0.99995945 not $1.00, but this is the limitation of using the factors from both tables rather than the formula.

Again, Excel calculations are even easier: selecting 'Formula', 'Financial', 'PV' with an 8 per cent discount rate this time, five periods and a future value (FV) of, say, $1 million gives a PV of $680 583.20. It is a little more accurate than the above PV table would give ($680 600), but it is still less than a $17 difference for $1 million over five years.

A comprehensive set of the above two tables is all that is needed to determine present and future values, but for ease of calculating cash flows rather than a single future cash amount we will briefly look at the annuity table. An annuity is a regular receipt or payment of cash.

Annuities (see **Exhibit 9.10**) highlight the time value of money (TVM). Ignoring the TVM means $1 given every year for the next 100 years could be called a $100 gift, but if the interest rate was 10 per cent, an investment of just $10 would give us $1 of interest a year not just for 100 years but for eternity. (So could this be called the infinite gift?)

Exhibit 9.10 ANNUITY TABLE

Present Value of an Annuity			
Periods	Discount Rate		
	8%	10%	12%
1	0.9259	0.9091	0.8929
2	1.7833	1.7355	1.6901
3	2.5771	2.4869	2.4018
4	3.3121	3.1699	3.0373
5	3.9927	3.7908	3.6048

What is the PV of $1 each year for five years? From the table for a 10 per cent discount rate and five years, it is the factor of 3.7908, so $1 × 3.7908 = $3.79. Which means if we invested (deposited in a bank account) $3.79 at 10 per cent, at the end of each year we could withdraw $1. In the fifth year the $1 withdrawal would leave nothing in the investment (bank account). The 10 per cent rate may seem very high, but remember this primarily reflects the risk. That is why no bank with the government guarantee on savings will offer much more than 1 per cent.

In Excel we use the same Formula, Financial selections, but this time with NPV (net present value). The rate is 10 per cent and for value 1, 2, 3, 4 and 5 let us make each $1 million. The present value of the annuity is an accurate $3 790 786.77.

Note in the above table the first line is the same as the PV table, because an annuity for one year is just a single sum. Further, if we add the PV's from the five periods (0.9091 + 0.8264 + 0.7513 + 0.6830 + 0.6209) we get 3.7908 (actually we get 3.7907 due to the rounding in these tables), which is not surprising given an annuity is simply the sum of $1 in one year plus $1 in two years and so on up to five years.

Often investments provide both an annuity and a lump sum at the end. Consider the example of investing in an old pinball machine. The net return is $1000 every six months with the machine to be sold for $2000 in 30 months. (This example demonstrates why we use 'periods' rather than years, because cash flows may be monthly, quarterly or half-yearly, not just annually.)

So we have an annuity of $1000 for five periods and $2000 at the end of the fifth period. Given the risk involved we use a discount rate of 8 per cent every six months (our period). For the annuity it is $1000 × 3.9927 (PV of an annuity at 8% for five periods) = $3992.70 plus $2000 × 0.6806 (PV at 8% at period 5) = $1361.20. Combined we have $5353.90, which means we would not be willing to currently pay more than $5353.90 for such an investment.

In the next two sections we use the above tables. As with the above, if you use the formulas you will get a more precise answer, but probably no clearer guidance, as we are now dealing with estimates of future cash flows and choosing discount (interest) rates, which are often arbitrary.

LO8 EXTENSION: 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

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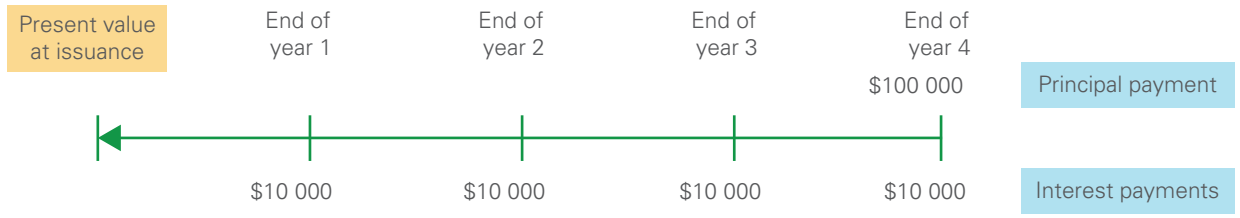
Exhibit 9.11 CHIA COMPANY FUTURE CASH FLOWS



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 for bonds of that risk level.

To illustrate, suppose that the market rate of interest is 8 per cent when the Chia 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 9.11**.

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 **Exhibit 9.9** above. 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 **Exhibit 9.10** above. (Recall that 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.

Exhibit 9.12 CALCULATIONS OF BOND ISSUE PRICES

	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

Therefore, the present value of the four $10 000 annual payments is $33 121 ($10 000 × 3.3121).

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 9.12**.

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.

LO9 EXTENSION: 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.

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.

effective interest method of amortisation
A method that amortises the bond discount or premium so that interest expense each period is a constant percentage of the bond's carrying amount.

KEY FORMULA 9.9: INTEREST EXPENSE (EFFECTIVE INTEREST METHOD)

Interest Expense = Carrying Amount
× Market Rate of Interest at Issue
× Time Outstanding

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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 continue the Chia Company examples, starting first with the discount example.

Discount example

For the Chia 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	$ 1271

With these values, Chia 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 9.13** (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.

Exhibit 9.13 AMORTISATION SCHEDULE OF BOND DISCOUNT USING EFFECTIVE INTEREST METHOD

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
Totals	$40 000	$6 077	$46 077		

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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		

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	$ 1470

With these values, Chia would record the following entry on the first interest payment date:

Payment 1	Interest Expense			8 530	
	Premium on Bonds Payable			1470	
	Cash				10 000
	(To record the first bond payment)				
	Assets	=	Liabilities	+	Equity
	–10 000		–1470		–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 9.14** (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.

Exhibit 9.14 AMORTISATION SCHEDULE OF BOND PREMIUM USING EFFECTIVE INTEREST METHOD

Interest payment	Interest paid	Discount amortised	Interest expense	Unamortised discount	Carrying amount
				$6 621	$106 621
1	$10 000	$1470	$ 8 530	5 151	105 151
2	10 000	1588	8 412	3 563	103 563
3	10 000	1715	8 285	1848	101 848
4	10 000	1848	8 152	0	100 000
	$40 000	$6 621	$33 379		

MINDTAP Test your understanding with the revision quizzes for this chapter.

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EXERCISES

1 Current liabilities LO1

Siu Software Store has total cash 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, 2, 3

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 ATO, based on the annual income of the business
iv money owed to the state government based on the total payroll
v money owed to the bank on a note due in July
vi 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, 4 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 $240 000 during the month of June. The following were withholdings related to these salaries: $15 000 for health insurance, $6000 for voluntary superannuation contributions by the employees and $27 000 for employee 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 $29 400.

5 Recording and reporting notes payable LO1, 2

On 1 July 2022, Williams Company borrows $1 000 000 from the bank by signing a $1 000 000, 4 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 2022.
b Prepare the journal entry for the accrued interest at 31 December 2022.
c Prepare the journal entry for payment of interest on 30 June 2023, assuming a reversing entry was ***not*** made on 1 January 2023.
d How would Williams report the note payable on its 31 December 2022 and 2023 balance sheets?

6 Recording bonds and interest LO2, 3

Gazal Galleries issued $500 000 of 10-year bonds on 1 January 2022. The bonds pay 4 per cent interest semi-annually on 1 July and 1 January. The market rate of interest for this level of risk on the date of issue was 4 per cent.

REQUIRED

a Prepare all journal entries necessary in 2022 assuming a 30 June end of financial year.
b How would the issue price change if the market rate was lower than 4 per cent? Higher than 4 per cent?
c What will be recorded in 2022 in the financing section of the statement of cash flows?

7 Recording bonds at a premium and a discount LO3

On 1 January 2023, Tran Ltd issues $9 million, five-year, 5 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 2023 assuming the bonds were issued at: (a) 96, and (b) 103.

8 Bond amortisation LO3

On 1 July 2022, XYZ Company issues $4 million, five-year, 4 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?

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9 Bond redemption

LO4

After making a semi-annual interest payment, the carrying amount of Lewis Limited'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 Lewis 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 12-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

Talia Toys had sales of $2.5 million during the 2022–23 financial year. In 2021–22, 5 per cent of sales were returned for a refund because of defects, but Talia believes that recent product changes will reduce sales returns (warranty) expense to about 3 per cent of 2022–23 sales.

REQUIRED

a What amount is Talia expecting to refund customers for purchases made in 2022–23?
b Should this amount be reported as a liability on the financial statements? Why or why not?
c Is Talia using a reasonable means to estimate warranty expense?
d If Talia 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 Wire 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 EXTENSION: time value of money

LO7

Calculate the present value of a $100 annuity for 10 years if the discount rate is 3%. (PV factor of an ordinary annuity at 3% for 10 years is 8.5302). If the interest rate were 2%, would the present value be higher or lower?

14 EXTENSION: calculate bond issue price

LO8

The market rate of interest was 7 per cent when Greene Corporation issued a $10 000, five-year bond that pays interest annually at a rate of 10 per cent. Present value of the principal is $7130. The present value of the interest payments is $3791.

REQUIRED

Calculate the amount of premium or discount at the time of issue.

15 EXTENSION: bond interest and amortisation

LO8, 9

On 1 July 2022, Theo 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. Theo uses the effective interest method of amortisation.

REQUIRED

a Determine the issue price of the bond by using the appropriate Exhibits in the chapter.
b Prepare the entry for the first interest payment on 30 June 2023.
c Prepare an amortisation schedule for the bond.

PROBLEMS

16 Recording and reporting current liabilities

LO1

The following is a list of liability accounts on the ledger of Chew House on 1 January:

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GST Payable	$22 500
Accounts Payable	28 500
Unearned Service Revenue	49 500

The following transactions occurred during the month of January:

1 January	Borrowed $75 000 from Perth Bank on a six-month, 6 per cent note.
9 January	Provided service for customers who had paid $18 000 in advance (including GST).
15 January	Paid ATO for GST collected in December, $11 500.
18 January	Bought inventory on credit for $36 000 plus GST.
23 January	Sold goods on credit for $9000, plus 10 per cent GST.

The employees of Chew House earned gross salaries of $135 000 during January. Withholdings were $12 000 for income tax and $5700 for voluntary superannuation contributions. In addition, state payroll tax was $7500. 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.

17 Bond presentation, interest and redemption

LO2, 3, 4

The following is an excerpt taken from the 30 June 2024 balance sheet of the Wimbledon Company:

Current liabilities	
Bond interest payable	$ 64 000
Non-current liabilities	
Bonds payable	1600 000
Less: Discount on bonds payable	(30 000)
Carrying amount	1570 000

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 2024.
b Prepare the journal entry to amortise the bond discount and pay the interest on 1 January 2025.
c Prepare the journal entry to record the redemption of the bonds on 1 January 2025, after the interest has been paid.
d Prepare the adjusting journal entry for 30 June 2025, *assuming that the bonds were not redeemed.*

18 Bond issue, interest, redemption and reporting

LO3, 4

Gateway Unlimited sold $6 million of six-year, 10 per cent bonds on 1 January 2022. 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 2022 and 2023 and show how the bonds would be reported on the 31 December balance sheet.
b How would the 2022 statement of cash flows be affected by the bonds?
c Prepare a bond amortisation schedule.
d On 1 July 2026, after the interest payment, Gateway redeems the bonds for 101. Prepare the entry to record the redemption.
e How would the 2026 statement of cash flows be affected by the redemption?

19 Analysing liabilities

LO6

MNO Limited's board of directors is having its annual meeting to analyse the performance of the business. One area the board is focusing on is total liabilities. The following are selected items of the 30 June 2023 balance sheet:

	30 June 2023	30 June 2022
Total assets	$2 807 610	$7 706 675
Total liabilities	1726 290	1688 565
Total equity	1081320	1018 110

REQUIRED

Conduct horizontal and vertical analyses of total liabilities and interpret the results. Explain whether or not MNO should be pleased with its financial position based on these calculations.

20 EXTENSION: comparing amortisation methods

LO9

On 1 January 2022, LED issues bonds with a face value of $600 000. These bonds have a stated interest rate of 3 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 4 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?

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CASES

21 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 more debt?

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, new debt or convert debt to equity to retire existing debt?

e Based on your answers above, write a paragraph explaining your opinion of the company's liability position. Use your answers as supporting facts.

22 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 financial 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.

23 SMS Communication

LO1

In 144 characters or fewer explain the difference, if any, between *debt* and *liabilities.*

24 Ethics in accounting

LO1, 2, 6

Your company has debt (non-current liabilities) that requires the maintenance of a current ratio of 2 or higher. If the ratio drops below that value, the lender can increase the interest rate from 3 to 6 per cent (i.e. double, paying twice as much interest). Recently, the company's current ratio has been comfortably above 2, but when some long-term debt maturing in the following year is reported as current liabilities, the ratio will fall below 2. 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', she 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', 'ABC Learning liabilities' or 'Allco Finance Group liabilities' and discuss if the classification of liabilities is more than an ethical issue.

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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 the 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.

Queensland

PARTNERSHIP ACT 1891

TABLE OF PROVISIONS

Section		Page
1	Short title	5
2	Commencement of Act	5
3	Interpretation clause	5
	Nature of partnership	
5	Definition of "partnership"	5
6	Rules for determining existence of partnership	6
7	Postponement of rights of person lending or selling in consideration of share of profits in case of insolvency	7
	Relations of partners to persons dealing with them	
8	Power of partner to bind the firm	8
9	Partners bound by acts on behalf of firm	8
10	Partner using credit of firm for private purposes	8
11	Effect of notice that firm will not be bound by acts of partner	8
12	Liability of partners	9
13	Liability of the firm for wrongs	9
14	Misapplication of money or property received for or in custody of the firm	9
15	Liability for wrongs joint and several	10
16	Improper employment of trust property for partnership purposes	10
17	Persons liable by 'holding out'	10
18	Admissions and representations of partners	11
19	Notice to acting partner to be notice to the firm	11
20	Liabilities of incoming and outgoing partners	11
21	Revocation of continuing guaranty by change in firm	11
	Relations of partners to one another	
22	Variation by consent of terms of partnership	12

Queensland Parliamentary Counsel

All states in Australia enacted a Partnership Act before Federation

Learning Objectives

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

- **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.

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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). This chapter explores the partnership and describes 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 1891, most state governments in Australia enacted similar legislation. Queensland enacted the Partnership Act of 1891, as shown in the chapter-opening image. 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.

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 (the 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, where partners are friends and where partners' memories of the arrangements entered into are similar, there may be no disputes. But when the partnership financially fails or partners fall out and are no longer of one mind, memories can 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 that 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 – if so, each partner becomes responsible for the repayments and each partner becomes a co-owner of the building. Assets contributed to a partnership become the joint assets of each partner. There can be legal disputes

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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

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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 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; and 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, any partner 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

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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 or 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
An account that 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 Sarah and Lucy each contributed $100 000 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			200 000	
Sarah, Capital				100 000
Lucy, Capital				100 000
(Sarah and Lucy invested cash in the partnership)				
Assets	=	Liabilities	+	Equity
+200 000				+200 000

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A business partnership is somewhat like a marriage

Let us add complexity by imagining Sarah was in business as a sole proprietor with the balance sheet shown in **Exhibit 10.1** (borrowed from the Floating and Filming [F&F] example in Chapter 1).

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 Sarah combines her aerial filming business with Lucy's graphic design business, we

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Exhibit 10.1 **BALANCE SHEET FOR FLOATING AND FILMING**

Floating and Filming Balance sheet at 28 February		
Cash	$ 1940	
Accounts receivable (money customers owe)	1200	
Supplies	100	
Drone	1950	
Total assets		$ 5 190
Loan from bank	$2 000	
Total liabilities		$2 000
Contributed capital	$ 1000	
Retained earnings	2 190	
Total equity		3 190
Total liabilities and equity		$ 5 190

would record the following journal entry for Sarah's contribution:

Cash	1940	
Accounts Receivable	1200	
Drone	1900	
Supplies	150	
Allowance for Bad Debts		200
Note Payable		2 000
Sarah, 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 Sarah, 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 Sarah's capital and retained earnings is irrelevant because she is contributing net assets that are recorded at their value to the new business.

With Lucy's 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 Sarah's and Lucy's previous balance sheets.

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 $10 000 and Talia and Lewis have agreed to share profits equally.

The final closing entry would be as follows:

Retained Earnings	10 000	
Talia, Capital (or Current)		5 000
Lewis, Capital (or Current)		5 000
(To record profit allocation)		

Assets	=	Liabilities	+	Equity
				+10 000
				–10 000

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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 Talia withdraws $1000.

The distribution of cash on the payment date would be recorded as follows:

30 Jun.	Talia, Drawings			1000	
	Cash				1000
	(To record withdrawal of cash by Talia)				
	Assets	=	Liabilities	+	Equity
	–1000				–1000

We now have two (or three if we also use a current account) partner's equity accounts for Talia. 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 Talia and Lewis 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 Talia is to receive $70 000 per annum and Lewis $110 000) and any remaining profit or loss shared equally. This year the partnership made a profit of $250 000.

Partners' share of profits			
	Talia	**Lewis**	**Total**
Total profit			250 000
First $100 000 share based on capital contributed			
Talia (300 000 ÷ 500 000) × $100 000	60 000		
Lewis (200 000 ÷ 500 000) × $100 000		40 000	
			(100 000)
Share based on service as agreed			
Talia	70 000		
Lewis		110 000	
			(180 000)
Balance remaining			(30 000)
Profit or loss to be shared equally			
Talia	(15 000)		
Lewis		(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	
	Talia, Capital				115 000
	Lewis, 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

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partner withdrawing. In each case it requires the consent of the other partners. From the perspective of ease in accounting, let us 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			1000	
	New Partner, Capital				1000
	(To record the sale of partnership interest)				
	Assets	=	Liabilities	+	Equity
					–1000
					+1000

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

AUSTRALIAN GOVERNMENT ADVICE ON PARTNERSHIPS

Dissolve your business partnership

There are different ways to dissolve a business partnership:

- the partnership term as stated in the formal partnership agreement expires
- one partner gives written notice to the other partners to exit the partnership
- one or more partners can no longer legally own a business
- a court issues a court order to dissolve the business
- a partner becomes bankrupt
- one of the partners dies
- the business is bankrupt or insolvent.

If the partnership continues with the remaining partners or new partners, follow the change of ownership steps.

If the partnership decides to close the business and cease trading, follow the guidelines to close your business.

Legislation to dissolve a partnership

The formal partnership agreement will dictate the terms and conditions to dissolve a partnership.[1]

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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. For simplicity, each partner has a capital account with a credit balance of $100. A new

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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 restaurant partnership accepts a celebrity chef who might be expected to attract many more customers to the restaurant. 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
Where a new partner pays less than the capital received.

Imagine the current partnership's simplified balance sheet is as below (all figures in thousands):

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, totalling $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 there is a substantial advantage in joining a successful partnership. In these cases, the new partner is willing to contribute more than the capital they receive – 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 $235 to receive a 33.33 per cent share in the partnership.

bonus to the existing (old) partners
Where 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	$525 ($100 + $100 + $325)
Haddad receives a one-third share	$175 (525/3)
Bonus to existing partners	$150 ($325 – $175)

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:

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Bonus to existing partners	$150
60% to Sharma	90
40% to Wang	60

The journal entry would be as follows:

30 Sep.	Cash	325	
	Sharma, Capital		90
	Wang, Capital		60
	Haddad, Capital		175
	(To record the admission of a new partner with bonus to old partners)		

Assets	=	Liabilities	+	Equity
+325				+175
				+90
				+60

The new balance sheet would appear as below.

Assets		**Liabilities**	
Cash	$825	Loans	$700
Other assets	$400		
		Partners' equity	
		Sharma, Capital	$190
		Wang, Capital	$160
		Haddad, Capital	$175
Total assets	**$1 225**	**Total liabilities and equity**	**$1 225**

Just to check, did Haddad end up with 33.33 per cent of the capital?

Total capital	$525 ($190 + $160 + $175)
One third share	$175 ($525/3)

And that is Haddad's Capital balance in the balance sheet above.

Withdrawal of a partner

Partners leave for many reasons: retirement, relocation, 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: $190, $160 and $175, 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	160	
	Sharma, Capital	20	
	Haddad, Capital	20	
	Cash		200
	(To record the withdrawal of a partner with bonus)		

Assets	=	Liabilities	+	Equity
–200				–160
				–20
				–20

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). For a restaurant, the reputation (it could be the star rating on various internet sites) is the main asset of the business. The business may be valued at current market value of other assets plus a multiple of profits or gross takings (revenue).

Listed in the partnership balance sheet before revaluation is cash $825 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:

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Cash	$825
Equipment (reduced $10)	140
Building (increased $110)	360
Goodwill (value of restaurant's reputation)	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	$ 825	Loans	$ 700
Equipment ($150 – $10)	$ 140		
Buildings ($250 + $110)	$ 360	**Partners' equity**	
Goodwill (newly recognised)	$ 800	Sharma, Capital ($190 + $300)	$ 490
		Wang, Capital ($160 + $300)	$ 460
		Haddad, Capital ($175 + $300)	$ 475
Total assets	**$2 125**	**Total liabilities and equity**	**$2 125**

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 $190 in cash and being permitted to set up a restaurant using the same name in a different city (benefiting from the reputation and receiving part of the goodwill) valued at $300.

The journal entry would be as follows:

30 Nov.	Sharma, Capital	490	
	Cash		190
	Goodwill		300
	(To record the withdrawal of partner Sharma)		

Assets	=	Liabilities	+	Equity
–190				–490
–300				

Withdrawal of a partner at more than the carrying amount

Instead of the above scenario, imagine the partners agreeing to Sharma leaving on 30 November and taking $250 in cash and goodwill valued at $300. This is known as a **bonus to the withdrawing partner** because the departing partner takes more than their capital balance ($550 – $490 = $60). 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
Where the departing partner takes more than their capital balance.

The journal entry would be as follows:

30 Nov.	Sharma, Capital	490	
	Wang, Capital (2/3 × $60)	40	
	Haddad, Capital (1/3 × $75)	20	
	Cash		250
	Goodwill		300
	(To record the withdrawal of partner Sharma)		

Assets	=	Liabilities	+	Equity
–550				–490
				–40
				–20

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Withdrawal of a partner at less than the carrying amount

Now imagine Sharma was willing to leave with only $340 in assets. The calculations and journal entry would be very similar to the above, except in this case assets would be credited only $340. Sharma, Capital would still be debited $490 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 $100, Haddad credit $50). 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
Where the withdrawing partner takes less than their capital balance.

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 $2125).

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 30 per cent and Haddad 60 per cent.

The journal entry would be as follows:

27 Dec.	Cash	1500	
	Equipment		140
	Buildings		360
	Goodwill		800
	Sharma, Capital (10% of $200)		20
	Wang, Capital (30% of $200)		60
	Haddad, Capital (60% of $200)		120
	(To record the sale of non-cash assets and profit on sale)		

Assets	=	Liabilities	+	Equity
+1500				+20
−140				+60
−360				+120
−800				

Next, let us 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 $120 (30 per cent of $400) and Haddad $240 (60 per cent of $400). The balance sheet as at 28 December would show:

Assets		**Liabilities**	
Cash ($825 + $900)	$ 1725	Loans	$ 700
Equipment	$ 0		
Buildings	$ 0	**Partners' equity**	
Goodwill	$ 0	Sharma, Capital ($490 − $40)	$ 450
		Wang, Capital ($460 − $120)	$ 340
		Haddad, Capital ($475 − $240)	$ 235
Total assets	**$ 1725**	**Total liabilities and equity**	**$ 1725**

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 us 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		

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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 about ongoing food poisoning at the restaurant? 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 (30% of $900)	270	
	Haddad, Capital (60% of $900)	540	
	Equipment		140
	Buildings		360
	Goodwill		800
	(To record the sale of non-cash assets and loss on sale)		

Assets	=	Liabilities	+	Equity
+ 400				–90
–140				–270
–360				–540
–800				

This leaves Haddad's capital account with a negative (debit) balance, a **capital deficiency**.

Partners' equity	
Sharma, Capital ($490 – $90)	$ 400
Wang, Capital ($460 – $270)	190
Haddad, Capital ($475 – $540)	(65)

capital deficiency
A partner's capital account with a negative (debit) balance.

If Haddad is willing to contribute $65 cash, the accounting becomes easy. The debit to Cash and credit to Haddad, Capital increases cash and 'increases' Haddad's capital from minus (debit) $65 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.

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Partners do not always receive cash when they leave the partnership

But what happens if Haddad cannot cover the capital deficit? Well over 100 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 (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	$190
Wang, Capital	160
Haddad, Capital	175

Therefore, if the partnership agreement is silent on sharing 'capital' losses, the loss will be shared 190:160. The $65 deficit is shared: Sharma $35.29 ($65 × 190/350) and Wang $29.71 ($65 × 160/350).

The journal entry would be as follows:

29 Dec.	Sharma, Capital	35.29	
	Wang, Capital	29.71	
	Haddad, Capital		65
	(To record the sharing of the capital deficit)		

Assets	=	Liabilities	+	Equity
				+65
				–35.29
				–29.71

Capital balances before and after Haddad's deficit was allocated are as follows:

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Partners' equity before deficit allocated		Partners' equity after deficit allocated	
Sharma, Capital ($490 – $90)	$400	Sharma, Capital ($400 – $35.29)	$364.71
Wang, Capital ($460 – $270)	$190	Wang, Capital ($190 – $29.71)	$160.29
Haddad, Capital ($475 – $540)	($65)	Haddad, Capital ($65 – $65)	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) of $825, plus sale of assets (in last example above) of $400, less the repayment of the loan of $700 gives a final cash balance of $525. The final act is to repay the two remaining partners on 30 December.

The journal entry would be as follows:

30 Nov.	Sharma, Capital			364.71	
	Wang, Capital			160.29	
	Cash				525
	(Pay remaining partners)				
	Assets	=	Liabilities	+	Equity
	–525				–364.71
					–160.29

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, and to take all accounts back to zero balances, we debit Capital and credit Cash.

MINDTAP Find out what your conflict management style is with this self-assessment

LO6 Partnership financial statements

Because a partnership differs from a sole proprietor only in the number of owners, it is 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 begin 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.

MINDTAP Test your understanding with the revision quizzes for this chapter.

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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	$ 13 000	$21 000
Equipment (at cost)	42 000	1 500
Accounts payable	13 000	4 000

The market value of the equipment is $47 000 and $1 000, 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 $1 998 000.

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 $370 000 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 $510 000. 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 is allocated according to capital contributed; second, the next $300 000 is allocated 75 per cent to Thien and 25 per cent to Thu based on their service to the partnership; and any remaining amount is 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 $57 300 and $39 600, respectively. They admit Mary to a 25 per cent share of the partnership.

REQUIRED

a Prepare the journal entry or entries if Mary pays $32 400 to become a partner.
b Prepare the journal entry or entries if Mary pays $38 400 to become a partner.
c Prepare the journal entry or entries if Mary pays $11 400 to become a partner.

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8 Withdrawal of a partner

LO4

Nguyen, Tran and Le are partners sharing profits and losses equally, and with capital balances of $675, $2025 and $1350, 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 $2025 in cash.

b Prepare the journal entries to record the retirement of Tran if she is allowed to take $1125 in cash.

c Prepare the journal entries to record the retirement of Tran if she is allowed to take $2475 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 $675, $2025 and $1350 respectively. Before Tran leaves the partnership, the assets are revalued. Equipment is worth $36 less than the carrying amount (book value), and property $441 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 $2527.50 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 thousands):

Assets		Liabilities	
Cash	$ 980	Loans	$ 1400
Equipment	$ 200		
Property	$ 720	**Partners' equity**	
		Di, Capital	$ 240
		Sue, Capital	$ 160
		Gazza, Capital	$ 100
Total assets	**$ 1900**	**Total liabilities and equity**	**$ 1900**

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, which 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 $1080 and $720, 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 2023		
	Debit	**Credit**
Accounts Receivable	$ 612	
Inventory	1008	
Buildings	900	
Accumulated Depreciation Buildings		$ 108
Short-Term Bank Loan		128
Accounts Payable		288
Profit and Loss Summary		844
Lara, Salary	432	
Matthew, Salary	288	
Lara, Current	72	
Matthew, Current	216	

>>

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Lara, Advance (long term)		360
Lara, Capital		1080
Matthew, Capital		720
TOTAL	$3528	$3528

Lara withdrew $72 on 1 January 2023 and Matthew withdrew $144 on 1 November 2022 and $72 on 1 March 2023.

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 2023.
c Prepare the balance sheet at 30 June 2023.

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 $1 700 000 and $850 000 for Mary and Peter, respectively.

REQUIRED

Prepare the journal entries for the admission of Chris if:

a Chris pays $950 000 directly to Peter for his share of the partnership.
b Chris invests $850 000 for a 25 per cent interest in the new partnership.
c Chris invests $1 050 000 for a 25 per cent interest in the new partnership.

14 Withdrawal of a partner

LO4

Emily, Judy and Adrian are partners. They share profits and losses 5:3:2. Their equity balances are as follows:

	Capital account	Current account
Emily	$27 000	$ 8100
Judy	31500	10800
Adrian	12600	3600

Before Emily leaves the partnership, they have the assets valued at current market value. Land and Buildings is increased by $24 300 and Accounts Receivable decreased by $6300. Emily is to receive $49 500 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 $150 000 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 $32 000 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 (note *Garner v. Murray*).

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 $210 000 cash. They agree to share profits in two steps. First Y will receive $210 000 and Z will receive $315 000 since they do most of the investigations and this reflects their respective abilities (this could be thought of as being like a salary, but it is profit distribution). 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 2022. By 30 June 2023 the business had a loss (after the first-step distributions) of $168 000. X decides to withdraw from the partnership on 1 July 2023 and it was mutually agreed that X would take only $63 000 for her equity interest.

REQUIRED

a Prepare the journal entries for the formation of the partnership and the contribution of capital on 1 July 2022.
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).

MINDTAP Learn more by watching the chapter animation.

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CASES

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 most recent Olympic Games in a time of 5:59.98, as part of the first pair 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 $1.2 million 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 do not 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 2019. Initially, they just brought their own equipment and helped out with 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 2022–23 financial year Dang contributed $352 000 of equipment and Tran $288 000. 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 2022–23 they 'paid' themselves a wage of $208 000 each. After drawing this wage they estimate they have probably made around $960 000 in profits for the 2022–23 financial year and rather than spoil their friendship they have approached you to determine how their profits should be divided, given they do not 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 years in the industry.
d Suggest why a current 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 spouse, who you own a house with, has just sent you an SMS: 'Just been offered a partnership in a day-trading business with these two high-tech online entrepreneur advisors, little risk as I only have to put in $10,000'.

REQUIRED

Concisely and simply explain the substantial risk or risks.

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'.

22 Ethics of partnership tax

LO1

Partners are able to decide how partnerships profits can be distributed. This allows profits to be distributed to the partner with the lowest marginal tax. In doing this the tax paid on partnership profits (taxable income) can be minimised. What would be the advantages and disadvantages of applying a standard formula to all partnerships on how to distribute profits?

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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 dividends. Then some of the interesting aspects of shares, such as share splits and buy-backs 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:

- **LO1** Describe the characteristics of the corporate form of business.
- **LO2** Discuss contributed 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 in other ways.
- **LO5** Examine share buy-backs and how they are recorded and reported.
- **LO6** Evaluate equity through the calculation and interpretation of horizontal, vertical and ratio analyses.

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LEARN STUDY APPLY

LO1 The corporate form of business

Chapter 2 introduced the three major forms of business: the sole proprietorship, the partnership and the corporation (company). The following sections describe some of the characteristics of the corporate form of business that distinguish it from sole proprietorships and partnerships. These characteristics relate to the corporation:

- being a separate legal entity
- having the ability to raise capital
- having limited liability for owners
- having transferability of ownership
- qualifying for dividend imputation
- attracting extra 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 (and there are businesses that will do this for you for as little as $50 extra). All companies must have at least one member (shareholder). Proprietary companies must have no more than 50 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 (if anyone will lend to a newly formed company with as little as one cent capital). It can sue and be sued. In other words, it has most of the rights and responsibilities of an individual in society. Small private (proprietary) companies may be referred to as a '$2 company', but this is from a previous era when you needed two shareholders and shares had a minimum value of $1 each.

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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 in 1997 at $3.30; T2 in 1999 at $7.40 and T3 in 2006 at $3.60, although shares traded as low as $2.50 in 2018) in the 'privatisation' of the telecommunications business. With more than one million shareholders, Telstra is probably the most widely held Australian company. 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 a current share equivalence issue price of 77c).

A great example familiar to most is Facebook. When 'going public' in May 2012, Facebook's IPO sold less than 20 per cent of the company at $38 per share and raised $16 billion. Mark Zuckerberg, who retained ownership of a little over 20 per cent stock, was 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. Facebook shares have traded higher than $300 in late 2020, making Zuckerberg's holdings worth over $100 billion. 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. Care is needed when looking at the price that shares are issued, and equally the price they are currently trading on the ASX. Ownership in a company may be divided into say 100 shares or 1000 shares. The fewer shares a company issues, the higher is the likely price. A company 'worth' $10 000 that issues 100 shares would be expected to issue them for $100 each, but if there were 1000 shares then the expectation would be $10 per share. Once shares in a public company are issued, they are then able to be bought and sold on the ASX.

iStock.com/bombuscreative

Facebook shares have traded higher than $300 in late 2020, making Zuckerberg's holdings worth over $100 billion.

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 and one of the main reasons large businesses are companies.

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 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.

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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 (it is more complex, but suffices for the purposes of this textbook). Dividends paid to shareholders are added to other income (e.g. wages and 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 after-tax profits to its only shareholder, who had a marginal personal tax rate 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, they would pay $210 tax and be rebated the $300, meaning they would pay $90 less tax than if they had not received the $700 dividends.

CSL Analysis

Look at the front cover of CSL's *Annual Report 2019/2020* and the balance sheet in this book's appendix. 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 Contributed Equity, and Note 12 has listed 'Ordinary shares issued and fully paid'. For most companies, Contributed Capital is a positive dollar amount, but for CSL it is zero. There is also a negative $4561 'Share buy-back reserve' because '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 extra 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.

LO2 Contributed equity

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 **contributed equity** (or **issued capital**) 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 **ordinary shares**, or just shares. Investors who purchase 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 over $300 million in reserves and almost $11 billion in retained earnings, but much less than $1.2 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; also known as paid-up capital or share capital.

ordinary shares
The most common type of share capital.

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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' or '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 two rights:

- *The right to vote* – this 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* – this 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.

For some companies the *right of pre-emption* ensures that shareholders can maintain their ownership percentage when new shares are issued. This is no longer a right given to many shareholders as shown by disproportional 'institutional investment placement' and 'share purchase plan' for retail investors in response to the pandemic by companies such as NAB and Cochlear.

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 Australasian accounting students, this has 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 6 June. The company would record this issuance as follows:

6 June	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 contributes money to the business, discussed in Chapter 3.)

There are now three complexities we can look at: instalments, oversubscriptions and forfeiture.

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.

As an example, suppose that 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		

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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. 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			3 000	
	Allotment				3 000
		(Received application money)			
	Assets	=	Liabilities	+	Equity
	+3 000				
	−3 000				

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 and credit Call.

Oversubscription

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 12 000 shares on 2 February. The company would record the application as before by debiting Cash Trust and crediting Application, but this time with $6000 (12 000 shares × 50c). Depending on the conditions set out in the prospectus, the company has two options in how it treats the excess application money.

oversubscription
Where more shares are applied for than are available to be issued.

Option #1

On 8 February the company gives the excess money back to the investor (i.e. refunds). Madison also accepts the application for 10 000 shares and in addition to refunding the excess application money it will allot the shares as above on 2 February. (With the Share Purchase Plans, referred to earlier, there was substantial oversubscriptions. For example, NAB received $2.9 billion and refunded $1.65 billion.)

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 16 000 shares).

8 Feb.	Application			6 000	
	Allotment			2 000	
		Contributed Equity			8 000
		(Allotted 10 000 shares)			
	Assets	=	Liabilities	+	Equity
	+2 000		−6 000		+8 000

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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 'Share Information' and 'Shareholder Information' in this book's appendix. How many ordinary shares do CSL have issued in 2020?

Analysis:

CSL has 454 048 707 shares issued as of 14 August 2020. The majority of shareholders (178 978 or 87.2%) own between one and one thousand shares, but they own only 7.6 per cent of the company. The largest shareholder, HSBC Custody Nominees (Australia) Limited, holds (owns) over 154 million shares, almost 34 per cent of CSL – worth almost $50 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: BHP (23%), CBA (11%), NAB (24%) and Westpac (22%). 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
Where a shareholder does not pay the allotment and/or call, so 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 (FSA).

The shares may later be **reissued**, possibly at a discount, with the discount effectively being paid by the original shareholder. Madison reissues the 500 shares on 6 June for 85 cents as being fully paid (debit Cash $425[500 × 85c], debit FSA $75 [500 × 15c] and credit Contributed Equity $500 [500 × $1]). After paying the cost of reissue, any amount left in the Forfeited Shares Account *may* be refunded to the original shareholder.

reissue
When forfeited shares are again sold, often at a discount to the original issue price.

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, not an expense. 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

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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 to shareholders registered 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 may 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. 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 declares the dividend is called the **declaration date**. On this date, the board legally obliges the company to pay the dividend, so a liability is created. The board's declaration should 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.

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.

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 the earnings that were previously retained. 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 2020 Consolidated statement of changes in equity.

	Retained Earnings $m
Balance at the beginning of the year	9 612.3
Profit for the period	2 102.5
Other comprehensive income	(13.6)
Opening B/S adjustment adoption AASB 16 and 15	(65.0)
Dividends paid	(883.1)
Balance at end of year	10 752.3

Source: CSL Limited, 'Consolidated Statement of Changes in Equity', *Annual Report 2019/2020*, p. 98.

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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 2020 cash flow statement.

Financing activities section of CSL's 2020 Statement of cash flows

	2020 US$m	2019 US$m
Cash flows from financing activities		
Proceeds from the issue of shares	42.0	31.8
Dividends paid	(883.1)	(806.8)
Proceeds from borrowings	1652.7	898.5
Repayment of borrowings	(1399.2)	(610.2)
Principal payments of AASB 16 lease liabilities	(54.7)	
Other financing activities	(0.4)	(648.2)
Net cash outflow from financing activities	(642.7)	(491.5)

Source: CSL Limited, 'Consolidated Statement of Cash Flows', *Annual Report 2019/2020*, p. 99.

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 (e.g. final dividend declared US$1.00c August 2019, paid October 2019; interim declared US$0.95 February 2020, paid April 2020). The dividend declared (retained earnings) and the dividend paid (cash flow) are often different because some dividends declared in the current financial year are 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 buy-backs (discussed later in the chapter).

Share dividends

share dividend
A distribution of a company's ordinary shares to existing shareholders.

While cash dividends are by far the most common type of dividend, some companies distribute share dividends. 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 that 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. DRPs are similar to share dividends, but it is the shareholder who decides to receive shares instead of cash, rather than it being imposed on all shareholders as 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 small 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.

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Making it Real

DIVIDEND REINVESTMENT PLANS

Commonwealth Bank, Australia's largest company, offers one of the best known DRPs. Below is a brief summary of information the bank provides on its website about its DRP.

The DRP allows eligible shareholders in Australia and New Zealand to reinvest all or part of their dividends to receive additional shares instead of a cash payment. It is a convenient way to increase your holding of CBA shares without incurring transaction costs.

Key features of the DRP are:

- you will receive shares instead of a cash dividend
- the number of shares you receive will be based on the Market Price (which is determined under the DRP Rules by reference to the price of CBA shares)
- franking credits apply to dividends reinvested under the DRP
- shares issued under the DRP will rank equally with other shares
- any residual value is held for you in a DRP account and will be added to your next dividend to calculate any future share entitlements
- participation is optional, and you can change your election at any time (the cut-off for the election to apply to a particular DRP is usually the day after the Record date for that dividend)
- participation is flexible, and you can choose to apply the DRP to all or part of your shareholding.[2]

If you had perfect timing or perfect foresight (or just good luck) you could have purchased 100 Commonwealth Bank of Australia (CBA) shares in early 2009 for just under $2400 (the lowest price during the Global Financial Crisis). Over the next 13 years each share would have paid around $50 in dividends. If you fully participated in the DRP, after 13 years you would have owned around 200 shares (receiving dividends on all 200 shares). If you google 'CBA share price' and multiply by 200 you will have the value of those original shares.

In the first six months in 2009, you would have received a dividend of $1.13 per share or $113 for your 100 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 104 shares, as you now owned the original investment plus the four shares from your first dividend reinvestment. An additional two to six shares are received every six months when the dividend is paid; the more recent the dividend, the more shares you will receive 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 100 shares) you would, by the end of 2021, own over 600 shares worth (based at the time of writing on an estimated share price of around $80 per share) about $50 000. Depending on your personal tax situation, you may have also received an imputation credit of over $6000. 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). The shares acquired from DRP are treated for capital gains tax as if purchased for cash at the date they are allotted.

So why do companies distribute share dividends or have a 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 nor 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',

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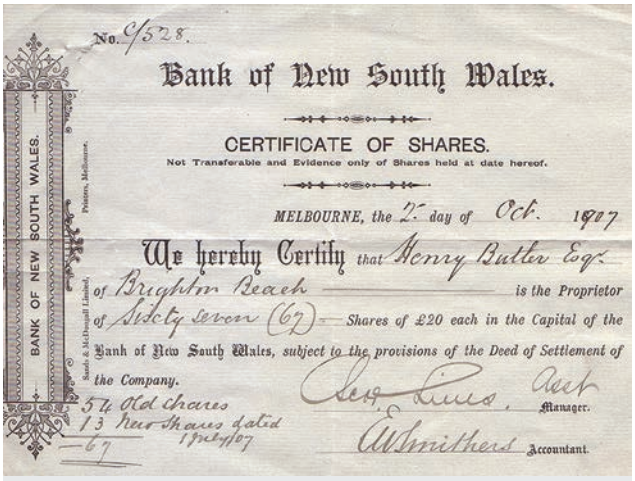
share split
An increase in the number of a company's issued shares according to some specified ratio.

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 for each in returned share, 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 such as BHP (2-for-1 in 1989, 1995 and 2001) and CSL (3-for-1 in 2007) 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. In the USA, shares sometimes have a market value in the thousands. Famously, Berkshire Hathaway was valued at over US$350 000 per share in January 2021.


No. C/528.

Bank of New South Wales.

CERTIFICATE OF SHARES.

Not Transferable and Evidence only of Shares held at date hereof.

MELBOURNE, the 25 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 1st May/07
67

Manager.

Accountant.

BANK OF NEW SOUTH WALES.

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. Interestingly, in 2016, when the share price again rose above $100, CSL did not 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 if you purchased one share in 1994 for $2.30, it would now have paid over $40 in dividends and, due to the 2007 share split, by February 2020 you would have three shares worth over $1000. *If only we could all go back in time!*

Share splits are very similar to share dividends in that they both result in an additional number of issued shares, but 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.

LO4 Preference shares

preference shares
A form of shares that receives one or more priorities over ordinary 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. Often, 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.

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 $10 per share on 8 August. The company would record this issuance as follows:

8 Aug.	Cash			5 000	
	Preference Shares				5 000
	(To record sale of preference shares)				
	Assets	=	Liabilities	+	Equity
	+5 000				+5 000

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This entry increases Cash by $5000, which is the amount paid by the investor and Preference Shares (Contributed Preference Equity) are increased by $5000. 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: 10 000 shares issued
- 5 per cent preference shares: 1000 shares issued at $100.

Suppose further that they do not pay dividends in 2020 or 2021 but declare $24 000 of dividends in 2022. The allocation of the 2022 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 $5.00 per share ($100 × 5%), making $5000 in total ($5.00 per share × 1000 shares). Therefore, $15 000 is allocated to preference shareholders, with the remainder going to ordinary shareholders. These calculations are illustrated as follows:

Preference shares are cumulative	Preference	Ordinary
Dividends in arrears: years 2020 and 2021	10 000	
Current-year preference dividend	5 000	
Distribute remainder to ordinary ($24 000 – $15 000)		$9 000
Total allocated in 2022	**$15 000**	**$9 000**

Once the allocation of dividends is calculated, they would record the declaration and payment of the dividend with a debit to Retained Earnings ($24 000) and a credit to both Preference Share Dividend Payable ($15 000) and Ordinary Share Dividend Payable ($9000).

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 2020 and 2021 are irrelevant to the calculation for the current year. Therefore, only $5000 is allocated to preference shareholders, with the remainder ($19 000) going to ordinary shareholders.

MINDTAP Review this material with the e-lecture.

LO5 Share buy-backs

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 a company purchases its shares is to provide a tax-effective return to some shareholders and to increase future returns to the remaining

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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 or management incentive scheme. Share buy-backs 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' buy-backs involve the company purchasing shares 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 (except they know CSL is currently buying back their shares) and CSL reports to the ASX how many shares they have purchased each day. Each year from 2009 to 2016 CSL bought back shares, in total 29 per cent of their shares for between $25 and $100 (a lot more that the original 77 cent [taking account of the share split] issue price). **Exhibit 11.1** is an extract from the announcement of CSL's up to $1 billion on-market share buy-back in October 2015.

Exhibit 11.1 **CSL'S 2015 SHARE BUY-BACK NOTICE TO THE AUSTRALIAN SECURITIES EXCHANGE**

APPENDIX 3C

Announcement of buy-back (*except* minimum holding buy-back)

(Information and documents given to ASX become ASX's property and may be made public.)

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 (e.g. 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: 464,984,749 ordinary
6 Whether shareholder/unitholder approval is required for buy-back: No
7 Reason for buy-back: Ongoing capital management.

Announcement of buy-back

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 (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$1 billion. The Company reserves the right to suspend or terminate the buy-back at any time
12 Period of time the company/trust intends the buy-back: The Company intends to buy-back shares in the period 30 October 2015 to 28 October 2016 (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: N/A

Selective buy-back: N/A

Equal access scheme: N/A

Compliance statement

1. The company is in compliance with all Corporations Act requirements 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: 15 October 2015

Edward Bailey (Company Secretary)

Source: Adapted from CSL Limited 2015 *Notice of buy-back.*

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Recording share buy-backs

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 2015, CSL notified shareholders of its share buy-back. The sale of shares (to CSL or another investor) will be attractive to some shareholders as the buy-back tends to support the share price as the company is creating further demand for the shares. On-market buy-backs do not have the advantage of some off-market buy-backs where some current investors take advantage of the tax implications of the buy-back 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 buy-back)				
	Assets	=	Liabilities	+	Equity
	–32 000				–32 000

CSL Analysis

Look at CSL's Statement of changes in equity in this book's appendix. How much was spent on share buy-backs in 2019 and 2020? Where else in the annual report is the share buy-back disclosed? How about CSL's own shares and not shares in other companies?

Analysis:

In 2019 and 2020, CSL did not buy back any shares.

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 buy-back reserve is negative because buy-backs 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. Buy-backs are usually made from contributed equity, but for taxation reasons frequently much of an off-market share buy-back 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 buy-backs to be reported in the statement of changes in equity.

Making it Real

SHARE BUY-BACKS

The reference below from the Australian Taxation Office (ATO) website emphasises the importance of the tax implications of share buy-backs. Buy-backs often appeal to limited groups of shareholders who can take advantage of the significant proportion of the buy-back price being classified as a dividend (with the resulting dividend imputation credit) and the corresponding smaller capital gain (or larger capital loss).

Example: Buy-back offer[3]

Sam bought 4,500 shares in Company A in January 1994 at a cost of $5 per share. In February 2019, Sam applied to participate in a buy-back offer to dispose of 675 shares (15%). Company A approved a buy-back of 10% (450) of the shares on 15 June 2019. The company sent Sam a cheque on 5 July 2019 for $4,050 (450 shares × $9). No part of the payment is a dividend.

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Sam works out his capital gain for 2018–19 as follows.
If he chooses the indexation method:

Capital proceeds	$4,050
Cost base 450 shares × $5 ($2,250 × 1.117 including indexation)	$2,513
Capital gain	$1,537

If he chooses the discount method:

Capital proceeds	$4,050
Cost base	$2,250
Capital gain (before applying any discount)	$1,800

Sam has no capital losses to apply against this capital gain and decides that the discount method will provide him with the better result. He takes $900 ($1,800 × 50%) into account in working out his net capital gain for the year.

Off-market buy-backs including dividends are more complex.

In 2016, when Telstra conducted its off-market buy-back, the buy-back 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 buy-back 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 buy-back for those offering to sell more than 880 shares.

Share buy-backs even continued through the initial stages of the COVID-19 pandemic in early 2020 – while a number of companies (NAB, Ramsay, Cochlear, etc.) were raising capital, Pro Medicus Ltd announced an on-market share buy-back.

MINDTAP Review this material with the e-lecture.

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 2023 annual report. All amounts are rounded to the closest thousand, except the per-share data.

Exhibit 11.2 **ACCOUNT BALANCES FROM BIOTECH'S 2023 ANNUAL REPORT**

Source	Account	2023	2022
Balance sheet	Total Assets	$6 723	$5 793
	Total Equity	$3 861	3 330
	Ordinary Shares Issued	297	297
Income statement	Total Comprehensive Income	$ 648	$ 612
Dividends	Cash Dividend per share	$ 0.40	$ 0.33

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

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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 total comprehensive income 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

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

Given Biotech's financial data in **Exhibit 11.2**, horizontal and vertical analyses result in the following:

Horizontal analysis		
	Change	**Percentage change**
Total equity	3861 – 3330 = 532	531 ÷ 3330 = 15.9%
Vertical analysis		
	2023	**2022**
Total equity	3861 ÷ 6723 = 57.4%	3330 ÷ 5793 = 57.5%

The horizontal analysis reveals that total equity increased by $531 000 during 2023, 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 as the same percentage 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 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 there is an Accounting Standard AASB 133 *Earnings per Share*, but here 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.

Biotech's earnings per share is calculated (without the need to first calculate the average number of shares as they have not changed) as follows using the information in **Exhibit 11.2**:

$$648 \div 297 = 2.18$$

The 2.18 ratio reveals that Biotech earned $2.18 in profit for every ordinary share issued. Is this an improvement over the previous years?

For a company like CSL 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 2020 of around $1.8 billion and an EPS of 16 cents, while CSL had earnings of around $2.1 billion and an EPS of $6.77, reflecting the number of shares issued (with share prices of about $3 and $300, respectively).

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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

$$\text{Average Equity} = \frac{\text{Beginning Equity} + \text{Ending Equity}}{2}$$

Biotech's return on equity is calculated as follows from the information in **Exhibit 11.2**:

$$648 \div (3861 + 3330) \div 2 = 18.0\%$$

The 18.0 per cent ratio indicates that for every dollar of equity held during 2023, Biotech generated almost 18 cents of additional wealth through profitable operations. This may appear to be an excellent return, but before making this call it would be useful to ask how this compares to another biotechnology company, such as CSL.

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.

dividend payout ratio
A comparison of a company's dividends to its earnings that measures the percentage of current earnings distributed to owners.

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:

KEY FORMULA 11.7: AVERAGE EQUITY

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend}}{\text{Total Comprehensive Income}} \text{ or } \frac{\text{Dividend per Share}}{\text{Earning per Share}}$$

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. Biotech's dividend payout ratio is as follows, with the calculation based on per-share amounts (and EPS as calculated above):

$$\frac{0.40}{2.18} = 18.3\%$$

A ratio of 18.3 per cent indicates that for every dollar of earnings during 2023, Biotech paid just over 18 cents in cash dividends. But is an 18.3 per cent ratio better or worse than a competitor with a 54 per cent ratio? The ratios simply reflect each company's dividend policy. For 2023, Biotech paid out less than one third of the payout of its competitor. 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 (as it would appear CSL's shareholders prefer). 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 this book's appendix, 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 $300 on 30 June 2020.

We can round to the closest million dollars as the difference is not material.

Analysis:

1 Horizontal analysis

$$(\$6528 - \$5251) \div \$5251 = 24.3\%$$

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Vertical analysis

$6528 ÷ $15 465 = 42.2%

The 24.3 per cent horizontal analysis reflects an increase in CSL's total equity, mainly in retained earnings. The 42.2 per cent vertical analysis shows that substantially less than half of the company's assets are financed through equity.

2 Earnings per share

$2103 ÷ 454 = US$4.63

Relying on Share information and using Total comprehensive income for the period the $4.63 earnings per share indicates that CSL earned $4.63 for each issued share. This ratio is higher than the previous year ($4.23) due to the increase in incomes (+$285 million) and only a small increase in the number of shares. EPS information is given at the bottom of the income statement (as per AASB 133, IAS 33) and the detail given in Note 10. The observant student will note that the CSL and above calculations are based on Total comprehensive income. If Net profits were used it would make no difference in 2020 because there is only $0.3 million difference. In 2019 it would be over 5 per cent different as the profits and comprehensive income are over $100 million different.

3 Return on equity

$2103 ÷ ($6528 + $5251) ÷ 2 = 35.7%

The 35.7 per cent return on equity ratio indicates that CSL earned almost 36 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 in the last decade has done all three.

4 Dividend payout ratio

$883 ÷ $2103 = 42.0%

or

$1.95 /$4.63 = 42.1%

The 42 per cent dividend payout ratio indicates that CSL paid to owners 42 cents for every dollar after tax it earned during the year. We can use either the total numbers (total dividends and total income) or the per-share numbers (dividend per share and EPS); they provide the same approximate 42 per cent (with the difference due to rounding). In previous years CSL often provided an additional 'return' to shareholders through its share buy-backs.

5 Dividend yield

$2.90 ÷ $300 = 0.97% (US$1.95 = A$2.90)

The 0.97 per cent dividend yield implies CSL shareholders are not chasing dividends. CommBank has a dividend yield of 4.1%, BHP 4.9% and Fortescue 10.6%. These will vary as the share price changes and whenever a dividend is declared. 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 over the four years 2017–20, it rose from around $100 to $300. CSL was a much better investment than the dividend yield alone may indicate ($200 capital gain and $9.65 dividends). This is even more impressive 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

$$\text{Dividend yield} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}}$$

According to **Exhibit 11.2**, Biotech reports dividends per share of 40 cents in 2023. We will use a share price of $10, which is the closing price on the

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last day of the previous financial year (30 June 2022). 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 Biotech on 30 June 2022 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 buy-back 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.

MINDTAP Review this material with the e-lecture.

CSL Analysis

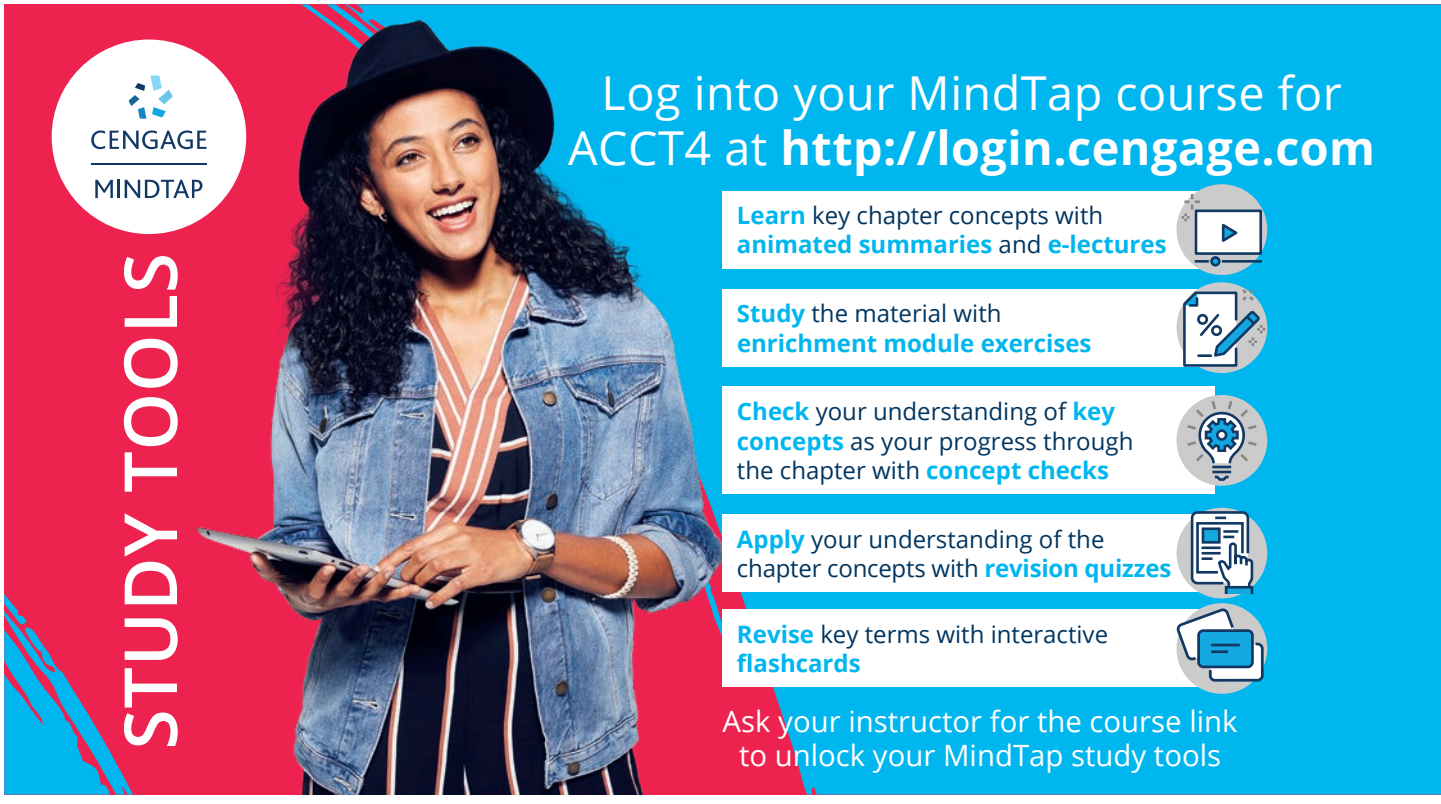
Look at CSL's statement of cash flows in this book's appendix.

1 How much cash has the company paid in dividends over the past two years?
2 How much did it pay in share buy-backs?
3 How much has the DRP saved the company in cash outflows?

Analysis:

1 According to the financing activities section of CSL's statement of cash flows, it paid $883 million in dividends in 2020 and $807 million in 2019.
2 It did not repurchase shares in 2019 or 2020.
3 Unlike most of the large public companies in Australia, CSL does not have a DRP.

MINDTAP Test your understanding with the revision quizzes for this chapter.



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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
h Dividend imputation

2 Being a shareholder

LO1, 2

What are the advantages and disadvantages of buying shares in a company?

3 Shares versus loans

LO1, 2, 6

From an investor's perspective, what are the advantages and disadvantages of buying shares in, say, the Commonwealth Bank rather than depositing the money in the bank itself?

4 Recording ordinary shares

LO2

Teddy Limited issued 4000 shares for $10 per share on 1 March and 7500 shares for $15 per share on 1 June.

REQUIRED

Prepare the journal entries to record the share issue.

5 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 $6 per share.

31 May Purchased 1000 shares in a buy-back for $50 per share.

1 Oct. Issued 3000 preference shares for $195 000.

31 Dec. Paid a $1 dividend on all shares.

REQUIRED

Prepare the journal entries to record the transactions.

6 Recording share transactions and instalments

LO2

Edward Enterprises 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 10 000 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 12 300 shares. The prospectus allowed Edward to reject any application the company deemed inappropriate and to scale back other applications and apply the excess application money to allotment. Edward rejected applications for 1300 shares, refunding the money to the applicants, and scaled back one application for 3000 shares to 2000 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.

7 Recording forfeiture and reissue of shares

LO2

Given the information in Question 6, assume that when the call was made, a shareholder of 200 shares did not pay the call. In accordance with the prospectus, the shareholder forfeited the shares and the company reissued the shares for $1.68 per share.

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.

8 Share terminologies

LO2, 5

The shareholders' equity section of Le Company's balance sheet is as follows:

Equity	
Contributed equity	$8 040 000
Retained equity	2 850 000
Total shareholders' equity	10 890 000
Note 11 Contributed equity	
Number of ordinary shares	900 000

REQUIRED

a How many ordinary shares are issued?
b How much in total equity has Le Company received from the issue of shares?
c What was the opening balance in retained earnings if during the year Le Company had total comprehensive income of $2 382 000 and declared dividends of $1 332 000?

9 Cash dividends

LO3

On 15 December Suying Limited declared a cash dividend of $5159 per share to be paid on 15 January to shareholders of record on 31 December. Suying has 231 million ordinary shares issued.

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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.

10 Cash dividends

LO3, 4

Chen Company declares a $180 000 dividend. Chen has 1600 000 ordinary shares issued. Chen's 40 000 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 $180 000 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 $180 000 in dividends should be allocated to preference and ordinary shareholders, assuming that the preference shares are non-cumulative.

11 Share dividends

LO3

Maxfield Manufacturing declared a share dividend of $3.00 per share on 1 July to be distributed on 1 August to shareholders of record on 15 July. On 1 July, Maxfield has 125 000 issued and paid-up ordinary shares. Maxfield's shares are trading at $30 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 the holder of 1000 shares would expect to receive in the share dividend.

12 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 $5.50. 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 (215 000 shares)	$ 430 000
Retained earnings	775 000
Total shareholders' equity	$1 205 000

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.

13 Preference shares and preference dividends

LO4

The shareholders' equity section of Lam Limited's balance sheet shows the following:

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 2021, but no dividends in 2022.

REQUIRED

a Calculate the dividend on the ordinary and preference shares in 2023 if total dividends are $559 000.
b Prepare the journal entry to record the above dividend transactions if the dividends were declared on 8/8/23 and paid on 10/10/23.

14 Share buy-back

LO5

On 15 January, Capital Company purchased on market 50 000 shares of its own ordinary shares when the shares were trading at $90.

REQUIRED

Prepare the journal entry to record the share buy-back.

15 Evaluate equity

LO6

The following is selected financial information for Lee Ltd:

(in millions)	2023	2022
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 2023 and 2022.
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.

16 Evaluate equity

LO6

Tai 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, and what could it not be compared to? Why?
c What might the company do to improve this financial measure?

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17 Evaluate equity

LO6

The following is from the financial statements of Bond Boomerangs from the last two years:

	2024	2023
Total assets	$5 055	$5 190
Total liabilities	2 700	2 625
Total shareholders' equity	2 355	2 565

REQUIRED

Conduct a horizontal analysis, and vertical analysis for both years.

18 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

19 Recording and reporting equity

LO2, 3, 5

Czernkowski Company had the following balances in its shareholders' equity at 1 January:

Contributed equity (900 0000 ordinary shares)	$4 200 000
Retained earnings	4 450 000

During the year, Czernkowski had the following transactions:

1 Mar. Issued 400 000 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 on 15 September.

1 Oct. Bought back 12 000 ordinary shares for $90 000.

31 Dec. Revenue for the year is $3 240 000; expenses for the year are $2 200 000.

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.

20 Issuing shares: instalments, oversubscription, forfeiture and reissue

LO2

The following information is available for Liu Limited for 2022:

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.

21 Evaluating equity

LO6

The following are financial measures from the financial statements of Kin-man Limited for the past two years:

	This year	Last year
Total assets	$4 255 350	$3 895 700
Total liabilities	2 050 150	1980 300
Total shareholders' equity	2 205 200	1915 400

REQUIRED

a Conduct a horizontal analysis of Kin-man Limited. Comment on your findings and possible reasons for these findings.
b Conduct a vertical analysis for both years for Kin-man Limited. Compare and briefly interpret the results of the two years.

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22 Evaluating equity

LO6

Yiu-ming Yachts is trying to determine if its equity is comparable to other yachting brokers in the area.

	2024 ($'000)	2023 ($'000)
Total assets	$2 748	$3 012
Total liabilities	1176	1464
Total equity	1572	1548
Total comprehensive income	397	
Average number of ordinary shares issued	532	
Average equity	1560	
Market price of shares	$42.00 per share	
Total dividends	118 000	
Dividends per share	$0.50	

REQUIRED

a Conduct horizontal and vertical analyses for Yiu-ming Yachts.
b Calculate the earnings per share and return on equity.
c Calculate the dividend payout ratio and the dividend yield.

CASES

23 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.

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24 Raising the money to expand a business

LO1, 2, 4

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 recycled 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.

25 Ordinary or preference shares: investors' perspective

LO1, 2, 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.

26 Communications: investing versus saving

LO1, 3, 6

Tweet (280 characters maximum) a list of disadvantages and advantages of buying shares rather than saving in a term deposit (bank account) when saving up for a home.

27 Ethics

LO1, 3, 6

Beyond seeking financial return, what other matters might you consider when choosing companies to invest in and why?

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12 STATEMENT OF CASH FLOWS

As discussed in Chapter 1, the statement of cash flows (or cash flow statement, abbreviated as CFS) 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:

- **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.

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LO1 The statement of cash flows

MINDTAP Learn more by watching the animation: Cash Flow Statements

One of the most important resources of any company is cash. If a business cannot generate sufficient cash, its ability to continue operations is significantly limited. As a result, stakeholders want to know how a business is managing its cash. How does the business generate and spend its cash? Will the company be able to pay wages, creditors, cash dividends and over the long term repay its loans? 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** (often referred to as CFS – cash flow statement). Cash flow is so important it concentrates on only one item in the balance sheet (or statement of financial position) – cash – and explains why the closing balance is different from the opening balance, but in doing so it draws from lots of other information. For most businesses, cash is involved in more transactions than any other account.

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 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 or activities: 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. Note that from this point forward, the term 'cash' will be used to represent cash and cash equivalents.

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The basic structure of the CFS 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

AAP Photo/Erik Anderson

One of the keys to success for a company like CSL is to convert its products (medicines) and services into cash

The following sections discuss the three groupings of cash flows. For illustration purposes, **Exhibit 12.1** contains CSL's Consolidated Statement of Cash Flows for the year ending 30 June 2020. All dollar amounts are in US millions (although this is irrelevant unless you were comparing it to an Australian dollar cash flow statement).

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, 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 2020 reports a 'Net cash inflow from operating activity' of $2488.3 million, up more than 50 per cent on 2019.

Operating cash flows are reported first on a CFS. Unlike most companies, CSL reports operating cash flows using the indirect method. AASB 107 encourages entities 'to report cash flows from operating activities using the direct method' but allows the indirect 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. Because CSL uses the indirect method, it does not have a reconciliation.

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 $1366.7 million in 2020. 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.

Financing cash flows are reported after investing cash flows. **Exhibit 12.1** reveals CSL had net cash outflows from financing activities in 2020 of

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Exhibit 12.1 CSL'S CONSOLIDATED STATEMENT OF CASH FLOWS 2020

	Notes	Consolidated Entity 2020 US$m	Consolidated Entity 2019 US$m
Cash Flows from Operating Activities			
Profit before income tax expense		**2,527.7**	2,341.1
Adjustments for:			
Depreciation and amortisation		**419.8**	375.5
Inventory provisions		**189.5**	191.3
Share-based payments expense		**81.0**	52.0
Bad debt provision		**10.1**	(3.5)
Finance costs		**142.4**	127.8
Loss (gain) on disposal of property, plant and equipment		**0.5**	(0.8)
Changes in operating assets and liabilities:			
Decrease/(Increase) in trade and other receivables		**124.9**	(367.1)
Increase in Inventories		**(686.0)**	(558.3)
Increase in trade and other payables		**157.8**	136.2
(Decrease)/Increase in provisions and other		**(27.0)**	18.6
Income tax paid		**(355.0)**	(527.7)
Finance costs paid		**(142.4)**	**(140.7)**
Net cash inflow from operating activities		**2,488.3**	1,644.4
Cash flows from investing Activities			
Payments for property, plant and equipment		**(1,206.8)**	(1,117.6)
Payments for intangible assets		**(160.8)**	(167.2)
Payment for business acquistion (Net of cash acquired)		**(177.8)**	-
Receipts/(payments) from other investing activities		**18.7**	(2.5)
Net cash outflow from investing activities		**(1,366.7)**	(1,287.3)
Cash flows from Financing Activities			
Proceeds from issue or shares		**42.0**	31.8
Dividends paid	10	**(883.1)**	(806.8)
Proceeds from borrowings	11	**1,652.7**	898.5
Repayment of borrowings	11	**(1,399.2)**	(610.2)
Principal payments of AASB 16 lease liabilities		**(54.7)**	-
Other financing activities		**(0.4)**	(4.8)
Net cash (outflow)/inflow from financing activities)		**(642.7)**	(491.5)
Net (decrease)/increase in cash and cash equivalents		**478.9**	(134.4)
Cash and cash equivalents at the beginning of the financial year		**657.8**	812.7
Exchange rate variations on foreign cash and cash equivalent balances		**14.65**	(20.5)
Cash and cash equivalents at the end of the period		**1,151.3**	657.8
Reconciliation of cash and cash equivalents			
Cash and cash equivalents at the end of the period as shown in the statement of cash flows is reconciled as follows:			
Cash and cash equivalents		1,194.4	657.8
Bank overdrafts		(43.1)	-
Cash and cash equivalents at the end of the period		1,151.3	657.8

The consolidated statement of cash flows should be read in conjunction with the accompartying notes.

Source: CSL Limited, 'Consolidated Statement of Cash Flows', Annual Report 2019/2020, p. 99.

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($642.7) million, due to dividends paid, repayment of borrowings, etc. In both 2020 and 2019, CSL borrowed over $250 million more than it repaid.

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 CFS, showing only the major subtotals:

CSL's condensed statement of cash flows		
	2020	2019
Cash and cash equivalents at the beginning of the financial year	$ 657.8	$ 812.7
Net cash provided by operating activities	2 488.3	1644.4
Net cash used in investing activities	(1366.7)	(1287.3)
Net cash used in financing activities	(642.7)	(491.5)
Exchange rate variation on foreign cash (not material)	14.6	(20.5)
Cash and cash equivalents (same as balance sheet)	1194.4	657.8
Less bank overdraft	(43.1)	
Cash and cash equivalents at the end of the financial year	1151.3	657.8

Source: CSL Limited, 'Consolidated Statement of Cash Flows', Annual Report 2019/2020, p. 99.

In 2020, CSL showed a substantial increase in cash. This increase consisted of the sum of operating, investing and financing cash flows. In the CFS, the cash and cash equivalents are shown before 'overdraft' so the balance sheet shows the same cash figures. (Bank overdraft is part of interest bearing current liabilities.)

Additional disclosures

All reporting entities prepare a CFS 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]

MINDTAP Review this material with the e-lecture.

CSL does not appear to report any 'non-cash investing/financing activities', as it has previously.

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).

Making it Real

One of Cochlear's cash flows from operating activities in 2020 was, 'Government assistance in respect of COVID-19 received ... $23.6 million'.[3] Of course, the figure in 2019 was zero.

Note 2.4 states: 'Due to the impact of COVID-19, Cochlear has received $23.6 million in government assistance through the United States Coronavirus Aid, Relief, and Economic Security Act (CARES Act), Australia's JobKeeper Program and other government assistance programs offered in Europe and Asia.'[4]

From that short paragraph it is clear many governments provided cash to companies to help them survive the pandemic.

Cochlear is discussed in detail in Chapter 13.

The preparation of the CFS 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):

$$\Delta\,\text{Cash} = \Delta\,\text{Liabilities} + \Delta\,\text{Equity} - \Delta\,\text{Non-Cash Assets}$$

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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 CFS. 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 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 CFS, 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
A method of reporting cash flows from operating activities in which cash inflows and outflows from operations are reported separately on the CFS.

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, 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 cash inflows and cash outflows are shown directly on the statement.

Under the **indirect method** (used by CSL), 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.

indirect method
A method of reporting cash flows from operating activities in which net income is adjusted from an accrual basis to a cash basis.

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 CFS, the information for a hypothetical company in **Exhibit 12.2** will be used. Note that the MoonShine 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.

Exhibit 12.2 **THE MOONSHINE COMPANY FINANCIAL STATEMENTS**

The MoonShine Company Income statement for year ended 30 June 2023 (in millions)		
Sales		$1296
Cost of goods sold		843
Gross profit		$453
Expenses:		
Depreciation expense	$75	
Insurance expense	42	
Salaries expense	189	
Electricity expense	84	390
Profits before tax		$ 63
Income tax expense		24
Gain on sale of equipment		$ 3
Total comprehensive income		$ 42

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Exhibit 12.2 (CONTINUED)

The MoonShine Company Comparative balance sheet as at 30 June 2023 (in millions)	2023	2022
Cash and cash equivalents	$ 54	$ 135
Accounts receivable	135	123
Inventory	303	27692
Prepaid insurance	33	45
Total current assets	$525	$579
Investments	66	0
Property and equipment, at cost	696	498
Less: Accumulated depreciation	(171)	(111)
Total assets	$1116	$966
Accounts payable	$ 111	$ 87
Salaries payable	63	63
Electricity payable	81	66
Taxes payable	0	21
Total current liabilities	$ 255	$ 237
Non-current liabilities	135	0
Total liabilities	$390	$ 237
Contributed equity	$465	$495
Retained earnings	261	234
Total equity	$726	$729
Total liabilities and equity	$1116	$966

LO3 Reporting cash flows from operating activities: direct method

This section demonstrates the calculation of cash flows from operating activities under the direct method.

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.

Firebox.com Ltd

Great products are only useful if you can receive the cash from customers

Cash received from customers

The MoonShine Company's statement of comprehensive income shows that the company generated $1296 in sales during the year. To determine cash receipts from those sales, the balance sheet account related to sales – Accounts Receivable – must be examined.

MoonShine's balance sheet shows that accounts receivable increased $12 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	$1296
Less: Increase in accounts receivable	12
Cash collected from sales	$1284

Note that had MoonShine'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

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A second approach for calculating cash receipts from sales is to prepare the journal entry that MoonShine would hypothetically make if it recorded its annual sales and the change in receivables in only one entry.

Given sales of $1296, MoonShine would credit Sales for $1296. It would also debit Accounts Receivable for $12 to reflect the increase in the account. To balance the entry, it would debit Cash for $1284. Thus, cash collections from sales are $1284.

Hypothetical entry	Accounts Receivable	12	
	Cash	1284	
	Sales		1296

Cash paid for inventory

MoonShine shows $843 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, MoonShine must examine the inventory account. Inventory increased by $27 during the year. An increase in inventory means that it bought more inventory than it sold. Therefore, it must have purchased $870 of inventory during the year.

Inventory sold during the period	$843
Plus: Increase in inventory	27
Inventory purchased during the period	$870

Note that had MoonShine'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, MoonShine must examine accounts payable. Accounts payable increased $24 during the year. The Accounts Payable account increases when purchases are made but no cash is paid. Therefore, it must have paid for only $846 of its $870 in purchases.

Inventory purchased during the period	$870
Less: Increase in accounts payable	24
Cash paid to suppliers for the period	$843

Note that had MoonShine'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.

Hypothetical entry	Cost of Goods Sold	843	
	Inventory	27	
	Accounts Payable		24
	Cash		846

Cash paid for inventory can also be determined by preparing the entry that MoonShine would hypothetically make to record the activity in the Cost of Goods Sold, Inventory and Accounts Payable accounts.

Given cost of goods sold of $843, MoonShine would debit Cost of Goods Sold for $843. It would also debit Inventory $27 for its increase during the year and credit Accounts Payable $24 for its increase during the year. To balance the entry, it would credit Cash for $846. Thus, cash paid for inventory is $846.

Cash paid for operating expenses

MoonShine'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

MoonShine's statement of comprehensive income shows $42 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 $12, meaning that MoonShine used $12 of insurance it had purchased in

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a previous period. As a result, cash paid for insurance in the current period was only $10.

Insurance expense for the period	$42
Less: Decrease in prepaid insurance	12
Cash paid for insurance	$30

Note that had MoonShine'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, MoonShine would debit Insurance Expense for $42 and credit Prepaid Insurance for $12. Cash would then be credited to balance the entry, showing cash payments for insurance to be $30.

Hypothetical entry	Insurance Expense	42	
	Prepaid Insurance		12
	Cash		30

Salaries expense and electricity expense

MoonShine shows $189 of salaries expense and $84 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 $189 to employees.

Salaries expense for the period	$189
Change in salaries payable	0
Cash paid to employees	$189

Electricity Payable increased $15 during the year, meaning that MoonShine used electricity during the year for which it did not pay. Therefore, it paid only $69 for electricity during the year.

Electricity expense for the period	$84
Less: Increase in electricity payable	15
Cash paid for electricity	$69

Note that had MoonShine'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, MoonShine would debit Salaries Expense for $189. 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 $189.

Hypothetical entry	Salary Expense	189	
	Cash		189

For electricity, MoonShine would debit Electricity Expense for $84 and credit Electricity Payable for $15. Cash would be credited to balance the entry, showing cash payments to be $69.

Hypothetical entry	Electricity Expense	84	
	Electricity Payable		15
	Cash		69

Cash paid for taxes

MoonShine's statement of comprehensive income shows $24 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 $21 during the year, meaning that MoonShine paid not only current-year taxes of $24, but also $21 of prior-year taxes. Thus, taxes paid in this period were $45.

Income tax expense for the period	$ 24
Plus: Decrease in taxes payable	21
Cash paid for taxes	$45

Note that had the taxes payable increased during the year, the increase would have been subtracted from income tax expense.

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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, MoonShine would debit Income Tax Expense for $24 and debit Taxes Payable for $21. Cash would be credited to balance the entry, showing cash payments to be $45.

Hypothetical entry			
	Income Tax Expense	24	
	Taxes Payable	21	
	Cash		45

Other revenues and expenses

MoonShine'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.

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Net operating cash flows

Based on the previous calculations, MoonShine's operating activities section of its CFS is shown in **Exhibit 12.3**. A summary of adjustments used to generate the numbers is found in **Exhibit 12.4**.

Exhibit 12.3 THE MOONSHINE COMPANY'S OPERATING CASH FLOWS USING THE DIRECT METHOD

The MoonShine Company Statement of Cash Flows		
Cash flows from operating activities		**2023**
Cash receipts from customers		$1284
Less cash payments:		
To suppliers	$846	
To employees	189	
For insurance	30	
For electricity	69	
For taxes	45	1179
Net cash provided by operating activities		$ 105

Exhibit 12.4 SUMMARY OF ADJUSTMENTS USED IN THE DIRECT METHOD

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

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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 MoonShine Company information in **Exhibit 12.2**.

Adjustments for non-cash effects on net income

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

MoonShine's statement of comprehensive income in **Exhibit 12.2** shows only one non-cash expense: depreciation expense of $75. Therefore, the $75 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'. Another company might generate a gain from the early retirement of debt or a 'loss on acquisition'.

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.

MoonShine's Statement of comprehensive income shows only one gain or loss from an investing or financing activity: a $3 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 $3 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.

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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.

MoonShine'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

MoonShine's balance sheet shows a $12 increase in accounts receivable. Accounts receivable increases when sales are made without receiving cash. Therefore, $12 of the reported sales revenue was not collected in cash and must be removed from revenues. Removing $12 from revenue is accomplished by subtracting $12 from profits.

Change in inventory

MoonShine's inventory increased by $27 during the year. Inventory increases when a company purchases more inventory than it sells. Therefore, it must have purchased $27 more in inventory than it sold during the year. So that cash flows reflect all payments for purchases, the $27 must be added to cost of goods sold. This results in a reduction to profits of $27 to reflect the cash flow associated with inventory.

Change in prepaid insurance

MoonShine has a decrease in prepaid insurance of $12. Prepaid insurance decreases when a company uses insurance that it has already purchased. Thus, a decrease of $12 means that it used $12 of insurance that it purchased in a previous period. As a result, insurance expense is $12 greater than the cash paid for insurance and should be reduced to reflect the cash paid for insurance. Reducing cash paid for expenses by $12 is accomplished by adding $12 to profits.

Change in accounts payable

MoonShine's balance sheet shows that accounts payable increased by $24 during the year. Accounts payable increases when inventory is purchased without paying cash, so an $24 increase means that it did not pay for $24 of its purchases calculated previously. Therefore, the $24 must be removed from expenses. This is accomplished by adding $24 to profit.

Change in electricity payable

MoonShine has an increase of $15 in electricity payable. Electricity payable increases when a company incurs electricity expense but does not pay cash. Thus, the $15 increase means that the expenses are $15 greater than the cash paid. As a result, the $15 of expenses must be removed from profits. This is accomplished by adding $15 to profits to reflect the cash outflow associated with electricity.

Change in taxes payable

MoonShine's balance sheet shows that taxes payable decreased $21 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 $21 decrease therefore means that it paid $21 more than it expensed. As a result, the $21 should be added to expenses. This is accomplished by subtracting $21 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.

Jonathan Tyler

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 also may be critical for the survival of your business

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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 12.5**. 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.

Exhibit 12.5 **THE MOONSHINE COMPANY'S OPERATING CASH FLOWS USING THE INDIRECT METHOD**

The MoonShine Company		
Cash flows from operating activities		**2023**
Profits		$42
Adjustments to reconcile profits after income tax to net cash inflows from operating activities		
Depreciation expense	$ 75	
Gain on sale of equipment	(3)	
Increase in accounts receivable	(12)	
Increase in inventory	(27)	
Decrease in prepaid insurance	12	
Increase in accounts payable	24	
Increase in electricity payable	15	
Decrease in taxes payable	(21)	63
Net cash provided by operating activities		$105

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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 MoonShine's balance sheet in **Exhibit 12.2**. 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 MoonShine's cash flows from investing activities.

Investments

According to MoonShine's balance sheet, investments increased by $66. Without any information to the contrary, it is assumed that it purchased investments for $66 cash. Thus, a cash outflow of $66 from the purchase of investments is reported in investing activities.

Equipment

MoonShine's balance sheet shows a $198 increase in property and equipment during the year. Thus, it must have purchased equipment during the year. The statement of comprehensive income shows a $3 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 us assume MoonShine discloses that the $3 gain on the sale of equipment arose from selling equipment for $18, with an original cost of $30 and accumulated depreciation of $15. Thus, an $18 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

MoonShine's equipment account increased $198 during the year. Without any additional information, it would be assumed that it purchased $198 in equipment for cash. However, the additional information discloses that equipment with a cost of $30 was sold during the year. Therefore, it must have purchased $228 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

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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 12.6**. The three items resulted in a net cash *outflow* from investing activities of $92. MoonShine was using its cash to invest in additional non-current assets.

Exhibit 12.6 **THE MOONSHINE COMPANY'S INVESTING CASH FLOWS**

The MoonShine Company	
Cash flows from investing activities	**2023**
Purchase of equipment	$(228)
Sale of equipment	18
Purchase of investments	(66)
Net cash used in investing activities	($276)

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 (buy-back) 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.

Jonathan Tyler

Banks are the primary source of business borrowings

To illustrate, consider again the MoonShine Company's balance sheet in **Exhibit 12.2**. 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 MoonShine's cash flows from financing activities.

Non-current liabilities

According to MoonShine's balance sheet, non-current liabilities increased $135 during the year. Without any information to the contrary, it is assumed that it borrowed $135 in cash. Thus, a cash inflow of $135 from the borrowings is reported in financing activities.

Contributed equity

MoonShine's balance sheet shows a $30 decrease in shareholders' equity. Thus, without any additional information, it is assumed that MoonShine must have repurchased (bought back) shares for $30 cash. Thus, a cash outflow of $30 from the share buy-back is reported in financing activities.

The issue of shares, after the initial public offer (floating the company), and the buying back of shares are relatively uncommon activities (CSL's semi-regular buy-backs are an exception and during the pandemic in early 2020 a number of companies such as National Australia Bank and Cochlear issued more shares). 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 a company.

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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. MoonShine's balance sheet shows that retained earnings increased $27 during the year, from $234 to $261. The statement of comprehensive income shows that profits were $42. Therefore, dividends declared can be calculated as follows:

Retained earnings, beginning balance	$234	
Plus: Profits	42	
Less: Dividends declared	(??)	?? = $15
Retained earnings, ending balance	$261	

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 $15 of the dividends must have been paid. Thus, a cash outflow of $15 from the payment of dividends is reported in financing activities. While dividends paid are likely to be well publicised, this is usually on a per-share basis (and shown separately for interim and final dividend), and even detailed study of the Notes to the Financial Statements may not reveal the total.

Net financing cash flows

The three cash flows from financing activities are shown in **Exhibit 12.7**. The three items resulted in a net cash inflow from financing activities of $90. MoonShine generated $90 more from financing activities than it paid.

Exhibit 12.7 THE MOONSHINE COMPANY'S FINANCING CASH FLOWS

The MoonShine Company	
Cash flows from financing activities	**2023**
Long-term borrowings	$135
Payment of dividends	(15)
Repurchase of shares	(30)
Net cash provided by financing activities	$90

Complete statement of cash flows: indirect method

MoonShine's final CFS, using the indirect method, is shown in **Exhibit 12.8**. The net decrease in cash of $81 corresponds to the change in the cash account from MoonShine'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

Exhibit 12.8 THE MOONSHINE COMPANY STATEMENT OF CASH FLOWS (INDIRECT METHOD)

The MoonShine Company Statement of Cash Flows for year ended 30 June 2023		
Cash flows from operating activities		
Profits after income tax		$ 42
Adjustments to reconcile profits after tax to net cash provided by operating activities		
Depreciation expense	$ 75	
Gain on sale of equipment	(3)	
Increase in accounts receivable	(12)	
Increase in inventory	(27)	
Decrease in prepaid insurance	12	
Increase in accounts payable	24	
Increase in electricity payable	15	
Decrease in taxes payable	(21)	63
Net cash provided by operating activities		$ 105
Cash flows from investing activities		
Purchases of equipment	$(228)	
Sale of equipment	18	
Purchases of investments	(66)	
Net cash used in investing activities		(276)
Cash flows from financing activities		
Long-term borrowings	$ 135	
Payment of dividends	(15)	
Repurchase of ordinary shares	(30)	
Net cash provided by financing activities		90
Net decrease in cash		$ (81)
Cash, beginning of the year		135
Cash, end of the year		$ 54

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For CSL, the cash flow information is summarised in **Exhibit 12.9**.

Exhibit 12.9 **ACCOUNT BALANCES FROM CSL'S 2020 ANNUAL REPORT (ROUNDED TO NEAREST $ MILLION)**

Source	Accounts	2020	2019
Statement of cash flows	Cash flows from operating activities	$2 488	$1644
	Net capital expenditures (on PPE)	1207	1118
	Net expenditure on intangibles and business acquisitions and other investments	160	170
	Dividends paid	883	807

Source: Adapted from CSL's *Annual Report 2019/2020*.

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LO7 Analysing a company's statement of cash flows

The CFS 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 requires the information from CSL's Consolidated Statement of Cash Flows and notes to the financial statements (see this book's appendix).

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. 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 buy-backs)
= 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 the 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 12.9**:

	2020	2019
Cash flows from operating activities	$2 488	$1644
– Capital expenditures on PPE + other acquisitions	(1207 + 160)	(1118 + 170)
– Dividends	(883)	(807)
Free cash flow	$ 238	($ 451)

In 2020, CSL had a positive free cash flow. That is, it generated more cash from operations than it paid for PPE and dividends, even including expenditure on intangibles and business acquisitions. This is one reason the balance in Cash increased from $658 million to $1151 million. It was a different story in 2019 with a negative $451 million in free cash, which was one contributing factor to the balance in Cash decreasing from $813 million to $658 million. Going on 2020 results, CSL will not need to borrow (or raise more contributed equity) for an expansion strategy.

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

cash flow adequacy ratio
A ratio that compares free cash flow to the average amount of debt maturing in the next five years and measures the ability to pay maturing debt.

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amount of debt maturing in the next five years, using the following formula:

KEY FORMULA 12.1: CASH FLOW ADEQUACY RATIO

$$\text{Cash Flow Adequacy Ratio} = \frac{\text{Free Cash Flow}}{\text{Average Amount of Debt Maturing in Five Years}}$$

Details are given in Note 11 (d) of CSL's *Annual Report 2019/2020* where 'Contractual payments due' are divided into '1 year or less', 'Between 1 year and 5 years' and 'Over 5 years'. Therefore, CSL's 2020 cash flow adequacy ratio was:

$$\$238 \div (\$1769 + \$2577) \div 5 = 27\%$$

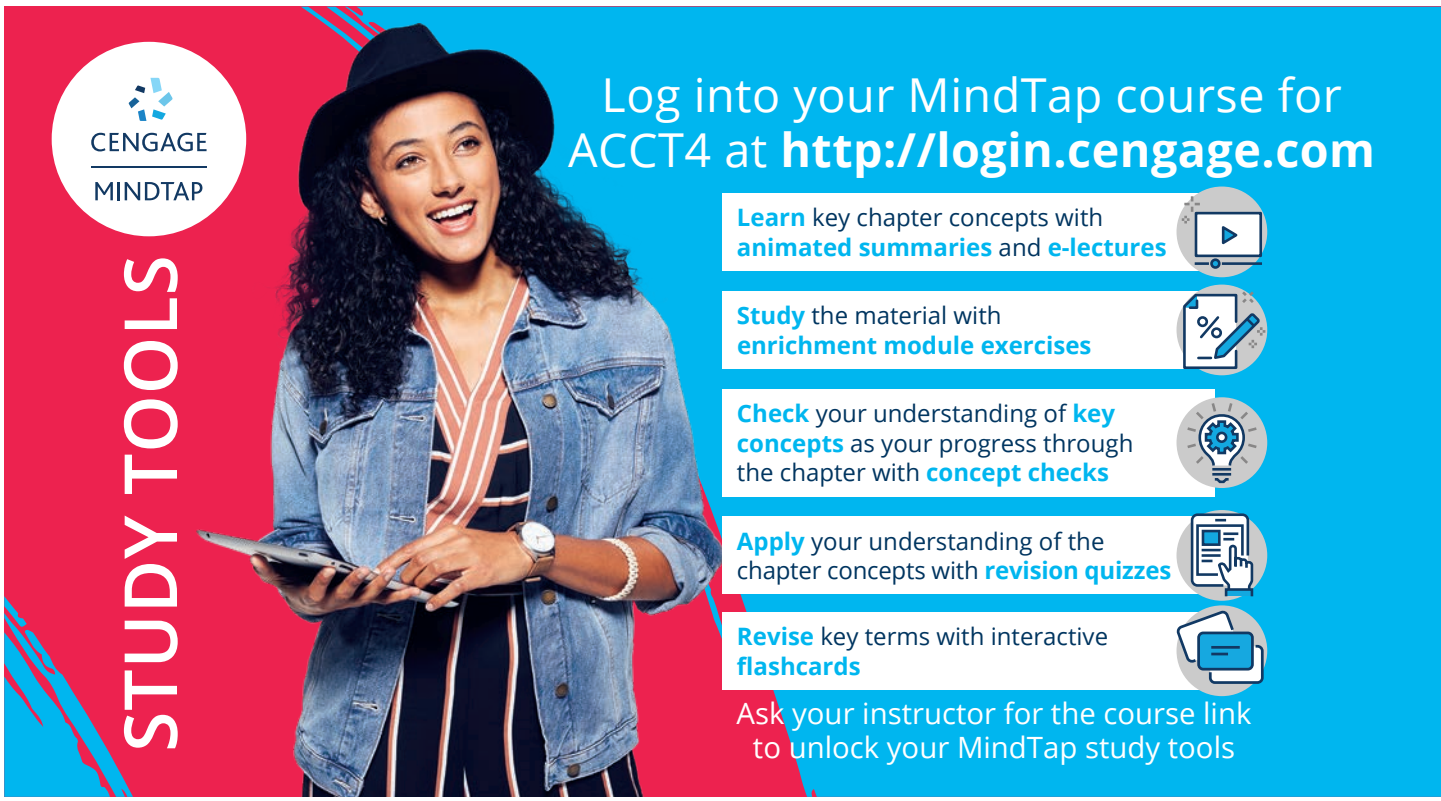
Because this ratio compares free cash flow to maturing debt, it represents a company's ability to generate enough cash to pay its debt. In general, companies may like this ratio to be higher rather than lower. All other things being equal, a higher ratio indicates a greater ability to generate sufficient cash from operations to pay upcoming debt.

For CSL in 2019 the calculation is meaningless (there was no free cash flow), but in 2020 it was less than 30 per cent.

The negative free cash flow in 2019 indicated an apparent inability to repay any debt from operations after buying PPE and paying dividends. In fact, cash did need to be raised to pay dividends and repay borrowings in 2019. Even in 2020, less than 30 per cent of debt could have be repaid from free cash flow. Despite this apparent cash shortage, CSL expanded. Such an analysis is limited and misses the richer information contained in CSL's CFS and Note 11.

During the 2019–20 financial year, CSL's share price increased from $215 to $297, over 38 per cent, which is even more impressive given an over 5 per cent decline in the overall Australian share market (All Ordinaries Index). CSL is a large, rapidly growing biotechnology company that warrants deeper analysis; this is undertaken in the next chapter.

MINDTAP Test your understanding with the revision quizzes for this chapter.



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EXERCISES

1 Classify cash flows

LO1

A business enters into the following independent transactions (all figures in millions):

i Issued $290 of ordinary shares in exchange for cash.
ii Borrowed $480 from the bank.
iii Received $270 in cash from accounts receivable.
iv Paid $76 into an account payable.
v Exchanged (issued) $55 of ordinary shares upon conversion of debentures (bonds) with a face value of $55.
vi Declared and paid a cash dividend of $748.
vii Sold an investment costing $130 for $130 in cash.
viii Bought back shares, $920.
ix Paid tax, $110.
x Purchased property, $800.

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 (notes) 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 $34 000 cash.
ii Paid an account payable relating to inventory of $8900 with cash.
iii Recorded cash sales of $67 000 for the period.
iv Purchased a new warehouse for $234 000. The seller of the building accepts 10 000 shares as payment.
v Issued debentures at face value of $69 000.
vi Repurchased 200 of the company's own shares on the open market for $147 000.
vii Purchased a new excavator for $118 000 by signing a 180-day note payable.
viii Collected cash of $3400 from a customer in satisfaction of accounts receivable.
ix Sold 200 CSL shares for their book value of $52 000.
x Paid $2000 for renewal of the meteor insurance policy.
xi Paid dividends of $50 000 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 CFS.

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 was $85 000.
iii Rent expense was $99 000. The opening balance of prepaid rent was $8000, and the 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 $150 000 at the beginning of the year and $194 000 at the end of the year. Emma reported sales of $2 300 000 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 CFS.

7 Calculate cash paid for purchases

LO3

The Kapyong Company's balance sheet included an inventory balance of $105 000 at 30 June 2022 and $142 000 at 30 June 2023. Accounts payable balances were $78 000 and $47 000 at 30 June 2022 and 30 June 2023, respectively. Kapyong's

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accounts payable only relate to inventory purchases. Cost of goods sold as reported on the 2023 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 CFS.

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	$75 000
Prepaid rent, end of year	93 000
Rent expense	120 000
Cash paid for rent during the year	(a)
Income taxes payable, beginning of year	75 000
Income taxes payable, end of year	93 000
Income tax expense	120 000
Cash payments for income taxes	(b)
Accounts payable, beginning of year	240
Accounts payable, end of year	900
Inventory purchased during the year	76 500
Cash paid for inventory	(c)

REQUIRED

Calculate the missing information for entries (a) to (c).

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.
viii decrease in salaries payable.

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 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 increase in accounts payable
ii decrease in accounts receivable
iii purchase of a new conveyor belt system
iv buy-back of shares
v gain on the sale of old conveyor belt system
vi depreciation expense
vii decrease in inventory
viii decrease 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:

	2022	2021
Accounts receivable	$220 000	$188 000
Inventory	140 000	180 000
Prepaid insurance	48 000	40 000
Accounts payable	88 000	60 000
Income taxes payable	40 000	56 000
Interest payable	248 000	36 000
Profit after tax	980 000	
Depreciation expense	100 000	

REQUIRED

Prepare the operating activities section of the CFS using the indirect method and explain why cash flow 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 CFS 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.

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vii Purchased a new warehouse by issuing debentures.
viii Purchased inventory for cash.
ix Bought back own shares (share buy-back) 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:

	2024	2023
Equipment	$255 000	$360 000
Accumulated depreciation (equipment)	150 000	165 000

A depreciation expense of $45 000 was reported on the statement of comprehensive income for 2024. Equipment with an original cost of $105 000 was sold for $1500 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 $400 000 was paid.
iii A 90-day note payable was issued for $100 000 cash.
iv $500 000 was paid to buy back the company's own shares.
v Depreciation expense for the year was 6 300 000.
vi Notes of $500 000 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 (figures in millions):

	Duong	Dinh
Cash flows from operating activities	$45	$45
Profits after income tax	25	25
Capital expenditures	10	13
Dividends declared and paid	6	2
Average amount of debt maturing in five years	4	6

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

Suying reports the following cash flows from investing and financing activities over the past three years (in thousands):

	2023	2022	2021
Cash flows from investing activities			
Purchase equipment	$(803)	$(2 768)	$ (752)
Sales of investments	–	1204	–
Purchase of investments	–	(1204)	–
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 buy-back	–	(1200)	–
Net cash used/provided by financing activities	(50)	(1250)	3 134

REQUIRED

From the information above, describe the major ways in which Suying used investing and financing cash flows over the three years.

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PROBLEMS

19 Prepare operating cash flows under the direct method

LO3

The following information is provided for the Hildebrand Company:

Balances at 30 June	2024	2023
Accounts Receivable	$ 2 500	$ 1500
Inventory	26 000	32 000
Maintenance Supplies	2 000	1000
Accounts Payable	4 000	3 000
Taxes Payable	2 000	3 500
Interest Payable	1500	2 500
2024 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 CFS 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 Teddy Corporation are as follows (all figures in millions):

Comparative balance sheets as at 30 June		
	This Year	Last Year
Cash and cash equivalents	$ 195	$ 135
Accounts receivable	150	165
Inventory	375	525
Property, plant and equipment	2790	2235
Accumulated depreciation	(810)	(600)
Total assets	$2700	$2460
Accounts payable	$ 330	$315
Unsecured syndicated bank loan (long-term)	540	600
Total liabilities	$870	$915
Ordinary shares	$1050	$840
Retained earnings	780	705
Total shareholders' equity	1830	1545
Total liabilities and shareholders' equity	$2700	$2460

The following additional information is available:

i Profits after tax this year were $150.
ii Cash dividends of $75 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 CFS 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 SAS Company is as follows (figures in thousands):

Comparative balance sheets as at 30 June		
	2024	2023
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

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Comparative balance sheets as at 30 June		
	2024	2023
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 2024	
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 CFS for SAS for 2024 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

Following are Complete Company's two financial statements (in millions):

Income statement for the year ending 30 June 2022	
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		
	2022	2021
Cash	$ 45	$ 80
Accounts receivable	155	115
Inventory	225	190
Prepaid insurance	22	32
Total current assets	$447	$417
Property and equipment	1250	1050
Accumulated depreciation	(175)	(140)
Total property and equipment	$1075	$ 910
Total assets	$1522	$1327
Accounts payable	$ 120	$ 135
Income taxes payable	155	175
Total current liabilities	$ 275	$ 310
Loan	400	325
Total liabilities	$ 675	$ 635
Contributed equity	525	475
Retained earnings	322	217
Total shareholders' equity	$ 847	$ 692
Total liabilities and equity	$1522	$1327

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 taking out a loan from the bank.
v Dividends were paid.

The CEO has posed some questions regarding this year's results. She is pleased that the profit margin is over 17 per cent; however, the decrease in the cash balance during such a profitable year troubles her.

REQUIRED

a Prepare a CFS 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.
c If increasing cash is important, discuss five things that could be done to increase Complete's cash balance over the next year.

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CASES

23 Research and analysis

LO1, 7

Access the latest available annual report for both CSL and Cochlear. Note that both companies end their financial year on 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' CFS. 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 this book's appendix.
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 CFS. The CEO is concerned because operating cash flows are down compared to last year. 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 CFS:

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.

MINDTAP Download the Enrichment Modules for further practice.

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

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 @#%& CFS?' 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 CFS.

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 $800 000 in operating cash flows, paid $500 000 for new equipment (normal annual capital expenditures), and paid $100 000 in dividends. Sarah is interested in significantly expanding this year. To do so, she needs to spend $2 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, 4 per cent, $2 000 000 note
ii six-year, 6 per cent, $2 000 000 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?

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13 FINANCIAL STATEMENT ANALYSIS

Learning Objectives

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

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.

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The first 12 chapters of this book examined the various aspects of financial accounting – the process of identifying, measuring, recording and communicating economic information to external stakeholders to permit informed (and ethical) decisions. This chapter demonstrates how to analyse the products of this process – primarily the statement of comprehensive income and balance sheet but also statement of cash flows and statement changes in equity – to make informed decisions about a company, with a focus 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-tenth the size of CSL and not a direct competitor. (Size is measured by 'market capitalisation' – how much you would have to pay to buy all the shares in a company at the current selling price, so this will change on a daily basis as the share price changes.) 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 stakeholders (investors, creditors, customers, employees, governments and even management) to understand how effectively and efficiently companies like Cochlear and CSL are conducting their businesses and their resulting financial performance, especially in comparison to each other. Care needs to be taken when looking at the 2020 results because they reflect the impact of the COVID-19

Leon Sidik

Cochlear and CSL are two of the largest biotechnology companies in Australia

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pandemic. While CSL (as we found in Chapter 2) reported an almost 16 per cent increase in comprehensive income (with increased sales and decreased cost of goods sold), Cochlear, as we will discover, had a half-billion dollar turnaround, primarily because of 'Patient litigation expenses', with gross profits (probably reflecting the reduction of implants during COVID-19) down almost 10 per cent.

LO1 Financial statement analysis

financial statement analysis
The process of applying analytical tools to a company's financial statements to understand the business' financial health.

Financial statement analysis is the process of applying analytical tools to a business' financial statements to understand the financial health of the business. The goal of such an analysis is to provide some context for understanding the accounting numbers on the financial statements. Ultimately, financial analysis should help all stakeholders, 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 often considered the main goal of financial accounting.

Financial analysis requires the following:

- financial information
- standards of comparison
- tools of analysis.

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. (After studying this chapter you will have some basic skills in financial analysis, but you should not believe you have a full skill set to financially analyse a company and make investment decisions based only on what you have learned.)

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 in share price by CSL of over 200 per cent in early 2000 but a falling back since. Cochlear in early 2000 was up over 150 per cent, while the weighted average of the top 50 companies listed on the ASX did not reach a 50 per cent increase (ignoring dividends for all). Note the decreases for all three in March 2020 due to the impact of the COVID-19 pandemic.

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 online in their annual reports.

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.

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

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Exhibit 13.1 **COMPARISON OF SHARE PRICE CHANGES FOR COCHLEAR, CSL AND THE ASX TOP 50 INDEX, 2016–20 INCLUSIVE**

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 a negative total comprehensive income in 2020 of A$217 million, compared to CSL's US$2102 million (approximately A$3 billion). However, analysis such as return on assets (as we have seen in previous chapters) makes the size and currency differences irrelevant. That said, with Cochlear reporting a loss, many of its income analyses will be expressed as negative, making direct comparison with CSL not as straightforward if both had made a profit.

Analytical tools

There are many tools used to conduct a financial analysis. As discussed in previous chapters, 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 (as we undertook in Chapter 2). 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 in a 'body mass index') 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 2020 financial statements and draws comparisons with CSL.

MINDTAP Review this material with the e-lecture.

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. (This is similar to what many of us do when we are interested in our personal health and fitness. We may compare our weight or time to complete a triathlon to a previous measure or to our PB – personal best.) 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

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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 (or no) 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 has a 200 per cent increase, but such an increase is almost immaterial to a $50 billion company.

Balance sheet horizontal analysis

Exhibit 13.2 contains a horizontal analysis of Cochlear's 2020 and 2019 balance sheets. The analysis was undertaken on an Excel spreadsheet where the 2019 figure was subtracted from the 2020 figure to obtain the dollar change [=C4–D4] and then the percentage change by dividing the dollar change by the 2019 figure and rounding to two decimal places [=ROUND(D5/C5,2)]. We see Cash has increased 6 per cent (6.19% to be exact, but little is usually gained from analysing changes to two decimal places).

The analysis shows a number of new balance sheet items, which are labelled 'Note' in the '% Change' column because the account is new and there is no figure for 2019. (It should be noted that this highlights one of the potential limitations of simple analysis.) During the 2019–20 financial year, Cochlear raised significant capital (Share capital increased over $1 billion), which is reflected in the increase in Cash and Term deposits (up over $950 million).

This is a balance sheet that has extensive reference to 'Notes'. Take 'Note 5.8: Right of use of assets', which recognises the changes due to the adoption of the new 'Lease' standard AASB16. The asset increase has a corresponding liability recognition – both current and non-current 'Lease liability'.

Unrelated to major financing activities and changes in accounting standards are some balance sheet items related to the deteriorating financial results; for example, the increase in both current and non-current Tax assets, which are up by over $100 million. This also demonstrates the caution needed when looking at a '% Change'. Current tax assets has gone up 469 per cent from $12 million to $69 million, an increase of $57 million, while non-current Deferred tax assets increased by $47 million, but this equated to an increase of just 47 per cent because of the substantial opening balance of $100 million.

Similarly, the increase in current Loans and borrowings from $3 million to $393 million wins the prize for its percentage increase of 11 812. The amount is substantial, but the percentage change is out of proportion. The increase in Total current assets is $458 million, compared to $390 million for current Loans and borrowings, but this is only 127 per cent ('only' in comparison with current Loans and borrowings at 11 812 per cent – you may remember CSL had a 2 per cent decrease in Total current liabilities). Caution must be exercised when looking only at the dollar change or only looking at the percentage change.

This is an unusual balance sheet, about 25 per cent larger (see Total assets) over the year. When we analysis the statement of comprehensive income, some of the changes in the balance sheet will become clearer.

Exhibit 13.3 contains a horizontal analysis of a condensed version of Cochlear's 2020 and 2019 combined income statement and statement of comprehensive income.

Income statement horizontal analysis

The analysis shows that Revenue decreased by 7 per cent while Cost of sales (COS) decreased by only 2 per cent (but it should be noted COS is a relatively small percentage of sales). Gross profit was down 9 per cent. Other income and Other expenses both increased. Again the dollar increase was not substantially different ($49 million compared to $58 million), but the percentage changes were (169 per cent compared to 1325 per cent) due to the low Other expenses ($4.4 million) in 2019.

The major contributor to the negative financial turnaround was Patent litigation expense. Note 2.3 said:

> In March 2020, the US Court of Appeals affirmed the US District Court's decision against Cochlear Limited ... the long-running patent dispute ... paying USD 268 million in relation to patent infringement damages and a further USD 12 million in post judgment interest ... which have been expensed in the Income Statement. The Defendants intend to lodge an appeal with the US Supreme Court against the Judgment.[1]

Winning an appeal could provide a windfall gain in the future.

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 analytical technique that states each account balance

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Exhibit 13.2 HORIZONTAL ANALYSIS OF COCHLEAR LIMITED BALANCE SHEET AS AT 30 JUNE 2020 AND 2019

	A	B	C	D	E	F
1	Cochlear Balance Sheet					
2		Note	2020 $m	2019 $m	$ Change	% Change
3	**Assets**					
4	Cash and cash equivalents		565.0	78.6	486.4	6.19
5	Term deposits	6.3(b)	365.0		365.0	Note
6	Trade and other receivables	6.4(b)	235.5	319.7	–84.2	–0.26
7	Forward exchange contracts		1.2	2.2	–1.0	–0.45
8	Inventories	5.1	223.8	195.4	28.4	0.15
9	Current tax assets	3.2	69.4	12.2	57.2	4.69
10	Prepayments		17.6	26.9	–9.3	–0.35
11	**Total current assets**		**1,477.5**	635.0	842.5	1.33
12	Other receivables		5.0	3.3	1.7	0.52
13	Forward exchange contracts		2.1	2.1	0.0	0.00
14	Property, plant and equipment	5.2	230.5	166.5	64.0	0.38
15	Intangible assets	5.3	410.3	424.4	–14.1	–0.03
16	Investments	5.4	25.9	47.8	–21.9	–0.46
17	Equity accounted investments	5.5	69.0		69.0	Note
18	Deferred tax assets	3.2	147.1	100.1	47.0	0.47
19	Right of use asset	5.8	208.3		208.3	Note
20	**Total non–current assets**		**1,098.2**	744.2	354.0	0.48
21	**Total assets**		**2,575.7**	**1,379.2**	1196.5	0.87
22	**Liabilities**					
23	Trade and other payables		159.3	160.8	–1.5	–0.01
24	Forward exchange contracts		0.3	20.9	–20.6	–0.99
25	Loans and borrowings	6.3(a)	393.1	3.3	389.8	118.12
26	Current tax liabilities	3.2	7.2	34.8	–27.6	–0.79
27	Employee benefit liabilities	4.2	54.4	69.5	–15.1	–0.22
28	Provisions	5.6	130.2	27.3	102.9	3.77
29	Deferred revenue		47.0	42.9	4.1	0.10
30	Lease liability	5.8	26.0		26.0	Note
31	**Total current liabilities**		817.5	359.5	458.0	1.27
32	Trade and other payables		13.6	42.4	–28.8	–0.68
33	Forward exchange contracts		1.7	7.6	–5.9	–0.78
34	Loans and borrowings	6.3(a)	79.9	178.3	–98.4	–0.55
35	Employee benefit liabilities	4.2	12.4	13.1	–0.7	–0.05
36	Provisions	5.6	27.2	44.2	–17.0	–0.38
37	Deferred tax liabilities	3.2	14.1	5.5	8.6	1.56
38	Deferred revenue		2.3	2.7	–0.4	–0.15
39	Lease liability	5.8	205.5		205.5	Note
40	**Total non–current liabilities**		356.7	293.8	62.9	0.21
41	**Total liabilities**		**1,174.2**	**653.3**	520.9	0.80
42	**Net assets**		**1,401.5**	**725.9**	675.6	0.93
43	**Equity**					
44	Share capital		**1,272.4**	182.3	1090.1	5.98
45	Reserves		12.7	(15.3)	28.0	–1.83
46	Retained earnings		116.4	558.9	–442.5	–0.79
47	**Total equity**		**1,401.5**	**725.9**	675.6	0.93

Source: Cochlear Limited, *Annual Report* 2020, p. 65.

Note: 0.10 = 10% and 1.00 = 100%.

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Exhibit 13.3 HORIZONTAL ANALYSIS OF COCHLEAR LIMITED (CONDENSED) INCOME STATEMENT AND COMPREHENSIVE INCOME FOR THE 2020 FINANCIAL YEAR

	A	B	C	D	E	F
1	Cochlear Income and Comprehensive Income Statements					
2		Note	2020 $m	2019 $m	$ Change	% Change
3	Revenue	2.2	1,320.6	1,426.7	–106.1	–0.07
4	Cost of sales	2.3	(344.4)	(351.1)	6.7	–0.02
5	**Gross profit**		**976.2**	**1,075.6**	–99.4	–0.09
6	Selling, marketing and general expenses		(470.0)	(450.9)	–19.1	0.04
7	Research and development expenses		(185.1)	(184.4)	–0.7	0.00
8	Administration expenses		(93.8)	(94.8)	1.0	–0.01
9	Other income	2.4	78.1	29.0	49.1	1.69
10	Other expenses	2.3	(62.7)	(4.4)	–58.3	13.25
11	Patent litigation expense	2.3	(503.7)		–503.7	Significant
12	Share of losses on equity accounted investments	5.5	(1.2)		–1.2	Immaterial
13	**Results from operating activities**		**(262.2)**	**370.1**	–632.3	–1.71
14	Finance income interest		1.6	0.7	0.9	1.29
15	Finance expense interest		(10.5)	(5.2)	–5.3	1.02
16	**Net finance expense**		(8.9)	(4.5)	–4.4	0.98
17	**(Loss)/profit before income tax**		**(271.1)**	**365.6**	–636.7	–1.74
18	Income tax benefit/(expense)	3.1	32.8	(88.9)	121.7	–1.37
19	**Net (loss)/profit**		**(238.3)**	**276.7**	–515.0	–1.86
20	Basic (loss)/earnings per share (cents)	2.5	(399.6)	479.6	–879.2	–1.83
21	**Total other comprehensive income, net of tax**		21.6	6.9	14.7	2.13
22	**Total comprehensive (loss)/income**		**(216.7)**	**283.6**	–500.3	–1.76

Source: Limited, *Annual Report 2020*, pp. 63–4.

Note: 0.10 = 10% and 1.00 = 100%.

on a financial statement as a percentage of a base amount on the statement. The base account is total assets (or total liabilities and equity, which is, of course, the same figure) for the balance sheet and revenues for the income statement. The actual calculation is as follows:

KEY FORMULA 13.2: VERTICAL ANALYSIS

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

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 business or 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 2020 and 2019 balance sheet. Percentage changes have been rounded to the closest 1 per cent.

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Exhibit 13.4 **VERTICAL ANALYSIS OF COCHLEAR LIMITED BALANCE SHEET AS AT 30 JUNE 2020 AND 2019**

	A	B	C	D	E	F
1	**Cochlear Balance Sheet**					
2		**Note**	**2020 $m**	**2019 $m**	**2020 %**	**2019 %**
3	**Assets**					
4	Cash and cash equivalents		565.0	78.6	0.219	0.057
5	Term deposits	6.3(b)	365.0		0.142	0.000
6	Trade and other receivables	6.4(b)	235.5	319.7	0.091	0.232
7	Forward exchange contracts		1.2	2.2	0.000	0.002
8	Inventories	5.1	223.8	195.4	0.087	0.142
9	Current tax assets	3.2	69.4	12.2	0.027	0.009
10	Prepayments		17.6	26.9	0.007	0.020
11	**Total current assets**		**1,477.5**	635.0	0.574	0.460
12	Other receivables		5.0	3.3	0.002	0.002
13	Forward exchange contracts		2.1	2.1	0.001	0.002
14	Property, plant and equipment	5.2	230.5	166.5	0.089	0.121
15	Intangible assets	5.3	410.3	424.4	0.159	0.308
16	Investments	5.4	25.9	47.8	0.010	0.035
17	Equity accounted investments	5.5	69.0		0.027	0.000
18	Deferred tax assets	3.2	147.1	100.1	0.057	0.073
19	Right of use asset	5.8	208.3		0.081	0.000
20	**Total non–current assets**		**1,098.2**	744.2	0.426	0.540
21	**Total assets**		**2,575.7**	**1,379.2**	1.000	1.000
22	**Liabilities**					
23	Trade and other payables		159.3	160.8	0.062	0.117
24	Forward exchange contracts		0.3	20.9	0.000	0.015
25	Loans and borrowings	6.3(a)	393.1	3.3	0.153	0.002
26	Current tax liabilities	3.2	7.2	34.8	0.003	0.025
27	Employee benefit liabilities	4.2	54.4	69.5	0.021	0.050
28	Provisions	5.6	130.2	27.3	0.051	0.020
29	Deferred revenue		47.0	42.9	0.018	0.031
30	Lease liability	5.8	26.0		0.010	0.000
31	**Total current liabilities**		817.5	359.5	0.317	0.261
32	Trade and other payables		13.6	42.4	0.005	0.031
33	Forward exchange contracts		1.7	7.6	0.001	0.006
34	Loans and borrowings	6.3(a)	79.9	178.3	0.031	0.129
35	Employee benefit liabilities	4.2	12.4	13.1	0.005	0.009
36	Provisions	5.6	27.2	44.2	0.011	0.032
37	Deferred tax liabilities	3.2	14.1	5.5	0.005	0.004
38	Deferred revenue		2.3	2.7	0.001	0.002
39	Lease liability	5.8	205.5		0.080	0.000
40	**Total non–current liabilities**		356.7	293.8	0.138	0.213
41	**Total liabilities**		**1,174.2**	**653.3**	0.456	0.474
42	**Net assets**		**1,401.5**	**725.9**	0.544	0.526
43	**Equity**					
44	Share capital		**1,272.4**	182.3	0.494	0.132
45	Reserves		12.7	(15.3)	0.005	–0.011
46	Retained earnings		116.4	558.9	0.045	0.405
47	**Total equity**		**1,401.5**	**725.9**	0.544	0.526

Source: Cochlear Limited, *Annual Report 2020*, p. 65.

Note: 0.10 = 10% and 1.00 = 100%.

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The analysis shows a large percentage of assets in Cash and cash equivalents in 2020 (22%), substantially up from 2019 (6%). This was also highlighted in the horizontal analysis above, although there the emphasis was on the percentage increase. Trade and other receivables in 2019 (23%) made up a substantial proportion of Current assets, as well as being the largest single current asset. In 2020, the dollar amount of Current assets decreased by $84 million, but the large increase in Total assets meant that as a percentage of Total assets it fell to 9 per cent. In contrast, CSL in 2020 had 11 per cent of total assets in Receivables and contract assets (12% in 2019). Here the advantage of vertical analysis is highlighted: Cochlear has $236 million in Trade and other receivables, while CSL (when converted to Australian dollars) has almost $2.5 billion, which in 2020 is over 10 times greater, yet both have a similar percentage of Total assets in receivables (CSL 11% and Cochlear 9%).

Returning to Cochlear, Total current assets has risen (46% to 57%) due to increases in Cash and cash equivalents, Term deposits and Current tax assets. For Non-current assets it is interesting to note the dollar increases in Property, plant and equipment ($64 million) was more than offset by the overall increase in assets, resulting in a decrease as a percentage of Total assets (from 12% to 9%). Intangible assets as a percentage has almost halved (from 31% in 2019 to 16% in 2020), yet the dollar amount has decreased by just $14.1 million, again due to the increase in Total assets.

An analysis of liabilities and equity shows that in 2020 over half (54%) of Cochlear's assets were generated by equity, which is a small overall increase from 2019 (which was 53%), but a large dollar and percentage increase ($676 million and 93%, respectively), with all of that increase coming

Making it Real

HOME OWNERSHIP AND HOUSING TENURE

Use of percentages beyond simple financial statement analysis

Secure and affordable housing is fundamental to the wellbeing of Australians. Home ownership continues to be a widely held aspiration in Australia, providing owners with security of housing tenure and long-term social and economic benefits. In recent times, there has been much public debate about the rate of home ownership and housing affordability.

According to the 2016 Census of Population and Housing (Census), there were nearly 8.3 million households in Australia, of which 67 per cent (5.4 million households) were home owners, with 32 per cent (2.6 million households) without a mortgage and 35 per cent (2.9 million households) with a mortgage. Another 32 per cent (2.6 million households) were renters.[2]

While Census data provides the most comprehensive view of housing tenure among Australian households, it is limited to once every five years, so other survey data can be used to monitor changes in housing circumstances during non-Census periods. Survey of Income and Housing data shows that in the 20 years to 2017–18, there had been a decline in the proportion of households owning their home without a mortgage, and an increase in households with a mortgage and in private rental agreements.

Home ownership data from the 2016 Census show a home ownership rate of 67 per cent, down slightly from 68 per cent in 2011. While the home ownership rate has remained at around 67–70 per cent from the mid-1960s, the rate for different age groups has changed markedly.

The home ownership rate of 30–34-year-olds was 64 per cent in 1971, decreasing 14 percentage points to 50 per cent in 2016, according to Census data. For Australians aged 25–29, the decrease was similar – 50 per cent in 1971, decreasing to 37 per cent in 2016. Home ownership rates have also decreased among people nearing retirement. Since 1996, home ownership rates have gradually declined; rates for the 50–54 age group have seen a 6.6 per cent fall over these 20 years (80 per cent to 74 per cent).[3]

Jonathan Tyler

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from Share capital (13% in 2019 and 49% in 2020). The substantial loss in 2020 saw Retained earnings fall dramatically (40.5% to 4.5%).

In Current liabilities, Deferred revenue has increased $4.1 million but has substantially decreased as a percentage of Total assets (31% in 2019 and 1.8% in 2020). Current Loans and borrowings increased (0.2% to 15.3%) and, as discussed above, current and non-current Lease liabilities rose from zero per cent of Total assets to a combined 9 per cent. Between 2019 and 2020, the percentage of assets generated through liabilities decreased marginally from 47.4 per cent to 45.6 per cent, which is exactly as expected given the marginal increase in Total equity. 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 (35%) and inventory (23%) were the largest assets. It also highlights CSL's greater reliance on debt (58%) compared to Cochlear (46%).

Income statement vertical analysis

Exhibit 13.5 contains a vertical analysis of Cochlear's 2020 and 2019 Income and comprehensive income statements.

The analysis shows Cost of sales is around 25 per cent of revenue, leaving a Gross profit of about 74 per cent. This is much the same as 2019 (75.4%), but a higher (better) gross profit margin than CSL (58%). 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 13–14 per cent. Other expenses are listed differently:

- CSL: Selling and marketing expenses, and General and administration expenses
- Cochlear: Selling, marketing and general expenses, and Administration expenses.

Even a comparison of Total comprehensive income requires care. Again, although both are health sector companies, and the 24 per cent result for CSL in no way compares to the negative 16 per cent for Cochlear, the discrepancy may reflect different business models, the different impacts of COVID-19 and particularly Cochlear's Patient litigation expense. While the latter is a significant expense, removing it will not allow a simple analysis because other items (e.g. Income tax benefit) also would be affected.

Exhibit 13.5 VERTICAL ANALYSIS OF COCHLEAR'S INCOME STATEMENT

	A	B	C	D	E	F
1	**Cochlear Income and Comprehensive Income Statements**					
2		**Note**	**2020 $m**	**2019 $m**	**2020 %**	**2019 %**
3	Revenue	2.2	1,320.6	1,426.7	1.000	1.000
4	Cost of sales	2.3	(344.4)	(351.1)	–0.261	–0.246
5	**Gross profit**		**976.2**	**1,075.6**	0.739	0.754
6	Selling, marketing and general expenses		(470.0)	(450.9)	–0.356	–0.316
7	Research and development expenses		(185.1)	(184.4)	–0.140	–0.129
8	Administration expenses		(93.8)	(94.8)	–0.071	–0.066
9	Other income	2.4	78.1	29.0	0.059	0.020
10	Other expenses	2.3	(62.7)	(4.4)	–0.047	–0.003
11	Patent litigation expense	2.3	(503.7)		–0.381	0.000
12	Share of losses on equity accounted investments	5.5	(1.2)		–0.001	0.000
13	**Results from operating activities**		**(262.2)**	**370.1**	–0.199	0.259
14	Finance income interest		1.6	0.7	0.001	0.000
15	Finance expense interest		(10.5)	(5.2)	–0.008	–0.004
16	**Net finance expense**		(8.9)	(4.5)	–0.007	–0.003
17	**(Loss)/profit before income tax**		**(271.1)**	**365.6**	–0.205	0.256
18	Income tax benefit/(expense)	3.1	32.8	(88.9)	0.025	–0.062
19	**Net (loss)/profit**		**(238.3)**	**276.7**	–0.180	0.194
20	Basic (loss)/earnings per share (cents)	2.5	(399.6)	479.6		
21	**Total other comprehensive income, net of tax**		21.6	6.9	0.016	0.005
22	**Total comprehensive (loss)/income**		**(216.7)**	**283.6**	–0.164	0.199

Source: Cochlear Limited, *Annual Report 2020*, pp. 63–4.

Note: 0.10 = 10% and 1.00 = 100%.

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Removing the litigation expense gives a profit before tax of $232 million, down by $133 million on 2019. Using a vertical analysis for 2019, Profit before income tax was 25.6 percent of Revenue, but with the adjusted (litigation removed) figure it is just 18.6 per cent. It would be dangerous to conclude this is the COVID-19 impact on Cochlear, but might be as close as possible without much more in-depth analysis.

The Gross profit differences highlights that some businesses rely on small profit margins and large turnovers (e.g. the sale of fuel by a service station), while others survive on high profit margins and small turnover (e.g. 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.

MINDTAP Review this material with the e-lecture.

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; 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, and the dollar amount of the profit is very dependent on the size of the business or company. Profits do 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.

Cochlear made a substantial loss in 2020. To demonstrate the comparison with CSL, 2019 figures will be used. Some discussion of 2020 will highlight the difficulties of ratio analysis when comparing a loss making business to a profitable one.

MINDTAP Learn more by watching the animation: Ratio analysis

Profit margin

The **profit margin ratio** compares profits to net sales. A higher ratio indicates a greater ability to generate profits from sales. Care is needed as some businesses (like an accountant using a home office) have relatively low turnover (revenue) but high profit margins, while others (like a supermarket) have high turnover but low profit margins. 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.

profit margin ratio
A ratio that compares comprehensive income to net sales and measures the ability to generate profits from sales.

KEY FORMULA 13.3: PROFITABILITY RATIOS: PROFIT MARGIN

$$\text{Profit Margin} = \frac{\text{Total Comprehensive Income}}{\text{Revenue}}$$

Cochlear 2020: −217 ÷ 1321 = 16.4% negative

	2020	2019
Cochlear	(16.4%)	19.9%
CSL	23.9%	22.1%

Cochlear's 2019 profit margin is 19.9 per cent, meaning that the company generated almost 20 cents of profit for every dollar of revenue. Compared to CSL, Cochlear's profit is a little lower in (22.1% compared to 19.9%). Because both are not direct competitors, little can be said about which business is more efficient.

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Two florists in the same suburb may have different business models: one sells thousands of bunches of flowers per day making only a few dollars profit on each, while the other sells a dozen or so exquisite arrangements each day, making over $100 profit on each. The first may have a profit margin of under 10 per cent, while the other is over 50 per cent, but if the overall profit earned by the first is twice that of the second, it is easy to see a preference for owning the first.

The negative 16.4 per cent profit margin for Cochlear is poor but not unexpected, as it relates to a long-running legal matter. Comparing CSL 2020 (23.9%) to Cochlear's 2020 (–16.4%) highlights the one-year *unfortunate* results for Cochlear. Historically, CSL has had a higher profit margin than Cochlear (CSL 21.8% in 2017; Cochlear 17.7%) but there has been a steady improvement for both. By looking at only 2020, the conclusion could be falsely drawn that Cochlear is a failing company. The share graph depicted early in the chapter (**Exhibit 13.1**) shows that up to mid-2019 Cochlear was outperforming CSL, but despite the more recent relatively poor performance, interestingly Cochlear has still outperformed the average share market, so investors may not be too concerned.

Return on equity

return on equity ratio
A ratio that 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 2020: –217 ÷ (1402 + 726) ÷ 2 = 20.4% negative

	2020	2019
Cochlear	20.4% negative	42.5%
CSL	35.7%	38.9%

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 that year. For the 2019 ratios we need the 2018 total equity figure, which is not shown in the Exhibits.

The 2020 ratio of 20.4 per cent shows that Cochlear generated over 20 cents in losses for every dollar of resources provided by shareholders, consistent with the profit margin result above.

The year 2019 provides a more fruitful analysis, with Cochlear recording a higher return on equity than CSL; however, both were substantially higher than the average return on equity for Australian companies of around 10 per cent, which may go a long way to explaining why both companies over the last five years have out-performed the average Australian share market. The 2019 result may be due, at least in part, to both companies highly 'gearing', as discussed later in the chapter.

Return on assets

return on assets ratio
A ratio that 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, the higher the ratio, the happier most stakeholders will be.

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:

$$\frac{(\text{Beginning Total Assets} + \text{Ending Total Assets})}{2}$$

Cochlear 2020: –217 ÷ (2576 + 1379) ÷ 2 = 11.0% negative

	2020	2019
Cochlear	11% negative	22.4%
CSL	15.1%	15.7%

Because 2020 involved large litigation expenses we will concentrate again on 2019 Cochlear, which, consistent with return on equity, had a higher return on assets than CSL. The 2019 ratio of 22.4 per cent shows Cochlear generated over 22 cents in profit for

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every dollar of assets. Historically, this has been the case (Cochlear, 21.2% in 2017; CSL, 18.9%). 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 only allow research costs to be recorded as an asset or 'capitalised' to a very limited extent, but do allow capitalisation of 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 during the year. The ratio represents the return on each share owned by an investor. Although companies normally disclose EPS on their income statement (using profits rather than total comprehensive income), the calculation will be demonstrated nonetheless.

The number of beginning and ending 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: Earnings per share', shows the weighted average shares in 2020 as 59.6 million shares). Without this detailed information, the average is calculated as for other ratios: the opening plus closing balance divided by two. While the number of shares usually does not vary much, even when there are new issues or share buy-backs, many companies have dividend reinvestment schemes, which often result in marginally more shares each year.

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:

$$\frac{(\text{Beginning Balance of Ordinary Shares} + \text{Ending Balance of Ordinary Shares})}{2}$$

Cochlear 2020: –217 ÷ 59.6 = $3.64 negative per share

This is similar to the figure provided by Cochlear (negative $3.99) that calculated EPS on 'Net (loss)/ profits attributable to equity holders of the parent entity' and did not include Other comprehensive income of $22 million, which in 2020 was material (almost 10% of Total comprehensive income). This was not the case in 2019 when Other comprehensive income added only 2.4% to Total comprehensive income. 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. Suffice it to say that EPS calculations can be very complex but are very important – there is a specific (41-page) accounting standard (AASB 133) devoted to calculating EPS.

Note that an EPS has not been included for comparison with CSL. While it is very useful to compare Cochlear's 2019 figure ($284 ÷ 57.7 = $4.92 per share) to the 2020 figure to show the substantial reversal (which we are, by now, very aware), comparing CSL's EPS of $4.63 (or $4.01 in 2019) 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. By contrast, Telstra's EPS in 2020 was $0.51, while the Commonwealth Bank was $5.78.

EPS is useful because it reduces a number such as negative $217 million or $2.1 billion into a more comprehensible $3 or $4 per share figure. For a shareholder with 1000 shares, they know their share of the profit is $3000 or $4000. EPS also is needed to calculate the single most quoted ratio for a listed company: the price earnings ratio (discussed in the next section).

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.[4]

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Alamy Stock Photo/360b; Courtesy CSL

Cochlear and CSL are not direct competitors in the health sector, but they do compete for similar investors

All public companies need to report comprehensive income.

Price to earnings ratio

price to earnings (P/E) ratio
A ratio that compares comprehensive income to a company's share price and provides an indication of investor perceptions of the company.

The **price to earnings (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, 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

$$\text{Price to Earnings Ratio} = \frac{\text{Current Share Price}}{\text{Earnings per Share}}$$

Companies that do not make a profit do not have a P/E ratio calculated, so the following calculation of Cochlear's 2019 P/E ratio uses the $206.84 share price at the close of business at 30 June 2019 (actually 28 June, as 30 June was a Sunday and the ASX does not trade on weekends).

	2019
Cochlear	42
CSL	54 (2020 = 62)

Cochlear's ratio of 42 shows that a share of Cochlear was selling for 42 times EPS at the close of the 2019 financial year. While we cannot compare one company's EPS to another, we can make very valid comparisons of P/E ratios. It would appear investors had more confidence in the future prospects of CSL (P/E 54) when compared to Cochlear. 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 2019 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 15 for the companies listed on the ASX. For comparison, let us look at the most recent (late 2020) figures for Australia's large banks: CBA 12.8, ANZ 15.4, NAB 16.7 and Westpac 27.8. Westpac's P/E ratio indicates its current profits are prudently (conservatively) calculated and/or investors expect much better future earnings, but it still falls short of CSL (44.7). CSL's P/E reflects earnings that are likely to be prudently stated because much of their research and development expenditure is currently expensed in compliance with the Accounting Standard AASB 138 *Intangible Assets*.

Summary of profitability

Based on the five ratios examined, it is clear that Cochlear was profitable in 2019 but suffered in 2020 (due to litigation expenses). Cochlear's *Annual Report 2020* begins with a 'Financial history' and reports 'Net profit adjusted' of $154 million, which excludes $416 million litigation expense and $24 million innovation fund gains. Even the adjusted profit is a substantial decrease on the 2019 results, which were the best on record and culminated five years of increasing profits, with profit more than doubling over the period. Of course, the graph reflects management's view of how the financial results could be best presented. Such numbers are often referred 'non-GAAP earnings' and do not apply all the accounting standards, as the audited Comprehensive income statement shown in **Exhibit 13.3** requires.

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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 (within the next year) obligations. A company must maintain

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CSL analysis

Because we have already calculated some profitability ratios for CSL in 2020 and 2019, we will go back to 2016 to see if the previous four years of CSL analysis pointed to such a successful financial future. 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: Total comprehensive income ÷ Total revenue = $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 2020. All ratios increased, but none more so than EPS, up from $2.26 to $4.63 (over a 100% increase), and the P/E ratio, up from 29.6 to 62.0 (again over a 100% increase). It seems obvious now why the share price rose substantially between 2016 and 2020, but caution needs to be exercised when trying to outpredict 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 out. What will be the price in June 2023, given the extent of their involvement in COVID-19 vaccines?

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 – especially employees, suppliers and creditors – 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 **Exhibit 13.2** and/or **Exhibit 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. Unlike profitability ratios, liquidity ratios are not directly impacted by large one-off expenses, so we will return to primarily examining the 2020 results.

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, but most of the cash generated over the next year and most of the cash paid out relates to normal ongoing operations.

KEY FORMULA 13.8: LIQUIDITY RATIOS: CURRENT RATIO

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Cochlear 2020: 1478 ÷ 818 = 1.81 times

	2020	2019
Cochlear	1.81	1.76
CSL	3.01	2.53

Cochlear's ratio of 1.81 shows that it had $1.81 in current assets for every dollar of current liabilities. This is marginally more than both the prior year but substantially less than CSL's ratios. This means that Cochlear became a little more liquid over the year.

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This is surprising given the more than doubling in Total current assets, but has been matched by the more than doubling in Total current liabilities.

While the trend in liquidity should be monitored, there is disagreement about the optimum level of liquidity. Some unsophisticated analysts consider a ratio near 2 to be ideal, but some investors are critical of maintaining a current ratio that is too high. They would rather the company keep only an adequate amount of assets as current 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 (and most debt payable within one year is likely to be the result of ongoing operations). The current ratio may be of limited use, so 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 usually 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 and cash equivalents, 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
A ratio that 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

$$\text{Quick Ratio} = \frac{\text{Cash + Short-term Investments + Accounts Receivable}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio Simple Calculation} = \frac{\text{Current Assets − Inventory}}{\text{Current Liabilities}}$$

Cochlear 2020: (556 + 365 + 236) ÷ 818 = 1.41

	2020	2019
Cochlear	1.41	1.11
CSL	1.35	0.95

These lower ratios (compared to current) are not surprising given that a manufacturer's major current asset is its inventory. What may be surprising is how much Cochlear 'improved' over the year. Given the impact of COVID-19 on both companies, the higher quick ratios may reflect increased caution by both companies, along with a strategic positioning to weather further financial hardship (Cochlear) or to take advantage of opportunities that may unexpectedly arise (CSL). Cochlear's 2020 ratio of 1.41 shows that at the end of its financial year, the company had $1.41 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. It is worth noting that 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 sell and collect from those 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, but for a retailer like McDonald's or Woolworths net sales are likely to be a very poor substitute (remembering credit card sales are not 'sales on account/credit', as the credit card company pays the retailer almost immediately, less, of course, the 'merchant's fee').

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:

$$\frac{\text{(Opening Balance of Accounts Receivable + Closing Balance of Accounts Receivable)}}{2}$$

Cochlear 2020: 1321 ÷ (236 + 320) ÷ 2 = 4.75 times per year or a turnover of 77 days (366* ÷ 4.75)

[*2019/20 was a leap financial year, but this is not important]

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By comparison, CSL has a turnover of 4.99 times a year or once every 73 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 (which is responsible for determining which customers are allowed to buy now and pay later) and the collections department (which is 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. However, while a higher ratio means less money tied up in inventory, there is also a greater chance of running out of inventory should supply chains be disrupted, like during a pandemic. A high turnover also might indicate a business is not holding stocks of some items and missing out on potential sales. For CSL, holding stock of vaccines in case of, say, an influenza epidemic may be important not just for profits but also for humanitarian reasons and 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:

$$\frac{\text{Beginning inventory} + \text{Ending inventory}}{2}$$

Cochlear 2020: 344 ÷ (224 + 195) ÷ 2 = 1.65

	2020	2019
Cochlear	1.65	1.93
CSL	1.20	1.31

A 1.65 ratio shows that during 2020 Cochlear sold only $1.65 of inventory for every $1 of inventory it had on average in stock. Unlike supermarkets that are likely to closely resemble their competitor's 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 10 or 20 years. Interestingly, in 2017 Cochlear's inventory turnover was 6.3 but decreased to 2.2 in 2018, possibly indicating a different approach to inventory management in more recent years.

Summary of liquidity analysis

Based on the four ratios examined, it appears that Cochlear has sufficient liquidity. The recent increase in cash and term deposits will allow it to take opportunities if they arise, or to survive a prolonged reduction in business.

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CSL Analysis

Using CSL's information from its *Annual Report 2019/2020*, calculate CSL's inventory turnover ratio and make an assessment about the company's liquidity compared to 2019.

Analysis: 1.20 1.31

Inventory turnover = Cost of Goods Sold/ Average Inventory = $3924 ÷ ($3509 + $3038) ÷ 2 = 1.20 (in 2019 the figure was 1.31)

CSL appears to be maintaining around eight to 10 months of average inventory levels over the past five years. In the 2020 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. One of the major legal duties of company directors is to ensure a company does not trade while insolvent.

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 when striving to increase returns

financial leverage
The degree to which a company obtains capital through debt rather than equity in an attempt to increase returns to stockholders.

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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 risk of insolvency.

A simple example will demonstrate this. If a company commences by selling one $1 share and borrowing $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 × 0.1) of revenue. Further assume its only expense is interest of 4 per cent on the money borrowed. Expenses are $3.60 ($90 × 0.04) and therefore profits are $6.40 ($10 − $3.60). This provides an excellent return on equity of 64 per cent ($6.40 ÷ $10). But what happens if the assets only earn a 1 per cent return on assets (ROA = 1%)? Revenue is $1 ($100 × 0.01) and expenses remain at $3.60, giving a loss of $2.60 ($1.00 − $3.60). While ROA is small but positive, return on equity (ROE) is negative 26 per cent (−$2.60 ÷ $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 **Exhibit 13.2** and/or **Exhibit 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 the 'risk' versus 'reward' 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

$$\text{Debt to Assets Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

Cochlear 2020: 1174 ÷ 2576 = 46%

	2020	2019
Cochlear	46%	47%
CSL	58%	57%

Cochlear's ratio of 46 per cent (or 0.46) shows less than half the assets are financed by debt. For CSL, the figure is well above half. While Cochlear's ratio has marginally decreased since 2019, CSL's has marginally increased. 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 or higher (borrow $800 000 or more to buy a $1 million home). Debt is not good or bad – debt just brings increased risk. Shareholders are paid a dividend only if a company makes a profit, but debt-holders require interest regardless of the prosperity of the business.

It is interesting to note both companies' debt ratio has fallen over the last five years (Cochlear, 53% in 2016; CSL, 66%), in a period when interest rates in Australia have decreased.

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Debt to equity ratio

debt to equity ratio
A ratio that compares total liabilities to total equity and measures a company's capital structure and financial leverage.

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. The debt to asset ratio and debt to equity are two measures of the same thing: leverage.

KEY FORMULA 13.13: SOLVENCY RATIOS: DEBT TO EQUITY RATIO

$$\text{Debt to Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}$$

Cochlear 2020: 1174 ÷ 1402 = 0.84

The 0.84 per cent indicates that for $1 of equity there is $0.84 of debt. The debt to equity ratio is simply a rearrangement of the debt to asset ratio. If assets are financed 46 per cent by debt, they must be financed 54 per cent by equity (given the balance sheet equation from Chapter 1: A = L + E). 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, we may use the times interest earned ratio.

times interest earned ratio
A ratio that compares income to interest expense and measures the ability to pay interest out of current earnings.

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' (Earnings Before Interest and Tax) and is calculated as profits plus interest plus tax (total comprehensive income or profits has already deducted interest and tax, so we add them back to get EBIT). EBIT 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 as a proportion 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

$$\text{Times Interest Earned Ratio} = \frac{\text{Total Comprehensive Income} + \text{Interest Expense} + \text{Income Tax Expense}}{\text{Interest Expense}}$$

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/profit 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, especially in the current low interest rate environment.

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 but rather 'finance costs' or similar.

If there are no earnings (no profits) then the calculation is meaningless. Therefore, we calculate this ratio only for 2019 (numbers are not rounded because such a small interest expense materially affects the result).

Cochlear 2019: (283.6 + 5.2 + 88.9) ÷ 5.2 = 73

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	2019
Cochlear	73
CSL	14

Cochlear's ratio of 73 indicates that the company earned many times more than its interest expense. Specifically, for every dollar of interest expense, the company earned almost $73 in EBIT. CSL's ratio, although lower, is still high, which is curious given its higher debt ratio.

As mentioned above, 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. After the Financial Services (Banking) Royal Commission (2017–19) banks were 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 stable, but over the longer term there has been a decrease in debt. Thus, solvency risk has decreased marginally. That said, it is important to note that this chapter is only 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 analyses we have conducted on Cochlear and CSL. Cochlear's loss in 2020 highlights the limitation of many ratios as they are often only useful when analysing profitable businesses, and COVID-19 has resulted in fewer of those.

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 achieved, investors may conduct a DuPont analysis. Because Total comprehensive income is a component, DuPont has limited value when analysing a loss-making company.

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
A method that decomposes a company's return on equity into measures of operating efficiency, asset effectiveness and capital structure.

KEY FORMULA 13.15: DUPONT ANALYSIS

$$\underbrace{\frac{\text{Total Comprehensive Income}}{\text{Sales}}}_{\text{Operating Efficiency}} = \underbrace{\frac{\text{Sales}}{\text{Assets}}}_{\text{Asset Effectiveness}} \times \underbrace{\frac{\text{Assets}}{\text{Equity}}}_{\text{Capital Structure}} = \underbrace{\frac{\text{Total Comprehensive Income}}{\text{Equity}}}_{\text{Return on Equity}}$$

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 Sydney Airport, a top 50 ASX-listed company, has extensive physical assets and an asset turnover of less than 13 per cent (2019). 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 9 per cent of assets in PPE, CSL has 35 per cent, which may be a function of the requirement for specialist PPE or a

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strategy of owning rather than renting (leasing) their facilities. Both companies have intangible assets, but, as discussed earlier, prudent accounting standards probably have the recorded value of the intellectual property far below their 'fair value'.

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 over-priced or under-priced 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.

You have made it to the end – you are now part of the wonderful world of accounting!

MINDTAP Find out what your conflict management style is with this self-assessment

MINDTAP Test your understanding with the revision quizzes for this chapter.

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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

Describe the three items required to conduct successful financial statement analysis. Why are these items needed?

2 Calculate inventory turnover ratio LO4

In 2022, Rose Rug Rats generated net sales of $795 200 and cost of goods sold of $459 900. Rose's average inventory of rugs during the year was $60 620.

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 $879 200 in 2022. Interest expense was $87 850 during the year, and income tax expense was $294 000.

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 Emma Engineering:

	2022	2021
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 Emma Engineering's assets.

b Calculate a vertical analysis of Emma Engineering's assets.

5 Horizontal and vertical analysis LO2

The statements of comprehensive income of Talia Trading for two consecutive years are as follows:

Statements of comprehensive income For the years ending 30 June		
	2024	2023
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 Talia Trading's income statements.

6 Vertical analysis LO2

The following asset information is available for Suying Sanatorium:

	2023	2022
Cash	$ 20 000	$ 10 000
Accounts receivable	30 000	25 000
Inventory	75 000	75 000
Total current assets	125 000	110 000
Property and equipment	200 000	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.

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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 2024	Actual 2023
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 a bank, you have been asked to calculate a vertical and horizontal analysis of Petrulis' actual 2023 and budgeted 2024 statements of comprehensive income. Provide comment on any unexpected results the analysis reveals and that the bank may wish to discuss with Petrulis before approving the loan.

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 Theodore Traders:

	2023	2022
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 you would classify it that way.

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's future prospects
m provides a better understanding of how the return on equity is achieved.

12 Profitability ratios LO3

The following financial information about Howard Homewares is available:

Sales	$3 600 000
Net profit	780 000
Average total assets	5 400 000
Average shareholders' equity	2 640 000

The following additional information is available:

i The contributed capital was made up of 750 000 ordinary shares. No shares were issued during the year.
ii The shares were recently trading for $30.00 per share.

REQUIRED

Calculate the following ratios:

a profit margin
b return on equity

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c return on assets
d earnings per share
e price to earnings.

13 Profitability ratios LO3

The following financial information is available about Mariana Machinery for the financial year ended 31 December:

Net profits	$ 450 000
Ordinary shares, 1 January	1200 000
Ordinary shares, 31 December	1500 000
Share (market) price at 31 December	30.00
Sales	2 835 000
Total assets, 1 January	2 400 000
Total assets, 31 December	3 000 000
Shareholders' equity, 1 January	1350 000
Shareholders' equity, 31 December	1425 000

REQUIRED

For Mariana Machinery, 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 Cook Cookers and Albert Appliances:

(in millions)	2022	2021
Total current assets		
Cook Cookers	$ 46 448	$249 664
Albert Appliances	155 117	153 188
Cash		
Cook Cookers	24 311	48 936
Albert Appliances	28 894	28 406
Accounts receivable		
Cook Cookers	8 216	186 766
Albert Appliances	114 645	114 511
Inventory		
Cook Cookers	13 921	13 962
Albert Appliances	11 578	10 271
Current liabilities		
Cook Cookers	69 036	74 457
Albert Appliances	80 220	85 037
Revenues (sales)		
Cook Cookers	207 349	194 655
Albert Appliances	160 123	176 896
Cost of goods sold		
Cook Cookers	80 153	79 411
Albert Appliances	76 740	71 561

REQUIRED

a For each company, calculate the following for 2022:
   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 $150 000 of cash and accounts receivable, $405 000 of total current assets and $300 000 of total current liabilities prior to the following transactions:

i sales on account of $30 000
ii paid cash for accounts due to suppliers, $45 000
iii received cash for accounts receivable of $45 000
iv prepaid expenses of $22 500 with cash
v purchased inventory of $60 000 on account
vi paid a $15 000 cash dividend
vii repaid short-term loans of $30 000 with cash
viii purchased short-term investments of $45 000 with cash
ix borrowed $75 000 from the bank by signing a 90-day note
x sold inventory of $90 000 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 Teddy Tyler:

	2024	2023
Total assets	$200 000	$125 000
Total liabilities	75 000	75 000
Total equity	125 000	50 000
Earnings before interest and tax	35 000	30 000
Interest expense	7 000	7 500

REQUIRED

Calculate:

a the debt to assets ratio
b the debt to equity ratio
c times interest earned for both years.

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17 Solvency ratios

LO5

The following financial information regarding Emily's Editors Pty Ltd is available:

	June 30, 2022
Total assets	$ 530 000
Total liabilities	140 000
Total shareholders' equity	390 000

Statement of comprehensive income for the year ended 30 June 2022	
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 What is the relation between the first three ratios?

c Discuss the solvency of Emily Editors. Does the company rely more on equity or debt to finance its operations?

d If debt were to double, what might be the positives and negatives as a consequence of this doubling?

18 DuPont analysis

LO6

The following financial information about Lewis Limited is available:

	2022
Total average assets	$800 000
Total average equity	500 000
Sales	140 000
Net profits	28 000

REQUIRED

Prepare a DuPont analysis for Lewis.

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? (You may like to refer to AASB 138 ***Intangible Assets***, especially paragraph 51 – just Google it.)

PROBLEMS

20 Analysing financial statements

LO2, 3, 4, 5

The following financial information is available for Porch Posers at 30 June:

Comparative balance sheets		
	2023	2022
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 2023 was $11.00.

2023 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

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REQUIRED

a Calculate all profitability, liquidity and solvency ratios.
b Comment on Porch Poser's overall profitability, liquidity and solvency.
c Do you think the share price is too high or too low, or would you rather not comment? How did you come to this conclusion?

21 Analysing financial statements

LO2, 3, 4, 5

Lara Limited has applied for a loan from a local bank. The bank is basing its decision on the following information:

Ratio	Industry average
Current ratio	1.9
Quick ratio	0.8
Receivable turnover ratio	8
Inventory turnover ratio	12
Debt to assets ratio	0.65
Times interest earned	4.5
Profit margin	8.2%
Return on assets	10.5%
Return on equity	15.3%

Lara Limited Statement of comprehensive income For the year ended 30 June 2023	
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

Lara Limited Statement of financial position		
	30 June 2023	30 June 2022
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 Lara Limited, 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 Lara'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 Lara'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 Celine Conglomerate, a large company whose sole activity is the acquisition of other businesses. Your manager has just come to you with the following financial statements for Adams Baking Company (ABC), a food manufacturing business based in Berowra, 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 sheets at 31 December for ABC		
	2022	2021
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

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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 31 December 2022	
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

CASES

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 (or companies') 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 (or companies).

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

Sarah's School currently has a line of credit with Murray River Bank. The interest rate on the line of credit increases from 3.25 per cent to 6.5 per cent if the following terms of the credit agreement are not met:

i Sarah's School current ratio must remain above 1.2 at all times

ii Sarah's School times interest earned must be 3.0 or greater at all times.

The following preliminary financial information has been prepared by the accountants of Sarah's School. All figures in millions:

Current assets	$300
Current liabilities	225
Income before interest and taxes	75
Interest expense	21

Your senior accounting manager calls to your attention that the $300 million of current assets include $30 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 $15 million of the current revenue is attributed to a service contract for which Sarah has received payment but has not yet performed the services. There is no reason the contract will not be fulfilled.

REQUIRED

a Based on the financial information presented above, is Sarah 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 Sarah 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).

	This Year	Last Year	Two Years Ago
Horizontal analysis of sales	37.0%	22.0%	15.0%
Horizontal analysis of profit margin	8.2%	7.5%	6.8%
Horizontal analysis of return on equity	13.1%	12.3%	11.1%

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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 200-word press release highlighting the strong performance of the company over the last three years. Selectively use the analysis above to support your positive conclusions of a likely strong performance in the coming year.

b SMS your CFO expressing concern about the press release you have written. Point out there are negatives in the analysis that would indicate the company's financial future may not be all positive, especially given predictions of rising interest rates.

c Draft your resignation letter, stating why you are unable to continue.

Download the Enrichment Modules for further practice

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APPENDIX A
CSL LIMITED, ANNUAL REPORT 2019/2020

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Contents

1	**Chairman and CEO Message**	**2**
2	**2020 Performance**	**6**
	Business performance and highlights	6
	Financial highlights	7
3	**Our Company**	**8**
	CSL at a glance	8
	Our businesses	8
	Our locations	9
	Our product portfolio	10
	Our research and development pipeline	10
4	**Strategy and Performance**	**12**
	Our 2030 strategy	12
	How we create value	14
	United Nations sustainable development goals	16
	Our financial review	16
	Our operating review	16
	Business strategies, prospects and likely developments	17
5	**Our Material Risks**	**18**
	Patient safety and product quality	18
	Product innovation and competition	18
	Supply, capacity and operations	18
	Market access	18
	People and culture	19
	Privacy and cybersecurity	19
6	**Outlook**	**20**
7	**Powered by Innovation**	**21**
	Expanding our R&D footprint	21
	Investment in our R&D pipeline	21
	Strategic support for innovative medical research	24
	Our drug delivery platforms	25
	Influenza vaccine technologies	26
	Addressing the global COVID-19 crisis	27
	New products to market	28
	Clinical trials in process and new	30
	Innovation across the value chain	31
8	**Global Reach and Impact**	**32**
	Global reach and focus	32
	Donor management	32
	Focus on efficiency, standardised manufacturing processes and integrated supply chain	33
	Secure and reliable supply	33
	Environment, health and safety	34
9	**A Trusted Health Partner**	**37**
	Product quality and safety	37
	Value and access	38
	Public policy engagement	38
	Influenza pandemic and emergency response	40
	Relationships with patient groups	40
	Responsible marketing and promotion	40
	Our expanding footprint	41
	Ethical conduct	42
10	**Promising Futures**	**44**
	Diversity	44
	Attraction and retention	45
	Training and development	46
	Our employee-centric approach to COVID-19	46
	Employee engagement	46
	Safety and wellbeing	47
11	**Our Communities**	**48**
	Our approach	48
	Support for patient communities	49
	Support for biomedical communities	50
	Support for local communities	52
12	**Governance**	**54**
	Governance structure	54
	Board composition	54
	Board of Directors	55
	Board committees	58
	Leadership team	58
	Ethics and transparency	60
	Disclosure	60
	Corporate governance	60
	Risk management	60
	Tax transparency	60
13	**Financial Performance**	**61**
	Directors' Report	62
	Auditor's Independence Declaration	67
	Consolidated Statement of Comprehensive Income	96
	Consolidated Balance Sheet	97
	Consolidated Statement of Changes in Equity	98
	Consolidated Statement of Cash Flows	99
	Notes to the Financial Statements	100
	Directors' Declaration	138
	Independent Auditor's Report	139
14	**Share Information**	**146**
15	**Medical Glossary**	**148**
16	**Key Performance Data Summary**	**150**

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1 Chairman and CEO Message

US$2,103
million in reported net profit after tax.

US$2.02
dividend per share for 2020.

Dear Stakeholders,

In writing this message we have had the opportunity to reflect on the sobering and far-reaching impact that the COVID-19 pandemic has had on our global community.

While the pandemic has certainly added complexity to our business and operating environment, CSL has had a number of notable achievements throughout the year, including the Company's 25th anniversary as a listed company on the Australian Securities Exchange. We are pleased to share some of those success stories in this report.

Business Highlights

CSL has continued to deliver value to shareholders because of our unwavering focus on delivering innovative products to people with rare and serious disease, and to protecting the health of the public with our influenza vaccines portfolio.

This year we made a series of investments designed to strengthen the next-generation therapeutic areas within our portfolio. We exercised an option to fully acquire biotechnology company Vitaeris, specifically its late-stage monoclonal antibody therapy to address long-term rejection in kidney transplants. Additionally, subject to receiving regulatory approval we acquired the exclusive global license rights to commercialise a Phase 3 stage program adeno-associated virus (AAV) gene therapy program for the treatment of haemophilia B from uniQure, an asset that if successful will prove transformational for patients suffering this disease. Expanding our stem cell gene therapy portfolio, we established an alliance with Seattle Children's Research Institute to develop stem cell gene therapies for primary immunodeficiency diseases.

We also entered into a long-term strategic partnership with Thermo Fisher Scientific for the lease of our state-of-the-art biotech manufacturing facility currently under construction in Lengnau, Switzerland. When construction is complete, Thermo Fisher will lease and operate the Lengnau facility and provide production support for CSL's biologics portfolio. This decision was made following a strategic review and will allow us to access capabilities from an experienced partner and leverage our own internal investments.

While some clinical trial stage programs in our research portfolio have been slowed due to COVID-19, our Phase 3 program investigating CSL112 for reduction of recurrent cardiovascular events is progressing well. Over 9,500 patients are now recruited and the results of a futility analysis have provided us the confidence to continue as planned.

As we've seen with the recent registration of Flucelvax in Europe, Seqirus continues to go from strength to strength as its differentiated product portfolio gains a strong reputation in global markets.

Our relationships with the biomedical community have always been critical to the way we approach our innovation portfolio. In planning for future growth, we made the decision to build a bespoke facility to house our Company's Australian headquarters and expand our R&D footprint with a new 16-storey building in the heart of Melbourne's biomedical precinct. It will accommodate 800 employees from 2024. The move ensures we are well placed to strengthen our partnerships and deepen the valuable relationships we have with the local biomedical community. The move will also bring key elements of our Australian operations together, fostering stronger internal collaboration.

With our robust research and development (R&D) pipeline, Commercial and Operations excellence, passionate people and global reputation as a leading biotechnology company, we have delivered a strong result for the year. It reflects the focused execution of our strategy, robust demand for our differentiated medicines and our commitment for meeting the needs of people who rely on our therapies.

We are pleased to deliver a record dividend to shareholders of US$2.02 per share for 2020.

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Our response to COVID-19

Our Efforts	• Playing a leading role in the launch of the CoVIg-19 Plasma Alliance, an unprecedented industry partnership to develop a potential plasma-derived hyperimmune therapy for treating COVID-19. The Alliance also supports national governments in their efforts to fight the pandemic. • Pursing the development of an anti-SARS-CoV-2 plasma product for the Australian market with the potential to treat people with serious complications of COVID-19. • Partnering with the Coalition for Epidemic Preparedness Innovations (CEPI) and the University of Queensland to accelerate the development, manufacture and distribution of a COVID-19 vaccine candidate which uses Seqirus' well-established MF59® adjuvant technology. • Collaborating with SAB Biotherapeutics, a clinical-stage biopharmaceutical company, to manufacture a novel immunotherapy targeting COVID-19. The potential therapy would be produced without the need for blood plasma donations from recovered COVID-19 patients. • Engaging with investigators regarding the company's monoclonal antibodies, including CSL312 and CSL324, to identify treatment candidates from the portfolio that have the potential to treat diffuse alveolar damage – one of the devastating respiratory consequences of COVID-19. • Provisioning Seqirus MF59 adjuvant technology to multiple preclinical projects.
Our People	• Strongly encouraging employees who are able to work from home to do so in accordance with guidance from national and local authorities. • Implementing enhanced measures, including vigorous cleaning efforts and increased social distancing to protect employees at our manufacturing sites, plasma centres and other essential locations. • Offering employees at essential sites flexible Caregiver Leave of Absence and Caregiver Allowance plans to provide support for balancing work with homeschooling and other caregiving responsibilities. • Providing employees at essential sites with all of the PPE needed to perform their job safely and effectively. • Restricting travel to essential trips only to protect employees and prevent the potential spread of COVID-19.
Our Patients and Products	• Committing to keep plasma centres and manufacturing sites open during the pandemic to maintain supply of lifesaving medicines and influenza vaccines. • Maintaining constant communication with patient advocacy groups to provide updates on the continued safety and availability of our plasma-derived products for those living with rare and serious conditions. See page 38 for more on how CSL's manufacturing processes handle COVID-19. • Providing essential information for patients in the areas we treat on how COVID-19 may specifically affect them through the *Vita* news hub of CSLBehring.com. • Continuing much of our work on clinical trials for new potential products and therapies despite a pause in new enrolments at some sites. • Working with our public health partners to plan for the forthcoming influenza season, meeting increased demand for influenza vaccines around the world, to help reduce the burden of influenza on precious health care systems.
Our Donors	• CSL Plasma implemented a COVID-19 Infectious Disease Response Plan in combination with the CDC's Exposure Control Plan. The plan includes ensuring the safety of our donors and employees by instituting social distancing, providing masks for donors and enhanced personal protective equipment (PPE) for employees at all plasma centres. • Working closely with local and national authorities to ensure that plasma centres remain open as an essential service during lockdown measures. • Launching a comprehensive communications campaign to raise awareness of the opportunity and need for plasma donation. • Providing donors with an opportunity to give back to their communities through the #CSLPlasmaChallenge. The social media campaign raised money for local healthcare workers, including those on the frontlines of the COVID-19 response.

More on CSL.com (Investors > Financial Results and Information)

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Financial highlights

Interim unfranked dividend of
US$0.95
per share

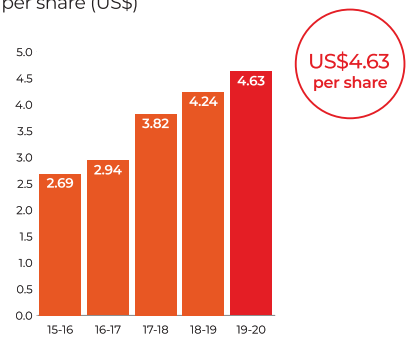
+

Final unfranked dividend of
US$1.07
per share*

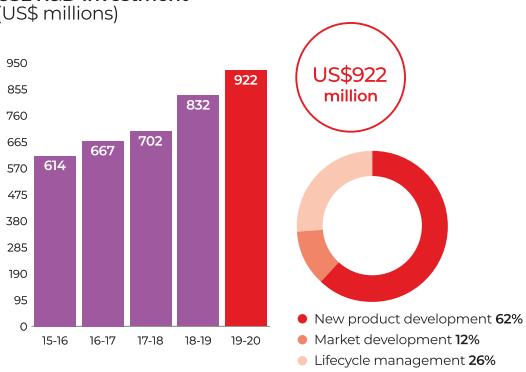
=

Total ordinary dividends for 2020
US$2.02
per share

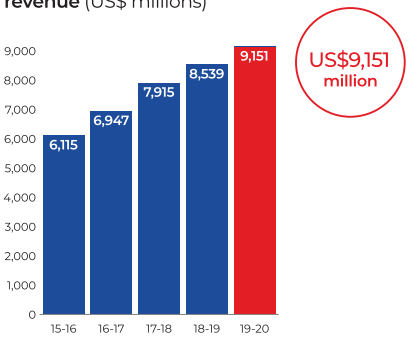
CSL Earnings
per share (US$)



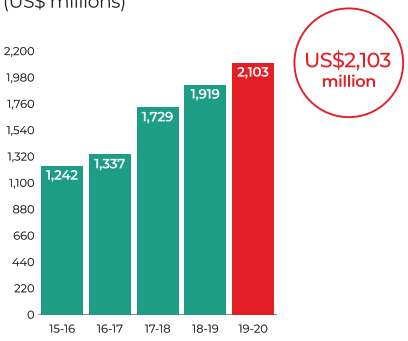
CSL R&D Investment
(US$ millions)



CSL Total operating revenue (US$ millions)



CSL Net profit
(US$ millions)



* For shareholders with an Australian registered address, the final dividend of US$1.07 per share (approximately A$1.48) will be unfranked for Australian tax purposes and paid on 9 October 2020. For shareholders with a New Zealand registered address, the final dividend of US$1.07 per share (approximately NZ$1.63) will be paid on 9 October 2020. The exchange rates will be fixed at the record date of 11 September 2020. All other shareholders will be paid in US$. CSL also offers shareholders the opportunity to receive dividend payments in US$ by direct credit to a US bank account.

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12 Governance

Ethics and transparency

While our Values serve as the directional compass of our work, our Code of Responsible Business Practice (Code) provides a more detailed map to deliver on our promise in ways that exemplify the highest standards of conduct throughout the organisation. This applies in all areas, from our R&D facilities to our plasma centres to our manufacturing sites to our commercial affiliates

CSL's Code fosters a culture that rewards high ethical standards, personal and corporate integrity and respect for others.

In 2019/20, in line with our standard practice of ensuring CSL policies remain current, we commenced a review of the Code. The review included an independent assessment against Australian Standard – AS8002 Organisational Codes of Conduct and expert insights into current code of ethics good practice. CSL will publish the fourth edition of our Code in July 2021.

Each of our employees is responsible for complying with the applicable local laws of the countries in which we operate.

In certain aspects of our business, such as the marketing of our products, our relationships with other healthcare professionals and our research and development, we have made further commitments to comply with both local and internationally accepted pharmaceutical industry codes of conduct.

We expect third parties with which we work to comply with the applicable local laws and regulations of the countries in which they operate, and to observe all of the principles set out in our Code.

We have internal control systems to ensure financial statements comply with the applicable local laws of the countries in which we operate and to prevent fraud and other improper conduct.

Disclosure

As a publicly listed company on the Australian Securities Exchange (ASX), CSL has obligations under Australian law and the ASX Listing Rules. Subject to limited exceptions, we must continuously disclose to the ASX information about CSL that a reasonable person would expect to have a material effect on the price or value of CSL securities.

We have a policy that sets clear guidelines and describes the actions that the directors and all employees should take when they become aware of information that may require disclosure.

Corporate governance

Throughout 2019/20, CSL's governance arrangements were consistent with the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations (3rd edition). Our 2019/20 Corporate Governance Statement has been approved by the Board and is available on CSL.com (Our Company > Corporate Governance).

The Board continually reviews governance at CSL to ensure that our arrangements remain appropriate in light of changing expectations and general developments in good corporate governance. CSL is pleased to report that its governance arrangements as outlined in the Corporate Governance Statement already address a number of the new issues raised in the fourth edition of the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations which will come into effect for CSL in 2020/21.

Risk management

CSL has adopted and follows a detailed and structured Risk Framework to ensure that risks in the CSL Group are identified, evaluated, monitored and managed. This Risk Framework sets out the risk management processes and internal compliance and control systems, the roles and responsibilities for different levels of management, the matrix of risk impact and likelihood for assessing risk, and risk management reporting requirements.

The risk management processes and internal compliance and control systems are made up of various CSL policies, processes, practices and procedures, which have been established by management and/or the Board to provide reasonable assurance that:

- established corporate and business strategies are implemented, and objectives are achieved;
- any material exposure to risk is identified and adequately monitored and managed;
- significant financial, managerial and operating information is accurate, relevant, timely and reliable; and
- there is an adequate level of compliance with policies, standards, procedures and applicable laws and regulations.

Further details of CSL's risk management framework are contained in CSL's Corporate Governance Statement.

A description of CSL's material risks and key risk management activities for each risk can be found in Our Material Risks.

Tax transparency

While CSL's roots are proudly Australian, CSL is a truly global company, with more than 90% of our revenues and profits derived outside Australia. We separately report on our global tax footprint, as part of our tax transparency reporting.

We are subject to the different tax regimes that apply in each of those countries and comply with applicable taxation laws in all the jurisdictions in which we operate.

CSL's approach to tax is underpinned by our Value of Integrity. This is consistent with our commitment to complying with all tax laws in the countries in which we operate. CSL has a low tax risk appetite and does not engage in aggressive tax planning.

CSL supports efforts to promote prevention of tax avoidance and tax transparency in order to support a fairer economy and ensure there is confidence in the robustness of country tax regimes.

Operating with transparency forms a core part of CSL's tax management philosophy and as such our annual tax transparency reports can be found on CSL.com (Our Company > Corporate Responsibility).

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Consolidated Statement of Comprehensive Income

For the Year Ended 30 June 2020

	Notes	Consolidated Entity 2020 US$m	2019 US$m
Continuing operations			
Sales and service revenue		**8,796.6**	8,205.4
Influenza Pandemic Facility Reservation fees		**145.4**	133.4
Royalties and License revenue		**158.5**	171.1
Other Income		**50.3**	28.7
Total Operating Revenue		**9,150.8**	8,538.6
Cost of sales		**(3,924.4)**	(3,761.2)
Gross profit		**5,226.4**	4,777.4
Research and development expenses	6	**(921.8)**	(831.8)
Selling and marketing expenses		**(896.2)**	(866.8)
General and administration expenses		**(691.8)**	(574.8)
Operating profit		**2,716.5**	2,504.0
Finance costs	2	**(150.8)**	(176.7)
Finance income		**7.0**	13.8
Profit before income tax expense		**2,572.7**	2,341.1
Income tax expense	3	**(470.2)**	(422.4)
Net profit for the period		**2,102.5**	1,918.7
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	**13.3**	(34.8)
Items that will not be reclassified subsequently to profit or loss			
Actuarial (losses)/gains on defined benefit plans, net of tax	19	**(13.6)**	(67.1)
Total of other comprehensive income/(loss)		**(0.3)**	(101.9)
Total comprehensive income for the period		**2,102.2**	1,816.8
Earnings per share (based on net profit for the period)		**US$**	US$
Basic earnings per share	10	**4.633**	4.236
Diluted earnings per share	10	**4.615**	4.226

The consolidated statement of comprehensive income should be read in conjunction with the accompanying notes.

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Consolidated Balance Sheet

As at 30 June 2020

	Notes	Consolidated Entity 2020 US$m	2019 US$m
CURRENT ASSETS			
Cash and cash equivalents	14	**1,194.4**	657.8
Receivables and contract assets	15	**1,703.9**	1,821.7
Inventories	4	**3,509.5**	3,038.8
Current tax assets		**35.1**	21.4
Other financial assets		**3.3**	0.4
Total Current Assets		**6,446.2**	5,540.1
NON-CURRENT ASSETS			
Property, plant and equipment	8	**5,366.0**	4,484.3
Intangible assets	7	**2,140.2**	1,878.3
Right-of-use assets	8	**939.4**	–
Deferred tax assets	3	**543.0**	378.7
Other receivables	15	**14.3**	21.6
Other financial assets		**14.2**	9.9
Retirement benefit assets	18	**1.4**	1.5
Total Non-Current Assets		**9,018.5**	6,774.3
TOTAL ASSETS		**15,464.7**	12,314.4
CURRENT LIABILITIES			
Trade and other payables	15	**1,525.4**	1,407.7
Interest-bearing liabilities and borrowings	11	**202.3**	420.6
Current tax liabilities		**253.7**	162.2
Provisions	16	**156.9**	194.9
Deferred government grants	9	**3.2**	2.8
Total Current Liabilities		**2,141.5**	2,188.2
NON-CURRENT LIABILITIES			
Interest-bearing liabilities and borrowings	11	**5,790.5**	4,242.2
Retirement benefit liabilities	18	**347.5**	307.0
Deferred tax liabilities	3	**352.0**	168.7
Provisions	16	**41.7**	35.9
Deferred government grants	9	**40.1**	34.6
Other non-current liabilities	15	**223.8**	86.5
Total Non-Current Liabilities		**6,795.6**	4,874.9
TOTAL LIABILITIES		**8,937.1**	7,063.1
NET ASSETS		**6,527.6**	5,251.3
EQUITY			
Contributed equity	12	**(4,561.0)**	(4,603.0)
Reserves	12	**336.3**	242.0
Retained earnings	19	**10,752.3**	9,612.3
TOTAL EQUITY		**6,527.6**	5,251.3

The consolidated balance sheet should be read in conjunction with the accompanying notes.

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Consolidated Statement of Changes in Equity

For the Year Ended 30 June 2020

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	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
As at the beginning of the year	**(4,603.0)**	(4,634.5)	**(5.7)**	29.1	**247.7**	195.1	**9,612.3**	8,490.2	**5,251.3**	4,079.9
Profit for the period	**–**	–	**–**	–	**–**	–	**2,102.5**	1,918.7	**2,102.5**	1,918.7
Other comprehensive income	**–**	–	**13.3**	(34.8)	**–**	–	**(13.6)**	(67.1)	**(0.3)**	(101.9)
Total comprehensive income for the full year									**2,102.2**	1,816.8
Transactions with owners in their capacity as owners										
Opening balance sheet adjustment adopting AASB 16 and 15 (See Accounting Policies disclosure)	**–**	–	**–**	–	**–**	–	**(65.0)**	74.0	**(65.0)**	74.0
Share based payments	**–**	–	**–**	–	**81.0**	52.6	**–**	–	**81.0**	52.6
Dividends	**–**	–	**–**	–	**–**	–	**(883.1)**	(806.8)	**(883.1)**	(806.8)
Share issues										
– Employee share scheme	**42.0**	31.5	**–**	–	**–**	–		–	**42.0**	31.5
Other	**–**	–	**–**	–	**–**	–	**(0.8)**	3.3	**(0.8)**	3.3
As at the end of the year	**(4,561.0)**	(4,603.0)	**7.6**	(5.7)	**328.7**	247.7	**10,752.3**	9,612.3	**6,527.6**	5,251.3

The consolidated statement of changes in equity should be read in conjunction with the accompanying notes.

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Consolidated Statement of Cash Flows

For the Year Ended 30 June 2020

The format of the consolidated statement of cash flows was changed to the indirect method of presentation for the cash flows from operating activities. The prior comparative period was changed to align to the new format, which is informative in showing the impact of changes in the balance sheet on cash flows.

	Notes	Consolidated Entity 2020 US$m	2019 US$m
Cash Flows from Operating Activities			
Profit before income tax expense		**2,572.7**	2,341.1
Adjustments for:			
Depreciation and amortisation		**419.8**	375.5
Inventory provisions		**189.5**	191.3
Share-based payments expense		**81.0**	52.0
Bad debt provision		**10.1**	(3.5)
Finance costs		**142.4**	127.8
Loss (gain) on disposal of property, plant and equipment		**0.5**	(0.8)
Changes in operating assets and liabilities:			
Decrease/(increase) in trade and other receivables		**124.9**	(367.1)
Increase in inventories		**(686.0)**	(558.3)
Increase in trade and other payables		**157.8**	136.2
(Decrease)/increase in provisions and other		**(27.0)**	18.6
Income tax paid		**(355.0)**	(527.7)
Finance costs paid		**(142.4)**	(140.7)
Net cash inflow from operating activities		**2,488.3**	1,644.4
Cash flows from Investing Activities			
Payments for property, plant and equipment		**(1,206.8)**	(1,117.6)
Payments for intangible assets		**(160.8)**	(167.2)
Payment for business acquisition (Net of cash acquired)		**(17.8)**	–
Receipts/(payments) from other investing activities		**18.7**	(2.5)
Net cash outflow from investing activities		**(1,366.7)**	(1,287.3)
Cash flows from Financing Activities			
Proceeds from issue of shares		**42.0**	31.8
Dividends paid	10	**(883.1)**	(806.8)
Proceeds from borrowings	11	**1,652.7**	898.5
Repayment of borrowings	11	**(1,399.2)**	(610.2)
Principal payments of AASB 16 lease liabilities		**(54.7)**	–
Other financing activities		**(0.4)**	(4.8)
Net cash (outflow)/inflow from financing activities		**(642.7)**	(491.5)
Net (decrease)/increase in cash and cash equivalents		**478.9**	(134.4)
Cash and cash equivalents at the beginning of the financial year		**657.8**	812.7
Exchange rate variations on foreign cash and cash equivalent balances		**14.6**	(20.5)
Cash and cash equivalents at the end of the period		**1,151.3**	**657.8**
Reconciliation of cash and cash equivalents			
Cash and cash equivalents at the end of the period as shown in the statement of cash flows is reconciled as follows:			
Cash and cash equivalents		**1,194.4**	657.8
Bank overdrafts		**(43.1)**	–
Cash and cash equivalents at the end of the period		**1,151.3**	657.8

The consolidated statement of cash flows should be read in conjunction with the accompanying notes.

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Notes to the Financial Statements

For the Year Ended 30 June 2020

Contents

About this Report	**100**
Notes to the financial statements:	100
Our Current Performance	**104**
Note 1: Segment Information and Business Combinations	104
Note 1b: Business Combination	105
Vitaeris acquisition	105
Note 2: Revenue and Expenses	106
Note 3: Tax	107
Note 4: Inventories	109
Note 5: People Costs	110
Our Future	**114**
Note 6: Research & Development	114
Note 7: Intangible Assets	114
Note 8: Property, Plant and Equipment	116
Note 9: Deferred Government Grants	117
Returns, Risk & Capital Management	**118**
Note 10: Shareholder Returns	118
Note 11: Financial Risk Management	119
Note 12: Equity and Reserves	124
Note 13: Commitments and Contingencies	125
Efficiency of Operation	**126**
Note 14: Cash and Cash Equivalents	126
Note 15: Trade Receivables and Payables	126
Note 16: Provisions	128
Other Notes	**129**
Note 17: Related Party Transactions	129
Note 18: Detailed Information – People Costs	130
Note 19: Detailed Information – Shareholder Returns	134
Note 20: Auditor Remuneration	134
Note 21: Deed of Cross Guarantee	135
Note 22: Parent Entity Information	137
Note 23: Subsequent Events	137
Note 24: New and Revised Accounting Standards	137

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 18 August 2020.

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, which have been measured at fair value. Amounts have been rounded off to the nearest hundred thousand dollars.

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 2020. 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.

The financial results 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 US 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.

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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, a number of judgements and estimates of future events are required. Material judgements and estimates are found in the following notes:

Note g:	AASB 16 Leases	Page 101
Note 2:	Revenue and Expenses	Page 106
Note 3:	Tax	Page 107
Note 4:	Inventories	Page 109
Note 5:	People Costs	Page 110
Note 7:	Intangible Assets	Page 114
Note 15:	Trade Receivables & Payables	Page 126
Note 16:	Provisions	Page 128

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

The consolidated financial statements have been prepared using the same accounting policies as used in the annual financial statements for the year ended 30 June 2019, except for the adoption of AASB 16 Leases and AASB Interpretation 23 Uncertainty over Income Tax Treatments.

AASB Interpretation 23 clarifies the application of recognition and measurement requirements of AASB 112 Income Taxes where there is uncertainty over income tax treatments. The adoption of this interpretation did not result in any material change to the financial statements of the group.

AASB 16 supersedes AASB 117 Leases and related interpretations. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for most leases under a single on-balance sheet model.

The Group adopted AASB16 using the modified retrospective method of adoption with the date of initial application of July 1, 2019. The Group elected to use the transition practical expedient approach allowing the following:

- Standard to be applied only to contracts that were previously identified as leases applying AASB 117 and AASB Interpretation 4 at the date of initial application;
- Recognition exemptions for lease contracts that, at initial application date, have a remaining lease term of 12 months or less;
- Recognition exemptions for lease contracts for which the underlying asset is of low value;
- Apply a single discount rate to a portfolio of leases with reasonable similar characteristics;
- Use of hindsight, such as in determining the lease term if the contract contains options to extend or terminate the lease; and
- Exclude initial direct costs from the measurement of the right-of-use asset at the date of initial application

The effect of adopting AASB 16 is as follows:

Impact on the balance sheet (increase/(decrease)) as at 1 July 2019	US$m
Assets	
Right-of-use assets	926
Finance lease assets	(11)
Total assets	**915**
Liabilities	
Interest-bearing liabilities	1,004
Finance lease liabilities	(11)
Asset retirement obligations	25
Trade and other payables	(29)
Deferred tax liabilities	(9)
Total liabilities	**980**
Equity	
Retained earnings	(65)

The Group has lease contracts for various items of plant, land and vehicles. Before the adoption of AASB 16, the Group classified each of its leases (as lessee) at the inception date as either a finance lease or an operating lease. A lease was classified as a finance lease if it transferred substantially all of the risks and rewards incidental to ownership of the leased asset to the Group; otherwise it was classified as an operating lease. Finance leases were capitalised at the commencement of the lease at the inception date fair value of the leased property or, if lower, at the present value of the minimum lease payments. Lease payments were apportioned between interest (recognised as finance costs) and reduction of the lease liability. In an operating lease, the leased property was not capitalised and the lease payments were recognised as rent expense in the statement of income on a straight-line basis over the lease term. Any accrued rent was recognised under Trade and other payables.

Upon adoption of AASB 16, the Group applied a single recognition and measurement approach for all leases that it is the lessee, except for short-term leases and leases of low-value assets. The Group recognised lease liabilities to make lease payments and right-of-use assets representing the right to use the underlying assets. In accordance with the modified retrospective method of adoption, the Group applied AASB 16 at the date of initial application as though effective at the commencement date of existing lease contracts. The comparative information in the consolidated financial statements has not been restated.

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As at 1 July 2019:

- Right-of-use assets of $926m were recognised and presented separately in the balance sheet. The right-of-use-asset at the time of adoption was the carrying amount as if the Standard had been applied since the commencement date, discounted using the Group's incremental borrowing rate at the date of initial application.
- Lease liabilities of $1,004m were recognised based on the present value of the remaining lease payments, discounted using the incremental borrowing rate at the date of initial application and included under interest bearing liabilities.
- Trade and other payables of $29m related to previous operating leases were derecognised.
- Deferred tax liabilities decreased by $9m because of the deferred tax impact of the changes in assets and liabilities.
- Finance lease assets and liabilities of $11m were removed and included in right-of-use assets and liabilities.
- Asset retirement obligations of $25m were recorded.
- The net effect of these adjustments had been adjusted to Retained earnings ($65m).

The lease liabilities as at 1 July 2019 can reconciled to the operating lease commitments as of 30 June 2019 as follows:

Operating Lease Commitments Reconciliation	US$m
Operating lease commitments as at 30 June 2019	**735**
Weighted Average Incremental Borrowing Rate	2.52%
Discounted Operating Lease Commitments as at 1 July 2019	**669**
Add:	
Commitments relating to leases previously classified as finance leases	11
Payments in optional extension periods not recognised as at 30 June 2019	324
Lease Liabilities as at 1 July 2019	**1,004**

For the year ended 30 June 2020 included in the statement of income is depreciation of right-of-use assets of $70.9m and interest expense of $26.0m. Expense for these leases would have been recorded under rent expense prior to the adoption of AASB 16.

After adoption of AASB 16, the Group's cash flows from operating activities include only payments for the interest portion of lease payments (included in borrowing costs paid) and cash flows from financing include repayment of the principal portion of the lease liabilities.

Below are the new accounting policies of the Group upon adoption of AASB 16:

Right-of-use assets

The Group recognises right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any restoration obligations, accumulated depreciation, or impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognised less any lease incentives received and initial direct costs. Unless the Group is reasonably certain to obtain ownership of the underlying asset at the end of the lease term, the recognised right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of-use assets are subject to annual impairment assessment as discussed in Note 8 – PPE (Property, Plant & Equipment). Based on each lease category, the following table summarises the range of useful lives (i.e. lease terms) for AASB 16 Leases:

ROU assets useful lives	Plasma Centres	Office Leases	Warehouse Leases	Land Leases	Vehicles
	Years	Years	Years	Years	Years
Minimum	3	<1	1	4	3
Maximum	40	30	35	101	4
Average	25	8	13	60	3.5

Lease liabilities

At the commencement date of the lease, the Group recognises lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating a lease, if the lease term reflects the Group exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognised as an expense in the period in which the event or condition that triggers the payment occurs.

In calculating the present value of lease payments, the Group uses the incremental borrowing rate of the lessee at the lease commencement date if the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, such as a change in the lease term, a change in the in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

The following table summarises the maturity profile of the Group's lease liabilities based upon contractual undiscounted payments:

Repayable in	Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years	Total
	US$m	US$m	US$m	US$m	US$m	US$m	US$m
As at 30 June 2020	91.0	88.8	84.6	82.1	76.2	891.0	1,313.7

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Note 2: Revenue and Expenses

Recognition and measurement of revenue

Revenue is recognised when the Group satisfies a performance obligation by transferring control of the promised good or service to a customer at an amount that reflects the consideration to which an entity expects to be entitled in exchange for the goods or services.

Further information about each source of revenue from contracts with customers and the criteria for recognition follows.

Sales: Revenue is earned (constrained by variable considerations, which include returns, discounts, rebates and allowances) from the sale of products and services. Sales are recognised when performance obligations are either satisfied over time or at a point in time. Generally the supply of product under a contract with a customer will represent the satisfaction of a performance obligation at a point in time, which is when control of the product passes to the customer, or generally upon shipment.

Significant estimates on Seqirus sales returns is performed in respect of the influenza season expected to be subject to return. The estimate is performed with inputs including historical returns and customer sales data amongst other factors.

For contracts where the customer controls the plasma (tolling contracts) and the Group provides fractionation services – the Group recognises revenue over time as the performance obligations are satisfied based upon a percentage of completion of our fractionation services.

Royalties: Revenue from licensees of CSL intellectual property reflect a right to use the intellectual property as it exists at the point in time in which the licence is granted. Where consideration is based on sales of product by the licensee, it is recognised when the customer's subsequent sales of product occurs.

Licence revenue: Revenue from licensees of CSL intellectual property reflects the transfer of a right to use the intellectual property as it exists at the point in time in which the licence is transferred to the customer. Consideration is highly variable and estimated using the most likely amount method. Subsequently, the estimate is constrained until it is highly probable that a significant revenue reversal will not occur when the uncertainty is resolved. Revenue is recognised as or when the performance obligations are satisfied.

Influenza Pandemic facility reservation fees: Revenue from governments in return for access to influenza manufacturing facilities in the event of a pandemic. Contracts are time based and revenue is recognised progressively over the life of the relevant contract, which aligns to the performance obligations being satisfied.

Revenue from contracts with customers includes amounts in Total Operating Revenue except Other Income.

Expenses	2020 US$m	2019 US$m
Finance costs	**142.4**	127.8
Unrealised foreign currency (gains) losses on debt	**8.4**	48.9
Total finance costs	**150.8**	176.7
Depreciation and amortisation of fixed assets	**347.3**	273.1
Amortisation of intangibles	**72.5**	102.3
Total depreciation and amortisation expense	**419.8**	375.4
Write-down of inventory to net realisable value	**189.5**	191.3
Employee benefits expense	**2,528.1**	2,184.2

Recognition and measurement of expenses

Total finance costs: Includes interest expense & borrowing costs, including interest expense related to the adoption of AASB 16, which have been disclosed separately in section g of our significant accounting policies. Non-AASB 16 related interest expense and borrowing costs are recognised as an expense when incurred, except where finance costs are directly attributable to the acquisition or construction of a qualifying asset where they are capitalised as part of the cost of the asset. Capitalised interest for qualifying assets during the year ended 30 June 2020 was $15.8m (2019: $16.4m). 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 borrowing period using the effective interest method. Unrealised foreign currency gains on debt is related to the EUR350m and CHF400m of Senior Unsecured Notes in the US Private Placement market (see Note 11). The foreign currency risk related to this debt was partially hedged as a cash flow hedge in 2020 and 2019.

Depreciation and amortisation: Depreciation and amortisation of fixed assets includes depreciation of fixed assets and right-of-use assets, which can be found in Note 8 and in section g of our significant accounting policies. Refer to Note 7 for full details on amortisation of intangible assets.

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.

Rental Expenses: The majority of rental expenses related to previously categorised operating leases are now reflected as depreciation expense under AASB 16, which we have disclosed separately in section g of our significant accounting policies. Therefore, rental expenses primarily include rental charges that did not meet the recognition criteria under AASB 16 and are charged to the statement of comprehensive income on a straight-line basis over the period of the rental period.

Employee benefits expense: Refer to Note 5 for further details.

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.

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Note 4: Inventories

	2020 US$m	2019 US$m
Raw materials	**876.8**	915.2
Work in progress	**1,361.1**	1,049.2
Finished products	**1,271.6**	1,074.4
Total inventories	**3,509.5**	3,038.8

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 – Inventory

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.

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Our Future

Note 6: Research & Development

The Group conducts research and development activities to support future development of products to serve our patient communities, to enhance our existing products and to develop new therapies.

All costs associated with our research and development activities are expensed as incurred as uncertainty exists up until the point of regulatory approval as to whether a research and development project will be successful. At the point of approval, the total cost of development has largely been incurred. Development costs incurred after regulatory approval are expensed.

The Group also gains control of Intellectual Property (IP) through acquisitions or licence arrangements. In certain circumstances the acquired IP will be capitalised, dependant on the phase of development.

For the year ended 30 June 2020, the research costs, net of recoveries, were $921.8m (2019: $831.8m). Further information about the Group's research and development activities can be found on the CSL website.

Note 7: Intangible Assets

	Goodwill US$m		Intellectual Property US$m		Software US$m		Intangible capital work in progress US$m		Total US$m	
Year	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
Cost	**1,154.2**	1,101.8	**575.7**	565.6	**696.1**	618.5	**133.4**	148.4	**2,559.5**	2,434.3
Accumulated amortisation	**–**	–	**(184.1)**	(332.1)	**(235.2)**	(223.9)	**–**	–	**(419.3)**	(556.0)
Net carrying amount	**1,154.2**	1,101.8	**391.7**	233.5	**460.9**	394.6	**133.4**	148.4	**2,140.2**	1,878.3
Movement										
Net carrying amount at the beginning of the year	**1,101.8**	1,102.0	**233.5**	262.9	**394.6**	257.8	**148.4**	179.8	**1,878.3**	1,802.5
Additions[2]	**–**	–	**–**	10.2	**44.2**	3.2	**76.8**	172.9	**121.0**	186.3
Business acquisition	**52.6**	–	**188.0**	–	**–**	–	**–**	–	**240.6**	–
Transfers from intangible capital work in progress	**–**	–	**–**	–	**93.1**	204.0	**(93.1)**	(204.0)	**–**	–
Transfers to/from property, plant and equipment	**–**	–	**–**	–	**(1.0)**	–	**–**	1.0	**(1.0)**	1.0
Disposals	**–**	–	**(25.2)**	(1.5)	**–**	(0.1)	**(0.1)**	0.1	**(25.3)**	(1.5)
Amortisation for the year[3]	**–**	–	**(3.7)**	(37.2)	**(68.7)**	(65.1)	**–**	–	**(72.5)**	(102.3)
Currency translation differences	**(0.2)**	(0.2)	**(0.9)**	(0.9)	**(1.3)**	(5.2)	**1.5**	(1.4)	**(0.9)**	(7.7)
Net carrying amount at the end of the year	**1,154.2**	1,101.8	**391.7**	233.5	**460.9**	394.6	**133.5**	148.4	**2,140.2**	1,878.3

Goodwill

Any excess of the fair value of the purchase consideration of an acquired business over the fair value of the identifiable net assets (minus incidental expenses) is recorded as goodwill.

Goodwill is allocated to each of the cash-generating units but is monitored at the segment (business unit) level. The aggregate carrying amounts of goodwill allocated to each business unit are as follows:

	2020 $m	2019 $m
CSL Behring	**1,154.2**	1,101.8
Closing balance of goodwill as at 30 June	**1,154.2**	1,101.8

Goodwill is not amortised but is measured at cost less any accumulated impairment losses. Impairment occurs when a business unit's recoverable amount falls below the carrying value of its net assets.

The results of the impairment test show that each business unit's recoverable amount exceeds the carrying value of its net assets, inclusive of goodwill. Consequently, there is no goodwill impairment as at 30 June 2020.

A change in assumptions significant enough to lead to impairment is not considered a reasonable possibility.

2 The intangible capital work in progress additions relate to two significant information technology projects.
3 The amortisation charge is recognised in general and administration expenses in the statement of comprehensive income.

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Note 8: Property, Plant and Equipment

	Land US$m		Buildings US$m		Leasehold Improvements US$m	
	2020	2019	2020	2019	2020	2019
Cost	**38.8**	38.8	**782.0**	687.5	**461.0**	381.5
Accumulated depreciation/amortisation	**–**	–	**(220.4)**	(197.5)	**(136.3)**	(115.7)
Net carrying amount	**38.8**	38.8	**561.7**	490.0	**324.8**	265.9
Movement						
Net carrying amount at the start of the year	**38.8**	39.9	**490.0**	489.9	**265.9**	230.9
Transferred from capital work in progress	**–**	–	**92.9**	32.7	**84.5**	58.8
Additions[4]	**–**	0.1	**–**	0.6	**–**	1.7
Disposals	**–**	–	**–**	(0.1)	**(5.0)**	(4.7)
Other Adjustments	**–**	–	**(4.6)**	–	**–**	–
Depreciation/amortisation for the year	**–**	–	**(24.1)**	(25.7)	**(22.9)**	(24.0)
Accumulated depreciation/amortisation on disposals	**–**	–	**–**	0.4	**2.3**	4.0
Currency translation differences	**(0.1)**	(1.1)	**7.5**	(7.8)	**(0.0)**	(0.9)
Net carrying amount at the end of the year	**38.7**	38.8	**561.7**	490.0	**324.8**	265.9

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 – 25 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.

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 one to three years. CSL has full control of the asset and 100% of the value of the facility is included in the consolidated financial statements.

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.

4 The capital work in progress additions are the result of major capacity projects. One of these projects is our recombinant protein facility in Lengnau which is subject to an agreement with Thermo Fisher to lease the facility to them upon the achievement of defined milestones.

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Plant and Equipment US$m		Right of Use assets US$m		Capital work in progress US$m		Total US$m	
2020	2019	2020	2019	2020	2019	2020	2019
3,302.9	3,040.0	**1,347.2**	–	**2,852.5**	2,221.0	**8,784.3**	6,403.2
(1,714.5)	(1,584.5)	**(407.8)**	–	**–**	–	**(2,478.9)**	(1,918.9)
1,588.4	1,455.5	**939.4**	–	**2,852.5**	2,221.0	**6,305.4**	4,484.3
1,468.6	1,436.8	**925.8**	–	**2,221.0**	1,340.5	**5,410.0**	3,551.4
297.0	246.2	**–**	–	**(474.4)**	(337.7)	**–**	–
63.2	12.3	**85.3**	–	**1,124.6**	1,232.3	**1,273.1**	1,250.4
(129.3)	(89.9)	**–**	–	**(8.2)**	1.8	**(142.6)**	(97.2)
–	–	**–**	–	**(0.5)**	(1.0)	**(5.1)**	(1.0)
(229.3)	(220.6)	**(71.7)**	–	**–**	–	**(348.0)**	(273.2)
110.9	88.7	**–**	–	**–**	–	**113.2**	96.5
7.3	(18.0)	**–**	–	**(10.0)**	(14.9)	**4.7**	(42.6)
1,588.4	1,455.5	**939.4**	–	**2,852.5**	2,221.0	**6,305.4**	4,484.3

Note 9: Deferred Government Grants

	2020 US$m	2019 US$m
Current deferred income	**3.2**	2.8
Non-current deferred income	**40.1**	34.6
Total deferred government grants	**43.3**	37.4

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.

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Note 12: Equity and Reserves

(a) Contributed Equity

	2020 US$m	2019 US$m
Ordinary shares issued and fully paid	–	–
Share buy-back reserve	(4,561.0)	(4,603.0)
Total contributed equity	(4,561.0)	(4,603.0)

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.

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	
	2020	2019	2020	2019	2020	2019
Opening balance	**247.7**	195.1	**(5.7)**	29.1	**242.0**	224.2
Share-based payments expense	**74.3**	52.0			**74.3**	52.0
Deferred tax on share-based payments	**6.8**	0.6			**6.8**	0.6
Net exchange gains/(losses) on translation of foreign subsidiaries, net of hedge			**13.3**	(34.7)	**13.3**	(34.7)
Closing balance	**328.7**	247.7	**7.6**	(5.6)	**336.3**	242.0

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.

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Efficiency of Operation

Note 14: Cash and Cash Equivalents

	2020 US$m	2019 US$m
Reconciliation of cash and cash equivalents		
Cash at bank and on hand	773.4	653.8
Cash deposits	421.0	4.0
Total cash and cash equivalents	1,194.4	657.8

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

	2020 US$m	2019 US$m
Current		
Trade receivables	**1,121.1**	1,274.4
Contract Assets	**191.2**	182.0
Less: Provision for expected credit loss	**(25.3)**	(17.5)
	1,287.0	1,438.9
Sundry receivables	**271.2**	266.0
Prepayments	**145.7**	116.8
Carrying amount of current receivables and contract assets[7]	**1,703.9**	1,821.7
Non-current		
Long term deposits/other receivables	**14.3**	21.6
Carrying amount of non-current other receivables[7]	**14.3**	21.6

Trade, other receivables, and contract assets 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.

A provision for expected credit loss (ECL) is recognised in accordance with AASB 9. ECLs are based on the difference between the contractual cash flows due in accordance with the contract and all the cash flows that the Group expects to receive, discounted at an approximation of the original effective interest rate. 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 expected credit loss has been recognised becomes uncollectible in a subsequent period, it is written off against the provision.

ECLs are recognised in two stages. For credit exposures for which there has not been a significant increase in credit risk since initial recognition, ECLs are provided for credit losses that result from default events that are possible within the next 12-months (a 12-month ECL). For those credit exposures for which there has been a significant increase in credit risk since initial recognition, a loss allowance is required for credit losses expected over the remaining life of the exposure, irrespective of the timing of the default (a lifetime ECL).

For trade receivables and contract assets, the Group applies a simplified approach in calculating ECLs. Therefore, the Group does not track changes in credit risk, but instead recognises a loss allowance based on lifetime ECLs at each reporting date. The Group has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the debtors and the economic environment.

7 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.

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Contract assets and deferred revenue (contract liabilities):
The completion of performance obligations often differs from contract payment schedules. A contact asset is initially recognised for revenue earned from satisfying a performance obligation (AASB 15); however, the receipt of consideration is conditional upon the full satisfaction of the performance obligation within the contract. Upon completing the full performance obligation, the amount recognised as contract assets is reclassified to trade receivables. Amounts billed in accordance with customer contracts, but where the Group had not yet provided a good or service, are recorded and presented as part of deferred revenue. Deferred revenue is recognised as revenue when the Group performs under the contract

Other current receivables are recognised and carried at the nominal amount due upon an unconditional right to payment. Non-current receivables are recognised and carried at amortised cost. They are non-interest bearing and have various repayment terms.

As at 30 June 2020, the Group had made provision for expected credit loss of $25.3m (2019: $17.5m).

	2020 US$m	2019 US$m
Opening balance at 1 July	**17.5**	21.5
Additional allowance/(utilised/written back)	**7.8**	(3.5)
Currency translation differences	**(0.0)**	(0.5)
Closing balance at 30 June	**25.3**	17.5

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 assessing the expected credit loss of trade or other receivable amounts. 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

	2020 US$m	2019 US$m
Current		
Trade payables	**458.3**	422.6
Accruals and other payables	**1,067.1**	951.5
Share-based payments (EDIP)	**–**	33.6
Carrying amount of current trade and other payables	**1,525.4**	1,407.7
Non-current		
Accruals and other payables	**223.8**	86.5
Carrying amount of non-current other payables	**223.8**	86.5

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.

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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 2020, the consolidated statement of comprehensive income, consolidated statement of changes in equity and 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:

a) giving a true and fair view of the consolidated financial position of the Group as at 30 June 2020 and of its consolidated financial performance for the year ended on that date; and

b) 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 (including Independence Standards)* (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 judgment, 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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Report on the Audit of the Remuneration Report

Opinion on the Remuneration Report

We have audited the Remuneration Report included in the directors' report for the year ended 30 June 2020.

In our opinion, the Remuneration Report of CSL Limited for the year ended 30 June 2020, 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
18 August 2020

Kylie Bodenham
Partner
Melbourne
18 August 2020

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ENDNOTES

The running case for the book is CSL Limited's *Annual Report 2019/2020*. Excerpts can be found in Appendix B, and the company's online version at: http://annualreport.csl.com.au/home.htm.

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INDEX

A

Account, 45
Accounting, 1
  cycle, 83
  equation, 7, 46–50
  information system, 44–6
  period assumption, 2
Accounting transactions
  and accounting equation, 46–50
  accounting information system, 44–6
  dual-entry accounting system, 50–3
  journal entries to financial statements, 54–60
  recording transactions in accounting system, 53–4
Accounts payable, change in, 248
Accounts receivable, 108, 116 (*see also* Uncollectible receivables)
  allowance ratio, 118
  change in, 248
  horizontal and vertical analyses, 116–17
  receivables turnover ratio, 117–18
  recording accounts receivable and GST, 108–10
  reporting accounts receivable and GST payable, 110–11
Accrual and cash bases of accounting, 67–9
Accrual basis of accounting, 67
Accrual- and cash-based income reporting, 68–9
Accrual-based accounting, 4
Accrued expense, 75, 79
  ethics and adjusting entries, 76–7
  general rule, 76
  interest expense, 75–6
  salaries expense, 75
Accrued revenue, 71, 78
  general rule, 72
  service revenue, 71–2
Accumulated depreciation, 150, 249–50
Adjusting journal entries, 69, 77
  accrued expense, 75–7
  accrued revenue, 71–2
  adjusted trial balance, 79
  deferred expense, 72–4
  deferred revenue, 69–71
  journalising and posting adjusting entries, 78–9
  preparing financial statements, 80–1
  worksheet, 80
Ageing
  of accounts receivable, 115–16
  schedule, 115
Allotment or issue, 219
Allowance for doubtful debts, 112
Allowance method, 112
  recording bad debt expense, 112–13
  recording recovery of write-off, 114
  recording write-off, 113–14
Allowance ratio, 118
Amortisation, 167
  effective interest method of, 192–4
  schedule, 181
Application, 219
Assets, 6, 25
  accounts, 51
  impairment, 159–60
  revaluations, 160
Auditor's report, 35
Australian Accounting Standards Board (AASB), 22
Australian Company Number (ACN), 216
Australian dollars (AUD), 29
Australian Securities and Investments Commission (ASIC), 21, 136, 216, 261
Australian Securities Exchange (ASX), 2, 22, 37, 250, 261
Australian Taxation Office (ATO), 109, 127, 174
Average age of non-current assets, 164
Average useful life of non-current assets, 164

B

Bad debt expense, 111, 114
  percentage-of-receivables approach, 114–16
  percentage-of-sales approach, 114
Balance sheet, 5, 7–8, 24
  assets, 25
  equation, 7
  equity, 26
  horizontal analysis, 263
  liabilities, 25–6
  vertical analysis, 265–8
Bank reconciliations, 94
  adjusting cash balance, 95
  example, 96–7
  reconciling bank balance, 94–5
  reconciling business book balance, 95
Bonds, 177
  issue price, 191–2
  issued at discount, 180–2
  issued at face value, 179–80
  issued at premium, 182–3
  redeeming bond before maturity, 184–5
Bonus
  to existing partners, 206
  to new partner, 206
  to withdrawing partner, 208
Business Activity Statement (BAS), 127
Business forms, 20–2

C

Call, 219
Capital
  ability to raise, 217
  accounts for each partner, 201–3
  deficiency, 210
  structure, 31
Carrying amount, 152
Cash, 98
  over and short, 98
  basis of accounting, 67
  equivalents, 98
  inflows, 249
  outflows, 249
  received from customers, 243–4
Cash analysis, 99
  free cash flow, 100–2
  horizontal and vertical analyses, 99–100
Cash controls, 94
  bank reconciliations, 94–7
Cash dividends, 222
  on preference shares, 226
  recording, 222
  reporting, 222–3
Cash flows, 165, 233
  adequacy ratio, 252–3
  from financing activities, 9, 239–41, 250–2
  from investing activities, 9, 239, 249–50
  from operating activities, 9, 239, 243–50
  reporting, 9
  statement, 9–10
Cash paid
  for inventory, 244
  for operating expenses, 244–5
  for taxes, 245–6
Chart of accounts, 45, 50
Chartered Accountants Australia and New Zealand (CAANZ), 26, 176
Closing entries, 82
Closing process, 81–3
Co-ownership of property, 200–1
Committee of Sponsoring Organizations (COSO), 91
Common-size financial statement, 31
Commonwealth Bank of Australia (CBA), 224
Company, 21
Comparability, 11
Compound interest, 190
Conceptual framework for financial reporting, 12
Consolidated balance sheet, 24
Consumer Price Index (CPI), 30
Contingent liabilities, 186–7
Contributed capital, 6
Contributed equity, 26, 218, 250
  forfeiture, 221
  issuing shares by installment, 219–20
  oversubscription, 220–1
  recording ordinary shares, 219
  shareholder rights, 219
Control activities, 92
  establishing responsibility, 92
  independent verification, 93
  maintaining adequate documentation, 93
  physical security, 93
  segregation of duties, 93
Control environment, 91–2
Copyright, 166
Corporate form of business, 216
  ability to raise capital, 217
  dividend imputation, 218
  limited liability of owners, 217
  regulation, 218
  separate legal entity, 216
  transferability of ownership, 217
Corporation, 21, 216
Corporations Act 2001, 22, 216
Cost, 152
  cost–benefit analysis, 94
  model, 160
  principle, 6
Cost of sales (COS), 27, 263
Credit, 50
  rules, 51–3
CSL Limited, 2
Cumulative preference shares, 226
Current assets, 25
Current liabilities, 25–6, 173
  current portion of non-current debt, 176
  notes payable, 175
  with payroll, 174–5
  reporting, 176
  taxes payable, 174
Current portion of non-current debt, 176
Current ratio, 188, 273–4

D

Date of record, 222
Days-in-inventory ratio, 140
Days-in-receivables, 118
Debit, 50
  rules, 51–3
Debt to assets ratio, 189, 276
Debt to equity ratio, 277
Declaration date, 222
Deferred expense, 72, 78–9
  depreciation expense, 73–4
  general rule, 74
  insurance expense, 73

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Deferred revenue, 69, 78
exception to general rule, 70–1
general rule, 70
subscription revenue, 69–70
Deposit in transit, 94
Depreciable amount, 152
Depreciation, 150
changes in depreciation estimates, 157–8
methods, 155–7
Depreciation expense, 4, 6, 73–4, 150
calculating, 152–7
Direct methods for operating cash flows, 242–3
cash paid for inventory, 244
cash paid for operating expenses, 244–5
cash paid for taxes, 245–6
cash received from customers, 243–4
Direct write-off method, 111–12
Directors' report, 35–6
Discount, 178
on Bonds Payable, 180
example, 193
Dividend Reinvestment Plan (DRP), 223–4
Dividends, 7, 221
accounts, 52
cash, 222–3
DRP, 223–4
imputation, 218
in arrears, 226
payout ratio, 231–2
share, 223
share splits, 224–5
yield, 232–3
Dual nature of accounting, 46
Dual-entry accounting system, 50
debit and credit rules, 51–3
T-account, 50–1
DuPont analysis, 278–9

E

Earnings before interest and tax (EBIT), 271
Earnings per share (EPS), 230, 271–2
Economic entity assumption, 2
Effective interest method of amortisation, 192–4
Effective rate of interest (*see* Market rate of interest)
Electricity expense, 245
Electricity payable, change in, 248
Electronic Funds Transfer (EFS), 95
English Partnership Act 1890, 200
Equipment, 249
Equity, 6–7, 26
accounts, 52
reporting, 8
Error correction, 96
Estimated residual value, 152
Estimated useful life, 152
Ethics in preparing financial statements, 23–4
Expenditures after acquisition, 158–9
Expenses, 4–5, 246
accounts, 52

F

Face value, 177
Faithful representation, 11
Finance lease, 186
Financial accounting, 2
accounting period assumption, 2
cash flows reporting, 9–10
economic entity assumption, 2
equity reporting, 8
financial position reporting, 5–7
language of accounting, 12–14
monetary unit assumption, 2–3
objectives of financial reporting, 10–12
profitability reporting, 3–5
Financial information, 261
Financial leverage, 275
Financial position reporting, 5
assets, 6
balance sheet, 7
equity, 6–7
liabilities, 6
Financial reporting
comparability, 11
faithful representation, 11
objectives of, 10
relevance and materiality, 10–11
timeliness, 12
understandability, 12
verifiability, 11–12
Financial statements, 20, 59–60
analysis, 261
analytical tools, 262
balance sheet, 24–6
business forms, 20–2
DuPont analysis, 278–9
ethics in preparing financial statements, 23–4
financial information, 261
GAAP, 22–3
horizontal analysis, 29–30, 262–3
income statement, 26–9
information, 33–7
liquidity analysis, 272–5
profitability analysis, 269–72
solvency analysis, 275–8
standards of comparison, 261–2
statement of changes in equity, 31–3
vertical analysis, 30–1, 263–9
Financing activities, 9
First-in, first-out method (FIFO method), 131–3, 142
Floating and Filming business (F&F business), 1–2, 24
Forfeit, 221
Forfeited Share Account (FSA), 221
Forfeiture, 221
Franchise, 166
Free cash flow, 100–2, 252

G

Gain example, 161–2
Generally Accepted Accounting Principles (GAAP), 22–3, 68, 112, 152
Goods and Services Tax (GST), 109, 127, 174
Goodwill, 166
Governance information, 37
Gross margin, 27
Gross pay, 174
Gross profit, 27

H

Horizontal analysis, 29–30, 99–100, 116–17, 138–9, 162–3, 187–8, 229–30, 262–3
Human element, 94

I

Income statement, 3, 5, 8, 26
gross profit, 27
horizontal analysis, 263
operating expenses, 27–8
other comprehensive income, 28–9
profits before income tax expense, 28
vertical analysis, 268–9
Income tax expense, 28
Independent auditor's report, 35
Independent verification, 93
Indirect methods for operating cash flows, 242–3 (*see also* Direct methods for operating cash flows)
adjustments for current assets and liabilities, 247–8
adjustments for gains and losses from investing and financing activities, 247
adjustments for non-cash effects on net income, 247
net operating cash flows, 249
Information and communication, 93
Insurance expense, 73, 244–5
Intangible assets, 25, 165
amortising and impairing, 167–8
externally acquired, 166–7
internally generated, 167
recording, 166–7
Intercompany comparisons, 261
Interest, 4
expense, 75–6
Internal control, 90–1
components, 91–4
limitations of, 94
International Accounting Standards Board (IASB), 22
International Financial Reporting Standards (IFRS), 22
Intracompany comparison, 261
Inventory, 126
business' management of, 138–40
change in, 248
comparing inventory costing methods, 135–6
costing methods, 131–5, 141–3
estimating ending inventory, 137
expensing, 130–1
LCNRV rule, 137–8
periodic inventory system, 140–3
recording, 126–30
reporting inventory and cost of sales, 131
turnover ratio, 139–40, 275
Investing activities, 9
Investments, 249
Issued capital (*see* Contributed equity)
Issued shares, 219
by installment, 219–20

J

Journal, 53
entries to financial statements, 54
financial statements, 59–60
recording transactions in journal and posting to ledger, 54–59
trial balance, 59

L

Language of accounting, 12–14
Last-in, first-out method (LIFO method), 131–4, 142
Lease, 185
liabilities, 185–6
Ledger, 53
Liabilities, 6, 25–6, 173
accounts, 52
additional, 185–7
bond's issue price, 191–2
bonds, 177–83
company's management, 187–90
current, 173–6
effective interest method of amortisation, 192–4
non-current, 176–7
redeeming bond before maturity, 184–5
time value of money, 190–1
Limited liability of owners, 217
Liquidation, 209
partners receive remaining cash, 210–11
of partnership, 209
paying liabilities, 209–10
sale of assets, 209
Liquidity, 188
analysis, 272
current ratio, 273–4
inventory turnover ratio, 275
quick ratio, 274
receivables turnover ratio, 274–5
Losses, 203–4
example, 161
Lower-of-cost-and-net-realisable-value rule (LCNRV rule), 137–8

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M

Market rate of interest, 177
Matching principle, 4
Material, 11
Materiality, 10–11
Maturity date, 177
Monetary unit assumption, 2–3
Monitoring, 93
Monthly service charge, 97
Moving average method, 134–5
Multi-step income statement, 26
Mutual agency, 200–1

N

Net financing cash flows, 251
Net increase (decrease) in cash, 241
Net operating cash flows, 246, 249
Net pay, 174
Net purchases, 141
Net realisable value, 110
Non-cumulative preference shares, 226
Non-current assets, 25, 149 (*see also* Intangible assets)
  adjustments, 157–60
  average age of, 164
  average useful life of, 164
  and cash flows, 165
  company's management, 162–4
  disposing, 160–2
  expensing, 150–1
  recording, 149–50
  reporting, 152
  turnover ratio, 163–4
Non-current liabilities, 26, 176–7, 250 (*see also* Current liabilities)
Non-sufficient funds (NSF), 96–7
Notes payable, 175
Notes receivable, 119
  collecting note, 120–1
  recording interest, 119–20
  recording note, 119
Notes to financial statements, 34–5

O

Off-balance-sheet financing, 186
Operating activities, 9
Operating expenses, 27–8
Optional deductions, 174
Ordinary shares, 218
  recording, 219
Other comprehensive income, 26, 28–9
Outstanding cheque, 95
Oversubscription, 220–1

P

Partnerships, 20, 200
  admission and withdrawal of partner, 204–9
  agreement, 200
  capital accounts for each partner, 201–2
  commencing, 202–3
  ease of formation, 200
  financial statements, 211
  form of business, 200–2
  investing in, 205–7
  liquidation, 209–11
  mutual agency and co-ownership of property, 200–1
  no partnership taxation, 201
  profits and losses, 203–4
  purchasing current partner's interest, 205
  transferability of ownership, 201
  unlimited liability of owners, 201
Patent, 165
Paying liabilities, 209–10
Payment date, 222
Percentage-of-receivables approach, 114–16
Percentage-of-sales approach, 114
Periodic inventory system, 127, 140
  inventory costing methods, 141–3
  recording inventory, 141
Perpetual inventory system, 127
Petty cash funds, 97
  cash over and short, 98
  establishing fund, 97
  making payments from fund, 97
  replenishing fund, 97–8
Physical security, 93
Preference shares, 225
  cash dividends on, 226
  recording, 225–6
Premium, 178
  example, 194
Prepaid insurance, change in, 248
Present value (PV), 190
Price to earnings ratio (P/E ratio), 272
Profit margin, 269–70
  ratio, 269
Profitability analysis, 269
  EPS, 271–2
  P/E ratio, 272
  profit margin, 269–70
  return on assets, 270–1
  return on equity, 270
Profitability reporting, 3
  expenses, 4–5
  income statement, 5
  revenues, 3–4
Profits, 203
  before income tax expense, 28
  sharing profits based on capital balances and on service, 204
  sharing profits based on set percentage, 203–4
Promissory note, 119
Property, plant and equipment (PPE), 99
Prospectus, 219
Public company, 22
Purchase Discounts account, 141
Purchase Returns and Allowances account, 129, 141
Purchases, 127

Q

Quick ratio, 274

R

Receivables, 108
  accounts receivable, 108–111, 116–18
  bad debt expense, 114–16
  collection, 96
  notes receivable, 119–21
  turnover ratio, 117–18, 274–5
  uncollectible receivables, 111–14
Reducing-balance method, 153–4
Reissue, 221
Relevance, 10–11
Required deductions, 174
Retail method, 137
Retained earnings, 7, 26, 251
Return on assets, 270–1
  ratio, 270
Return on equity, 231, 270
  ratio, 270
Revaluation model, 160
Revenues, 3–4, 246
  accounts, 52
  recognition principle, 3
Risk assessment, 92

S

Salaries expense, 75, 245
Sale of assets, 209
Sales revenue, 27
Sarbanes–Oxley Act of 2002, 90
Segregation of duties, 93
Service revenue, 71–2
Share buy-backs, 226
  recording, 228–9
Share dividends, 223
Share splits, 224–5
Shareholder rights, 219
Shareholders' equity
  and cash flows, 233
  company's management, 229–33
  contributed equity, 218–21
  corporate form of business, 216–18
  dividends, 221–5
  preference shares, 225–6
  share buy-backs, 226–9
Single-step income statement, 26
Sole proprietorship, 20
Sole trader, 20
Solvency, 189
  analysis, 275
  debt to assets ratio, 276
  debt to equity ratio, 277
  times interest earned ratio, 277–8
Specific identification, 131–2, 142
Stated interest rate, 177
Statement of cash flows, 238
  additional disclosures, 241
  company, 252–3
  from financing activities, 239–41, 250–2
  from investing activities, 239, 249–50
  net increase (decrease) in cash, 241
  from operating activities, 239, 243–50
  preparing, 241–3
Statement of changes in equity, 8, 31–3
Straight-line method, 152–3
Straight-line method of amortisation, 181
Subscription revenue, 69–70
Sustainability report, 36–7

T

T-account, 50–1
Taxes payable, 174
  change in, 248
Temporary accounts, 82
Time value of money (TVM), 190–1
Timeliness, 12
Times interest earned ratio, 277–8
Trade debtors, 108
Trade name, 166
Trademark, 166
Transactions, 44
  analysis, 46–50
Transferability of ownership, 201, 217
Transportation-in, 129
Trial balance, 53, 59

U

Uncollectible receivables, 111 (*see also* Accounts receivable)
  allowance method, 112–14
  direct write-off method, 111–12
Understandability, 12
Units-of-activity method, 154–5
Unlimited liability of owners, 201
US dollars (USD), 29

V

Verifiability, 11–12
Vertical analysis, 30–1, 99–100, 116–17, 138–9, 162–3, 187–8, 229–30, 263–9
Video Vitals (ViVi), 54, 77

W

Weighted average method, 143
Withdrawal of partner, 207
  at carrying amount, 208
  at less than carrying amount, 209
  at more than carrying amount, 208
  revaluation of assets before, 207–8

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LEARNING OBJECTIVES

- **LO1** Explain the three basic 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 statement of cash flow and the terms and principles used to create it.
- **LO6** Understand the objectives of financial reporting and qualitative characteristics that make accounting information useful.
- **LO7** Review the language of accounting.

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 financial 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.

income statement (profit and loss statement)
The statement that reports a company's revenues and expenses and 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 financial 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 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.

Key formulas

KEY FORMULA 1.1: INCOME STATEMENT

Revenues – Expenses = Net Profit or Net Loss
(or Income, more formally known as 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 (Drawings)
= 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

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Key definitions

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.

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

timeliness
Where 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, Theo begins a tutoring service that he will operate for four months. With $1200 borrowed from a friend and $3000 of his own money, he purchases a $3600 accounting licence and software, and $240 of supplies. Theo promises to pay his friend $30 interest at the end of each month and to pay back the full $1200 at the end of June.

Theo charges $150 per tutoring session. During March, he conducted 40 sessions and bought $300 of additional supplies. At the end of the month, Theo has not collected on 16 of the 40 sessions, and he has $150 of supplies left over. Theo withdrew $1200 from the business during March. Prepare Theo's income statement and statement of changes in equity for the month ending 31 March and his balance sheet on 31 March.

Demonstration problem solution

Theo's Tutoring Service Income statement for the month ending 31 March		
Revenue:		$6 000
Expenses:		
Depreciation (licence and software, 1 of 4 months)	$900	
Supplies	390	
Interest	30	
Total expenses		1320
Net Income		$4 680

Theo's Tutoring Service Statement of changes in equity for the month ending 31 March	
Retained earnings, 1 March	$ 0
Add: Net income	4 680
Less: Dividends	1200
Retained earnings, 31 March	$3 480

Theo's Tutoring Service Balance sheet at 31 March		
Cash	$2 430	
Accounts receivable	2 400	
Licence and Software (net)	2 700	
Supplies	150	
Total assets		$7 680
Note payable	$1200	
Total liabilities		$ 1200
Contributed capital	$3 000	
Retained earnings	3 480	
Total equity		6 480
Total liabilities and equity		$7 680

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Terms used to identify and describe economic information

Term	Definition	Reported on
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)

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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

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REVIEW 2 FINANCIAL STATEMENTS

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 regulating companies, 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 is not intended for resale.

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

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.

retained earnings
The amount a company earns and retains in the business.

contributed equity
The amount of equity a company generates through the sale of shares to investors (shareholders).

LEARNING OBJECTIVES

- **LO1** Explore the three major forms of business.
- **LO2** Define Generally Accepted Accounting Principles (GAAP) and their origins.
- **LO3** Apply ethics in the preparation and presentation of financial statements.
- **LO4** Describe the main classifications of assets, liabilities and equity in a balance sheet.
- **LO5** Discuss the main subtotals of income on an income statement.
- **LO6** Analyse the balance sheet and the income statement using horizontal and vertical analyses.
- **LO7** Describe the structure of a statement of changes in equity.
- **LO8** Look at the types of information usually disclosed along with financial statements.

Key formulas

KEY FORMULA 2.1: ASSETS

$$\text{Current Assets} + \text{Non-current Assets} = \text{Total Assets}$$

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

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

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Key definitions

multi-step income statement
A statement in which certain revenues and expenses are grouped together to calculate several subtotals of income.

other comprehensive income
An income group that 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.

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 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.

directors' report
Part of the financial report that covers matters that 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	(1627)	0.2%
Profits before income tax	$190 669	20.0%
Income tax expense	70 548	7.4%
Net profit	$120 121	12.6%

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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	4596	0.6%
Total current liabilities	$118 886	15.2%
Non-current loan	16 335	2.1%
Deferred tax liability	7716	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%

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REVIEW 3 RECORDING ACCOUNTING TRANSACTIONS

Key definitions

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

transactions
Economic events that affect a business' assets, liabilities and/or equity.

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
The principle that 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, and prepare a trial balance, income statement, changes in equity and balance sheet.

Key exhibit

Exhibit SUMMARY OF DEBIT AND CREDIT RULES

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

Demonstration problem

The following transactions occurred during the first month of operations for Wing 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.

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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	

Wing 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

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REVIEW **4** ACCRUAL ACCOUNTING AND ADJUSTING ENTRIES

LEARNING OBJECTIVES

Key definitions

cash basis of accounting
An approach that records revenues when cash is received and records expenses when cash is paid.

accrual basis of accounting
An approach that records revenues when they are earned and records expenses when they are incurred.

adjusting journal entries
Entries made in the 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.

LO1 **Explain how profit is measured and reported under the accrual and cash bases of accounting.**

LO2 **Identify the four major scenarios 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.

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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

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REVIEW

5 CASH AND INTERNAL CONTROLS

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
The need for an 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

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Demonstration problem

Bank reconciliation

At the end of January, Sarah 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	2300	6 550
Deduct outstanding cheques:		
No. 12983	$ 620	
No. 12986	950	
No. 12989	1200	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

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REVIEW 6 RECEIVABLES

Key definitions

account receivable
An amount owed by a customer who has purchased the business' goods or services.

Goods and Services Tax (GST)
A value-added tax charged on most sales but also able to be claimed back on purchases.

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
The 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
The 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
The method that estimates bad debt expense as a percentage of sales.

percentage-of-receivables approach
The 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, including GST.
- **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

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

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

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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

Interest Earned = Principal × Annual Rate of Interest × 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 2022. Assume that Chen Ball uses the allowance method for recording bad debts.

Gross accounts receivable at 30/06/2022	$11 760
Allowance for bad debts at 30/06/2022	Credit balance $138
Net sales for year ended 30/06/2022	$75 200
Receivables written off during year ended 30/06/2022	990

1. Prepare the journal entry that CBA made during the year to write off the $900 in receivables (which includes GST).
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 2022?

Demonstration problem solution

1	Allowance for bad debts	900	
	GST payable	90	
	Accounts receivable		990
	Because the customer does not pay, the GST is not payable by Chen		
2	Bad debt expense ($75 200 × 2%)	1504	
	Allowance for bad debts		1504
	Net realisable value:		
	Gross accounts receivable		$11 760
	Less: Allowance ($138 + $1504)		1642
	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 net 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).		

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REVIEW 7 INVENTORY

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** EXTENSION: record purchases and calculate the cost of sales under a periodic system.

Key definitions

inventory
A tangible resource that is held for resale in the normal course of operations.

perpetual inventory system
A system that updates the inventory account each time inventory is bought or sold.

periodic (physical) inventory system
A system that 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 suppliers as well as the cost reductions from vendor allowances.

specific identification method
A method that determines the cost of sales based on the actual cost of each inventory item sold.

first-in, first-out (FIFO) method
A method that 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
A method that 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
A method that 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
A rule that 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
A ratio that 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
A ratio that converts the inventory turnover ratio into a measure of days by dividing the turnover ratio into 365 days.

Purchase Returns and Allowances account
An account that accumulates the cost of all inventory returned to suppliers as well as the cost reductions from supplier allowances.

Purchase Discounts account
An account that accumulates the cost reductions generated from supplier discounts granted for prompt payments.

net purchases
The value of inventory purchased and transportation-in less purchase returns and allowances and purchase discounts.

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

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

KEY FORMULA 7.4: INVENTORY TURNOVER RATIO

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Where average inventory is:

$$\frac{\text{Beginning Inventory} + \text{Ending Inventory}}{2}$$

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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 begins with 32 widgets that 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	$1760
Purchase	45	$60	$2700				32	$55	$1760
							45	$60	2700
							77		$4460
Sell 50 units				32	$55	$1760	27	$60	$1620
				18	$60	1080			
				50		**$2840**			

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	$1760
Purchase	45	$60	$2700				32	$55	$1760
							45	$60	2700
							77		$4460
Sell 50 units				5	$55	$ 275	27	$55	$1485
				45	$60	2700			
				50		**$2975**			

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	$1760
Purchase	45	$60	$2700				32	$55.00	$1760
							45	$60.00	2700
							77		$4460
Sell 50 units				50	$57.92	**$2896**	27	$57.92	$1564

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REVIEW **8** NON-CURRENT ASSETS AND INTANGIBLE ASSETS

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.

estimated residual value
The expected value of a non-current asset at the end of its useful life.

estimated 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.

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
A model that posits that 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
A model that posits that 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.

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

$$\text{Depreciation Expense} = \frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life}}$$

KEY FORMULA 8.2: REDUCING-BALANCE METHOD

$$\begin{aligned}\text{Depreciation} &= \text{Depreciation Rate} \times \text{Carrying Amount} \\ &= (\text{Straight-Line Rate} \times 1.5) \\ &\quad \times (\text{Cost} - \text{Accumulated Depreciation})\end{aligned}$$

KEY FORMULA 8.3: UNITS-OF-ACTIVITY METHOD

$$\text{Depreciation Expense per Unit} = \frac{\text{Cost} - \text{Residual Value}}{\text{Useful Life in Units}}$$

$$\begin{aligned}\text{Depreciation Expense} &= \text{Depreciation Expense per Unit} \\ &\quad \times \text{Actual Units of Activity}\end{aligned}$$

KEY FORMULA 8.4: DISPOSALS

$$\text{Gain on Disposal} = \text{Proceeds from Sale} > \text{Carrying Amount}$$

$$\text{Loss on Disposal} = \text{Proceeds from Sale} < \text{Carrying Amount}$$

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Key definitions

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.

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	8 250
Remaining depreciable cost	$52 500
Divided by remaining useful life (5 years + 2 more years)	÷7
Depreciation expense for year 6	$ 7 500

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	$ 2 250

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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** EXTENSION: the time value of money.
- **LO8** EXTENSION: determine a bond's issue price.
- **LO9** EXTENSION: record bond interest payments under the effective interest method.

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
A 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
Where 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
A ratio that compares a company's current assets to its current liabilities and measures

Key formulas

KEY FORMULA 9.1: INTEREST PAYABLE ON BONDS PAYABLE

$$\begin{aligned}\text{Interest Paid} &= \text{Face Value} \times \text{Stated Interest Rate} \\ &\quad \times \text{Time Outstanding} \\ &= \$200\,000 \times 0.07 \times 12/12 \text{ months} \\ &= \$14\,000\end{aligned}$$

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

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Key definitions

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
A ratio that 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.

compound interest
Where interest is reinvested and interest is earned on the interest reinvested.

present value (PV)
The amount of future cash flows discounted to their equivalent worth today.

effective interest method of amortisation
A method that amortises the bond discount or premium so that interest expense each period is a constant percentage of the bond's carrying amount.

KEY FORMULA 9.5: HORIZONTAL ANALYSIS

$$\text{Dollar Change in Account Balance} = \frac{\text{Current Year Balance} - \text{Prior Year Balance}}{\text{Units Available for Sale}}$$

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

KEY FORMULA 9.6: VERTICAL ANALYSIS

	Balance sheet		Income Statement
$\text{Percentage} =$	$\frac{\text{Account Balance}}{\text{Total Assets}}$	or	$\frac{\text{Account Balance}}{\text{Net Sales or Revenue}}$

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)

Interest Expense = Carrying Amount
× Market Rate of Interest at Issue
× Time Outstanding

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

Demonstration problem

A four-year, $300 000 bond paying 10 per cent interest was issued for $319 863, resulting in a premium of $19 863. Market rates for similar risk securities were 8 per cent at the time of issue. Calculate the interest expense, discount amortised and carrying value at the end of the first year and second year.

Demonstration problem solution

End of year 1: Interest Expense = $319 863 x 0.08 = $25 589
Discount Amortised = Interest Expense $30 000 - $25 589 = $4411
Carrying Amount = $319 863 - $4411 = $315 452

End of year 2: Interest Expense = $315 452 x 0.08 = $25 236
Discount Amortised = Interest Expense $30 000 - $25 236 = $4764
Carrying Amount = $315 452 - $4764 = $310 688

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REVIEW 10 PARTNERSHIPS

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.**

Key definitions

capital account for each partner
An account that records the current market value of net assets contributed.

bonus to the new partner
Where a new partner pays less than the capital received.

bonus to the existing (old) partners
Where a new partner pays more than the capital received.

bonus to the withdrawing partner
Where the departing partner takes more than their capital balance.

bonus to the remaining partners
Where 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.

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) and 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, and the goodwill is sold to Tourism Egypt for a handful of gold ($300 and the original debts were repaid in gold. The remaining gold is 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

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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

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REVIEW **11** SHAREHOLDERS' EQUITY

LEARNING OBJECTIVES

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; 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
Where more shares are applied for than are available to be issued.

forfeit
Where a shareholder does not pay the allotment and/or call, so 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.

- **LO1** Describe the characteristics of the corporate form of business.
- **LO2** Discuss contributed 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 in 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

$$\frac{\text{Beginning Shares Outstanding} + \text{Ending shares Issued}}{2}$$

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Key definitions

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.

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: AVERAGE EQUITY

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend}}{\text{Total Comprehensive Income}} \text{ or } \frac{\text{Dividend per Share}}{\text{Earning per Share}}$$

KEY FORMULA 11.8: DIVIDEND YIELD

$$\text{Dividend yield} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}}$$

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REVIEW **12** STATEMENT OF CASH FLOWS

LEARNING OBJECTIVES

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
A method of reporting cash flows from operating activities in which cash inflows and outflows from operations are reported separately on the CFS.

indirect method
A 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
A ratio that compares free cash flow to the average amount of debt maturing in the next five years and measures the ability to pay maturing debt.

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 2023		Balance sheet as at 30 June		
			2023	2022
Service revenue	$ 40 000	Cash and cash equivalents	$ 3000	$ 4000
Depreciation expense	(20 000)	Accounts receivable	7000	8000
Salaries expense	(13 000)	Equipment	100 000	73 000
Profits before taxes	$ 7000	Accumulated depreciation	(55 000)	(35 000)
Income tax expense	2000		$ 55 000	$ 50 000
Profits after tax	$ 5000	Salaries payable	$ 5000	$ 1000
		Ordinary shares	24 000	24 000
		Retained earnings	26 000	25 000
		Total liabilities and shareholders' equity	$ 55 000	$ 50 000

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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 2023		
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		$ (1000)
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	1000	
Increase to salaries payable	4 000	25 000
Net cash from operating activities		$ 30 000

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REVIEW

13 FINANCIAL STATEMENT ANALYSIS

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
A ratio that compares comprehensive income to net sales and measures the ability to generate profits from sales.

return on equity ratio
A ratio that compares comprehensive income to average shareholders' equity and measures the ability to generate profits from equity.

return on assets ratio
A ratio that compares comprehensive income to average total assets and measures the ability to generate profits from assets.

price to earnings (P/E) ratio
A ratio that compares comprehensive income to a company's share price and provides an indication of investor perceptions of the company.

quick ratio
A ratio that 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
A ratio that compares total liabilities to total equity and measures a company's capital structure and financial leverage.

times interest earned ratio
A ratio that compares income to interest expense and measures the ability to pay interest out of current earnings.

DuPont analysis
A method that 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

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

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:

$$\frac{(\text{Beginning equity} + \text{Ending equity})}{2}$$

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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

$$\underset{\text{Operating Efficiency}}{\frac{\text{Total Comprehensive Income}}{\text{Sales}}} = \underset{\text{Asset Effectiveness}}{\frac{\text{Sales}}{\text{Assets}}} \times \underset{\text{Capital Structure}}{\frac{\text{Assets}}{\text{Equity}}} = \underset{\text{Return on Equity}}{\frac{\text{Total Comprehensive Income}}{\text{Equity}}}$$

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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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