INTERMEDIATE FINANCIAL ACCOUNTING 2



Glenn Arnold & Suzanne Kyle
Athabasca University

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Intermediate Financial Accounting 2 (Arnold and Kyle)

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Detailed Licensing

Licensing

*A detailed breakdown of this resource's licensing can be found in **Back Matter/Detailed Licensing**.*

CHAPTER OVERVIEW

Chapter 13: Current Liabilities

Toyota Applies the Brakes

On March 19, 2014, Toyota Motor Corporation agreed to settle an outstanding legal issue with the U.S. Department of Justice by paying a $1.2 billion (USD) penalty. This amount represented approximately 1/3 of the company's total profit in 2013. The issue related to a problem of unintended acceleration in various Toyota vehicles and the subsequent investigation of those problems. These problems received widespread media attention between November 2009 and January 2010, when Toyota recalled over 9 million vehicles worldwide to replace faulty floor mats and repair sticking accelerator pedals. The effect of this problem, and the resulting media frenzy, was significant: in one week of trading in January 2010, Toyota's share price dropped by 15%. The total cost to the company is difficult to determine, but is likely several billion dollars when the effects of lost sales, repairs, and the settled and outstanding lawsuits are combined with the above penalty.

Companies like Toyota that manufacture complex consumer products can face significant product liabilities. Automobiles are likely to carry warranties that may require service over a period of several years. The costs of providing this service may be significant if there are product quality issues. As well, automobile manufacturers engage in a process of voluntary recalls when product faults potentially impact public safety. When product faults cause injury or death, the company faces further liabilities in the form of legal actions taken by the survivors.

From an accounting perspective, the question is whether these warranty and product safety costs represent liabilities and, if so, how can they be measured? On Toyota's March 31, 2015, financial statement, an amount of 1,328,916 million yen was accrued as a "liability for quality assurance." Note 13 describes this amount as a combination of estimated warranty costs and costs for recalls and other safety measures. Since 2013, this amount had risen by 15% from the previous year by 32%.

Toyota has recognized both the warranty costs and the recall costs as liabilities at the time of sale, based on the terms of the warranty contract and past experience. Although past experience can certainly provide a base for these estimations, there is no precise way to predict future expenditures, as there are numerous variables that affect product quality.

With respect to legal actions taken by customers, these are even more difficult to predict, as the results are determined through the due process of the legal system. As a consequence of the unintended acceleration issue, Toyota faced hundreds of lawsuits, both individual and class action, claiming a wide range of damages. Note 23 of Toyota's March 31, 2015, financial statements indicated that the company was "unable to estimate a reasonably possible loss" beyond the amounts accrued.

It is clear that companies like Toyota face significant challenges in accounting for product warranty and product safety issues. These amounts do, however, need to be accrued and disclosed when possible, as the amounts can be material to the operation of the business.

(Sources: Douglas & Fletcher, 2014; Toyota Motor Corporation, 2016)

Learning Objectives

After completing this chapter, you should be able to:

- Define *current liabilities* and account for various types of current liabilities.
- Differentiate between financial and non-financial current liabilities.
- Explain the accounting treatment of different types of current, financial liabilities.
- Explain the accounting treatment of different types of current, non-financial liabilities.
- Discuss the nature of provisions and contingencies and identify the appropriate accounting treatment for these.
- Discuss the nature of commitments and guarantees and identify the appropriate accounting disclosure for these items.
- Describe the presentation and disclosure requirements for various types of current liabilities.
- Use ratio analysis of current liabilities to supplement the overall evaluation of a company's liquidity.
- Identify differences in the accounting treatment of current liabilities between IFRS and ASPE.

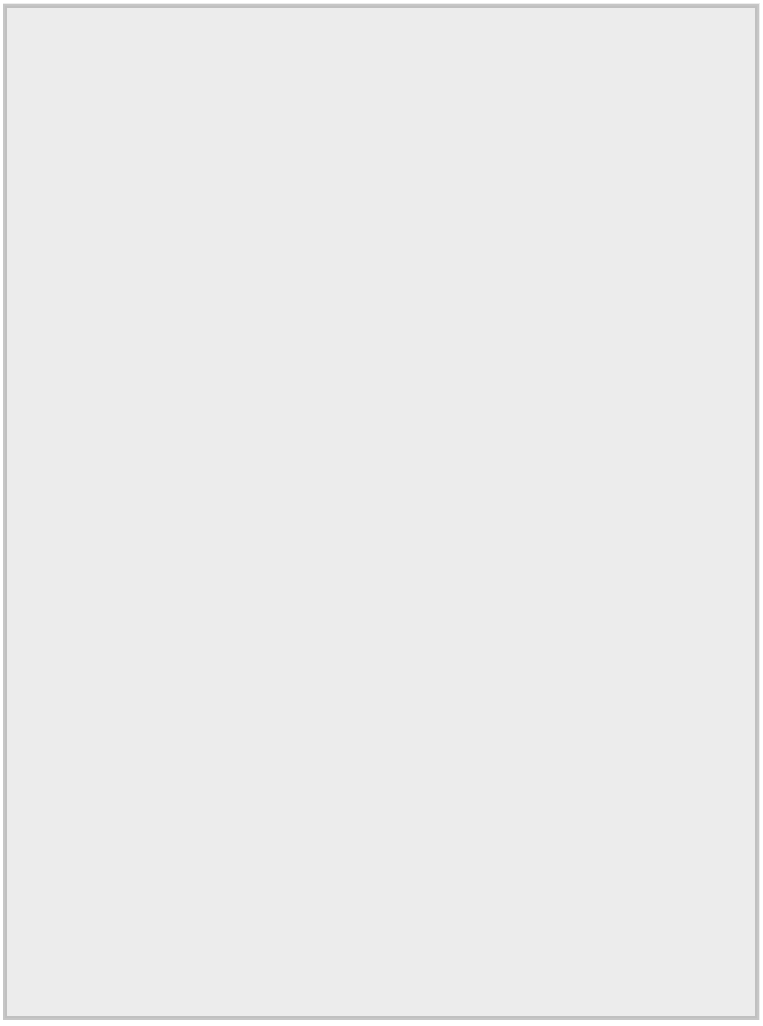
Introduction

If you recall our discussion about financial statement elements from the review chapter, one of the key components of financial statements identified by the conceptual framework is the liability. The proper management of liabilities is an essential feature of business success. Liabilities can impose legal and operational constraints on a business, and managers need to be prudent and strategic in the management of these obligations. Shareholders and potential investors are also interested in the composition of a company's liabilities, as the restrictions created by these obligations will have a significant effect on the timing and amount of future cash flows. Creditors, of course, have a direct interest in the company's liabilities, as they are the ultimate beneficiaries of these obligations. Because of the broad interest in these types of accounts, it is important that the accountant have a thorough understanding of the issues in recognition, measurement, and disclosure of liabilities.

Liabilities can take many forms. The most obvious example would be when a company borrows money from a bank and agrees to repay it later. Another common situation occurs when companies purchase goods on credit, agreeing to pay the supplier within a specified time period. These types of examples are easy to understand, but there are situations where the existence of the liability may not be so clear. When a retail store offers loyalty points to its customers, does this create a liability for the store? Or, when you purchase a new car and the manufacturer offers a five-year warranty against repairs, does this create a liability and, if so, how much should be recorded?

In this chapter we will examine current liabilities, provisions, and contingent liabilities. We will look at the recognition, measurement, and disclosure requirements for these types of accounts. Long-term financial liabilities will be discussed in Chapter 14.

Chapter Organization



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13.1: Definition

From the "Why Accounting?" Chapter, recall that the definition of *liability* is "a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits" (CPA Canada, 2016, 4.4 b). This definition embodies three essential concepts.

First, the liability needs to be a present obligation. This means that at the financial reporting date the entity must have some legal or constructive force that will compel it to settle the obligation. This suggests that the company has no effective way to avoid the obligation. Although this often is the result of the ability of the creditor to legally enforce payment, liabilities can still exist even in the absence of a legal authority. The concept of a constructive obligation suggests that as a result of a company's past business practice, its desire to maintain a good reputation, or even its desire to simply act (and be seen as acting) in an ethical manner, a liability may be created even in the absence of legal enforceability.

Second, the obligation must be the result of a past event. Two common examples of events that would give rise to a liability include the purchase of goods on credit or the receipt of loan proceeds from a bank. The events, which result in economic benefits being delivered to the company, clearly create an obligation. On the other hand, if a company plans to purchase goods in the future, this does not create an obligation, as no event has yet occurred. Although these examples are quite straightforward, we will see later in this chapter that in some situations it is more difficult to ascertain whether a past event has created a present obligation.

The third criterion requires a future outflow of economic benefits. Although we can easily understand the repayment of an outstanding account payable as a use of economic resources, there are other ways that liabilities can be settled that don't involve the payment of cash. These can include the future delivery of goods or services to customers or other parties. In some cases, there may be difficulties in determining the values of the goods or services to be delivered in the future. We will examine several examples of liabilities that are settled with non-cash resources.

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13.2: Classification

When classifying liabilities, we need to assess two conditions: is the liability financial or non-financial, and is the liability current or non-current.

Financial or Non-Financial

IAS 32.11 defines one type of financial liability to be a contractual obligation:

I. to deliver cash or another financial asset to another entity; or
II. to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity (CPA Canada, 2016, IAS 32.11).

A key feature of this definition is that the obligation is created by a contract. This means that there needs to be some type of business relationship between the parties. Liabilities that are created by laws, such as taxation liabilities, do not meet this definition. Other types of non-financial liabilities include unearned revenues, warranty obligations, and customer loyalty programs. These are non-financial because the obligation is to deliver goods or services in the future, rather than cash.

Financial liabilities will normally be initially measured at their fair value, and many will be subsequently measured at their amortized cost. (Note: this definition will be expanded in a later chapter covering complex financial instruments.) Non-financial liabilities are normally measured at the amount the entity would pay to settle the obligation, or to transfer it to a third party. This definition presumes that the entity would act in rational manner (i.e., the presumed settlement is arm's length, non-distressed, and orderly). The determination of this amount will be discussed in more detail later in this chapter.

Current or Non-Current

One of the essential characteristics of a classified balance sheet is the distinction between current and non-current items. This distinction is useful to readers of the financial statements as it helps them to understand the demands on the entity's resources and the potential timing of future cash flows. This information may have an effect on the readers' decisions, so an understanding of this classification is important.

IAS 1 requires the use of current and non-current classifications for both assets and liabilities, unless a presentation in order of liquidity is reliable and more relevant. IAS 1.69 defines *liability* as current when:

- The entity expects to settle the liability in its normal operating cycle.
- The entity holds the liability primarily for the purpose of trading.
- The liability is due to be settled within 12 months after the reporting period.
- The entity does not have an unconditional right to defer settlement of the liability for at least 12 months after the reporting period. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification. (CPA Canada, 2016, IAS 1.69).

One of the key components of this definition is the operating cycle. A company's operating cycle is the time from the acquisition of raw materials, goods, and other services for processing, to the time when cash is collected from the sale of finished goods and services. This cycle can vary greatly between industries. For example, a grocery store, which sells perishable food products, would have a very short operating cycle, perhaps only a few weeks, while a shipbuilding company may take several years to complete and sell a single vessel. For those liabilities that are part of the company's working capital, the operating cycle would be the primary determinant of the current classification, even if settlement occurs more than 12 months after the year-end. For other liabilities that are not part of the company's working capital, the other elements of the definition would be applied. In some cases, the operating cycle may not be obvious or well defined. In these cases, the operating cycle would normally be assumed to be 12 months. Keep the criteria for current classification in mind as we examine more detailed examples of these current liabilities.

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13.3: Current Financial Liabilities

Trade Accounts Payable

Trade accounts payable are likely the most common current liability presented in company financial statements. The balance results from the purchase of goods and services from suppliers and other entities on account. A typical business arrangement would first involve the supplier approving the purchasing company for credit. Once this is done, the purchasing company would be allowed to purchase goods or services up to a maximum amount, with payment required within some specified period of time. Typical terms would require payment within 30 to 60 days from the date of purchase. Many suppliers will also encourage early payment by offering a discount if payment is received within a shorter time period, often as little as 10 days. These types of arrangements were previously discussed in the cash and receivables chapter. From the perspective of the purchaser, the amount of any discount earned by early payment should be deducted directly from the cost of the inventory purchased or any other asset/expense account debited in the transaction.

One issue that accountants need to be concerned with is ensuring that accounts payable are recorded in the correct accounting period. A basic principle of accrual accounting is that expenses should be recorded in the period in which the goods or services are consumed or received. This means that the liability for those purchases must also be recorded in the same period. For this reason, accountants will be very careful during the period immediately before and after a reporting date to ensure that the cut off of purchase transactions has been properly completed. The issue of goods-in-transit at the reporting date was previously discussed in detail in the inventory chapter.

Lines of Credit

Management of operating cash flows is an essential task that must be executed efficiently and effectively in all companies. The nature of the company's operating cycle will determine how long the company needs to finance its operations, as cash from sales will not be immediately collected. Many companies will negotiate an agreement with their banks that allows them to borrow funds on a short-term basis to finance operations. A line of credit essentially operates as a regular bank account, but with a negative balance. A company will make disbursements of cash through the line of credit to purchase goods, pay employees, and so on, and when money is received from customers, it will be used to pay down the balance of the line of credit. At the end of any particular reporting period, the company's bank balance may be positive, in which case it would be reported in the current asset section as cash. If it is negative, for example if the line of credit has been drawn upon, it would be reported as bank indebtedness in the current liability section.

The line of credit will be governed by a contract with the bank that specifies fees and interest charged, collateral pledged, reporting requirements, and certain other covenant conditions that must be maintained (such as maintenance of certain financial ratios). Because of these contractual conditions, there are a number of disclosure requirements under IFRS for these types of bank indebtedness. These will be discussed later in the chapter.

Note as well that another lender related current financial liability is the current portion of long-term debt. This represents the principal portion of a long-term liability that will be paid in the next reporting period, and will be covered in more detail in the long-term financial liabilities chapter.

Notes Payable

In the cash and receivables chapter, we discussed the accounting entries and calculations for short-term notes receivable. In the case of notes payable, the journal entries are a mirror of those, as we are simply taking the perspective of the other party in the transaction. In the example used in the cash and receivables chapter, the note was issued in exchange for the cancellation of an outstanding trade payable. As well, notes may sometimes be issued directly for loans received.

If we revisit the Ripple Stream Co. example from the cash and receivables chapter, the journal entries required by the debtor would be as follows:



The entry for payment of the note 90 days at maturity on June 12 would be:



If financial statements are prepared during the period of time that the note payable is outstanding, then interest will be accrued to the reporting date of the balance sheet. For example, if the company's year-end was April 30, then the entry to accrue interest from March 14 to April 30 would be:



When the cash payment occurs at maturity on June 12, the entry would be:



IFRS requires the use of the effective interest method for the amortization of zero interest notes and other financial instruments classified as loans and receivables. Thus, the journal entries from the perspective of the debtor for these different types of notes will simply be the reverse of those presented in the Cash and Receivables chapter. They will follow a similar pattern, as outlined above.

A video is available on the Lyryx web site. Click Here to view the video.

Customer Deposits

Businesses may sometimes require customers to pay deposits in advance of the delivery of the service or good for which it is contracted. These deposits serve a variety of purposes. A common example is a landlord requiring a security deposit that will be refundable at the end of the lease, if there is no damage to the property. If the property is damaged, then the deposit will be retained to cover the cost of repairs. Another type of deposit may be required for special order or custom designed goods. As the vendor may not be able to fully recover its costs on such contracts if the customer were to cancel, the deposit is required to ensure the commitment of the customer. As well, utility companies will often require deposits from customers to cover the cost of any unpaid balances that may arise if the customer were to move out of premises prior to receiving the final invoice.

Although the circumstances that create these deposits may be different, the accounting treatment still follows the same basic rules for classification described in Section 12.2. If the company expects the liability to be settled within the operating cycle, or if the company has no unconditional right to defer settlement beyond 12 months, then the liability would be classified as current. If these conditions are not true, then the liability would be classified as non-current. The individual conditions of the contract would need to be examined to determine the proper classification.

Sales Tax Payable

Many countries and tax jurisdictions levy sales taxes on the sale of certain products and services. These types of taxes are often referred to as value-added taxes (VAT) or goods and services taxes (GST). Although the tax rules in each jurisdiction will vary, the general approach to these types of taxes will be similar in any location. A sales tax collected by an entity on the sale of goods or services represents a liability, as the tax is being collected on behalf of the relevant government authority. To use a simple example, assume a company sells $500 of professional services to a customer in a jurisdiction that requires a sales tax of 10% be charged. The journal entry would look like this:



When the sales tax is remitted to the government authority, the sales tax payable account would be reduced accordingly. These liabilities will usually be classified as current, as the relevant government authority would normally require payment within a fairly short time period (usually monthly or quarterly).

When we look at this transaction above, we should also consider the accounting for the purchaser of the service. The treatment of the tax paid will depend on the rules in the relevant jurisdiction. If the sales tax is *refundable*, the payer can claim a credit for the amount paid. If the sales tax is *non-refundable*, then the payer simply absorbs this cost into the operations of the business.

Using the example above, the journal entries for the purchaser would be as follows:

Refundable Sales Tax Jurisdiction



Non-Refundable Sales Tax Jurisdiction



When the sales tax is non-refundable, it simply gets included in the relevant expense account. If the purchase were related to an inventory or a property, plant, and equipment item, then the tax would be included in the initial cost of acquisition for the asset. In some jurisdictions, it is possible that both refundable and non-refundable sales taxes will apply to a particular purchase. In those cases, the two tax amounts will need to be separated and treated accordingly.

Employee Payables

There are a number of current liabilities reported with respect to the employees of the business. Some of these liabilities will be discussed below.

Salaries and Wages Payable

Any amounts owing to employees for work performed up to the end of the accounting period need to be accrued and reported. For employees who are paid an hourly wage, the amount is simply determined by multiplying the hourly rate by the number of hours worked since the last pay date, up to the reporting date. For salaried employees, the calculation is usually performed by determining a daily or weekly rate and then applying that rate to the appropriate number of days. Consider the following example: an employee receives an annual salary of $60,000 and is paid every two weeks. The last pay period ended on May 26, and the company reports on a May 31 year-end. The amount of salary to accrue would be calculated as follows:

Annual salary	$	60,000
Bi-weekly salary (26 weeks)	$	2,307.69
Amount accrued, May 27–31 (5 days)	$	1,153.85

Note that when an employee is paid a bi-weekly salary, it is normally presumed that the work week is 5 days and that the pay period is 10 days (i.e., 2 work weeks). Thus, we accrue one-half of the regular bi-weekly pay in this example. The accrued amount would be reversed in the following accounting period when the next salary payment is made.

Payroll Deductions

Payroll deductions, also referred to as source deductions, are a common feature in most jurisdictions. Government authorities will often levy income taxes on employment income and will require the employer to deduct the required amount directly from the employee's pay. Thus, the amount is deducted at the source. The amount deducted by the employer represents a type of trust

arrangement, as the employer is agreeing to submit the funds to the government on behalf of the employee. As these deductions are required to be submitted in a timely manner to the relevant government authority, they are reported as current liabilities. Additionally, aside from income taxes, government authorities may require other deductions. In Canada, for example, most employees must also pay Canada Pension Plan and Employment Insurance premiums. For these types of deductions, the employer must submit a further amount, based on a proportion of the amount the employee pays. Thus, the company will report a liability greater than the amount deducted from the employee, with the difference, the employer's share, representing an expense for the company.

There are other types of deductions taken from employee's pay that are not the result of a government levy. Examples include these instances: employers may provide private pension plans that require monthly contributions, employees may belong to unions that require dues payments based on the level of earnings, employees may have extended health benefits that require payment, or employees may have to pay a monthly fee for parking. There are numerous examples of employee deductions, and the accounting treatment of these items will depend on their natures. If the item is deducted in trust for another party, then the company must report it as a liability. If the amount is not submitted to a third party, then the employer may report it as either a cost recovery or a revenue item. Calculations of various types of source deductions can become fairly complex and, as a result, most companies will employ staff with specialized training to take care of the accounting for payroll matters.

Paid Absences

Many employers allow their employees time off from work with pay. IAS 19 describes these kinds of arrangements as paid absences and classifies them into two types: accumulating and non-accumulating.

Accumulating paid absences are those that can be carried forward into a future accounting period if they are not fully used in the current period. An annual vacation entitlement is a common example of this type of paid absence. Employment law in many jurisdictions requires employers to give a certain amount of time off with pay each year to its employees. Employers may choose to grant more than the legally required minimum vacation time as a way to attract and retain high-quality employees. Because the employees earn the paid vacation time based on the time they work, an obligation and expense is created, even if the employees haven't taken the vacation. IAS 19 further distinguishes accumulating paid absences as being either vesting or non-vesting. Vesting benefits are those for which the employee is entitled to a payment upon termination of employment, while non-vesting benefits are those for which no such entitlement exists. In the case of paid vacation, the minimum legally required vacation time would be considered a vesting benefit, while any additional vacation granted by the employer may or may not be considered vesting, depending on the terms of the employment contract. IAS 19 requires that a liability be established for both vesting and non-vesting accumulating benefits. This means that the entity needs to make an estimate of the additional amount that needs to be paid at the end of the reporting period for the unused entitlement to accumulating paid absences. For those paid absences that are non-vesting, the entity would need to estimate the amount that won't be paid out due to employee termination. This could be done by examining past employee turnover patterns or other relevant data.

Consider the following example. Norstar Industries employs 100 people who are each paid $1,000 per week. By December 31, 2020, each employee has earned two weeks of vacation that are considered vesting and a further week of vacation that is considered non-vesting. Note that no vacation was taken by the employees during 2020. Based on past history, the company estimates that 5% of its employees will leave before taking their vacation, thus losing their entitlement to the non-vesting portion. As well, the company has budgeted for a 3% salary increase to take effect on January 1, 2021. The liability for vacation pay would be calculated as follows:

Vesting benefit:		=	$206,000
Non-vesting benefit:		=	97,850
Total obligation		=	$303,850

Note that the calculation is based on the pay rate that is expected to be in effect when the employees take their vacation. The total obligation would be reported as a current liability and an expense on the December 31, 2020 financial statements. In 2021, as the employees take their vacation, the liability would be reduced. If the estimates of employee terminations or salary increases were

incorrect, then the expense in 2021 would be adjusted to reflect the actual result. No adjustment to the previous year's accrual would be made.

Non-accumulating paid absences refer to those entitlements that are lost if they are not used. Sick days often fall into this category. Employees may be allowed a certain number of sick days per month or year, but these do not accumulate beyond the end of the relevant period. Additionally, employees are not entitled to a cash payment for unused amounts if their employment is terminated. Other common examples of non-accumulating paid absences include the following: parental leave (maternity, paternity, or adoption), leave for public service (e.g., jury duty), and some short-term disability leaves. In these cases, the company does not accrue any expense or liability until the absence actually occurs. This makes sense as it is not the employee's service that creates the obligation, but rather the event itself.

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Profit-Sharing and Bonus Plans

In addition to regular salary payments, companies often establish bonus plans for their employees. These plans may be made available to all employees, or there may be different schemes for different groups. The purpose of a bonus plan is to motivate employees to work toward the best interests of the company and of its shareholders. Bonus plans and profit-sharing arrangements are, therefore, intended to act as a method to relieve the agency theory problem that was discussed in the review chapter.

Bonuses will usually be based on some measurable target and often rely on accounting information for their calculation. A common example would be to pay out employee bonuses as a certain percentage of reported profit. The individual employee's entitlement to a bonus will be based on some measurable performance objective that should be determined and communicated at the start of the year. As bonuses are really just another form of employee remuneration, IAS 19 requires them to be accrued and expensed in the year of the employee's service, assuming they can be reasonably estimated. IAS 19 also notes that bonuses may result from both legal and constructive obligations. Thus, even though the company's employment contracts may not specify a bonus calculation, consistent past practices of paying bonuses may create a constructive obligation. The calculation used in the past would then form the basis for the current accrual. IAS 19 also requires accrual of the amount expected to be paid out for the bonuses. That is, if a bonus payment is only paid to employees who are still employed at the end of the year, the calculation of the accrued bonus will need to consider the number of employees who leave before the end of the year.

Consider the following example. A company with 25 employees has historically paid out a bonus each year of 5% of the pre-tax profit. The current year's pre-tax profit is $1,000,000. The bonus will be paid out two months after the year-end, but employees will only receive the bonus if they are still employed at that time. In prior years, the company has experienced, on average, the departure of two employees between the year-end and the bonus payment. Bonuses not paid to departed employees are retained by the company and not redistributed to the other employees. The amount to be accrued at year-end would be calculated as follows:

Total bonus:		=	$	50,000
Bonus per employee:		=	$	2,000
Actual bonus expected to be paid:		=	$	46,000

The company would then make the following journal entry at its year-end:



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13.4: Current Non-Financial Liabilities

As described in Section 12.2, non-financial liabilities are those liabilities that are settled through the delivery of something other than cash. Often, the liability will be settled by the delivery of goods or services in a future period. Examples include: unearned revenues, product warranties, and customer loyalty programs. For these types of liabilities, the determination of the amount to be settled, and the timing of the settlement, may not always be clear. However, because a present obligation exists, the liability must still be recorded. We will examine several examples of non-financial liabilities and consider the related measurement and accounting issues.

Unearned Revenues

One of the most common non-financial liabilities is unearned revenue. Unearned revenue results when a customer makes a payment in advance of receiving a good or a service. Examples include the following: prepayment for a magazine subscription, purchase of season tickets for a sports team, prepayment for airline flights that will be taken in the future, annual dues for a recreational club, prepaid maintenance contracts, and gift cards sold by retail stores. In these examples, the key feature is that the money is paid by the customer prior to receiving any goods or services from the vendor. Because the vendor has a performance obligation to provide these items in the future, the amount received must be recorded as a liability, usually described as unearned revenue. The unearned revenue should be reported at the fair value of the outstanding obligation and will be reclassified as revenue as the goods or services are provided. In most cases, the fair value will be equal to the cash received, as the transaction is normally presumed to be negotiated by arm's length parties and is not expected to extend far into the future, that is, no discounting is required. For unearned revenues resulting from the sale of gift cards by retail stores, an estimate will need to be made of the number of gift cards that will not be redeemed, as some customers will never use the cards and, therefore, the store will never deliver the goods or services. This estimate affects the fair value of the total obligation and can usually be determined by examining historical redemption patterns.

Consider the following example of a magazine subscription. *Motoring Monthly* sold 1,000 one-year subscriptions to its magazine in June 2020, and a further 2,000 one-year subscriptions in September 2020. The magazine is published monthly, and the price of a one-year subscription is $40. Delivery of the magazines commences in the month following payment. The following journal entries would be recorded in 2020:



The entry above records the initial payment of the first group of subscriptions.



The entry above recognizes one month of subscription revenue and would be repeated for the months starting August 2020 to June 2021, when the subscription expires.



The entry above records the initial payment of the second group of subscriptions.



The entry above recognizes one month of subscription revenue and would be repeated for the months starting November 2020 to September 2021, when the subscription expires.

To summarize, the company will report the following amount as a current liability on its balance sheet as at December 31, 2020:

Unearned subscription revenue		$	80,000
( )			

The company will also report the following amount as revenue on its income statement for the year ended December 31, 2020:

Subscription revenue		$	40,000
( )			

On the income statement, the company would also report the costs to produce and distribute the magazine to properly convey the gross margin earned on the sales.

Product Warranties

As a way to promote sales and develop customer loyalty, many businesses will offer a warranty on their products. A warranty will obligate the company to repair the product if it doesn't function correctly, or replace it if it cannot be fixed. While there are many limitations to warranty arrangements, including time limits, the contract with the customer does obligate the company to deliver the goods or services in the future, assuming the requisite conditions have been met. If the warranty arrangement does not meet definition of a distinct service under IFRS 15, a separate performance obligation is not created. In this case, the warranty will be accounted for as a provision under IAS 37 and a result, the company will required to recognize this obligation as a liability on the balance sheet. As before, the obligation should be reported at its fair value. This approach, sometimes referred to as the *expense approach*, will be discussed further in Section 12.5. In some cases, the value of the warranty may be explicitly stated, as is the case with extended warranties that require separate payment from the product itself, such as those sold by automobile retailers. In other cases, however, the price of the warranty may be implicitly included with the total sale price of the product. This is essentially a bundled sale, which was discussed previously in the revenue chapter. If you recall the treatment of bundled sales, the value of each component should be determined using the relative stand-alone selling prices of those components, and then recorded as revenue or unearned revenue as appropriate. This approach is often referred to as the *revenue approach*.

Consider the following example. Calvino Cars manufactures and sells new automobiles. Included with every sale is a two-year comprehensive warranty that will cover the cost of any repairs due to mechanical failure. The company recently sold a unit of its most popular model, the Cosimo, for $30,000. This price includes the two-year warranty. Based on analysis of similar arrangements at other car companies that sell separate warranties, Calvino Cars estimates that the stand-alone selling price of this warranty is $1,500. The company has also estimated that 25% of the cost of warranty repairs will be incurred in the first year of the warranty term and 75% in the second year. The journal entry at the time of sale would be:

In the first year, repair costs of $304 are actually incurred for this vehicle. Two journal entries are required in this case:

The first journal entry recognizes the revenue from the warranty, based on the expected pattern of costs to service the warranty. The second journal entry records the actual costs of the repairs made. In the second year, the remaining revenue ( ) will be recognized and any repair costs incurred will be recorded in a similar fashion. If, after the first year, it is estimated that

future repair costs would exceed the remaining unearned revenue, then an additional liability would need to be established. This is referred to as an *onerous contract*, a concept that will be discussed later in the chapter.

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Customer Loyalty Programs

As a method of encouraging repeat business and customer loyalty, many companies offer loyalty rewards. Often denominated in points, they can be redeemed later for additional goods or services. For example, many grocery and other retail stores allow customers to collect points that can be applied against future purchases. Also, airlines quite often encourage their passengers to collect travel miles that can be applied to future flights. Because there is the potential for an obligation to deliver goods or services in the future, these loyalty rewards need to be accounted for as a contract liability.

The general principles of IFRS 15 are applied in these cases, which results in the loyalty reward being considered a separate performance obligation of the sales transaction. It is quite likely that an active market for the loyalty points does not exist, so some type of estimation technique is required to determine the stand-alone selling price of the rewards. IFRS 15 suggests that the estimate of the stand-alone selling price of the loyalty points should reflect the discount the customer is expected to obtain by using the points, adjusted for:

- the discounts that could otherwise be received by customers without using the loyalty points; and
- the likelihood that the loyalty points will used

Obviously there is some judgment required in making these fair value determinations. Let's look at an example involving a premium car wash. Sudz offers car wash and detailing services for all types of passenger vehicles. To encourage repeat business, the company awards points for each car wash, which can be redeemed in the future for additional car washes or for upgraded services, such as glass repair and scratch buffing. In 2020, the company earned $2,000,000 in revenue from car washes and awarded 10,000 points. The stand-alone selling price of the car washes is $2,000,000. Based on an examination of the awards chosen by customers in the past, the company has estimated the stand-alone selling price of the points awarded at $12,150. As well, the company expects that 10% of the award points will never be redeemed. In 2021, 7,000 points are redeemed and in 2022, 2,000 points are redeemed. The journal entries to record these transactions are as follows:



Notes:

a. Revenue on sale allocated based on relative, stand-alone selling prices:

Car washes = = $1,987,923
Loyalty points = = $12,077

b. To determine the loyalty point revenue earned in 2021, we must first determine the value of a single loyalty point:

= $1.3419 per point
Thus, revenue earned in 2021 = = $9,393

c. Revenue earned in 2022 = = $2,684

Note that the value per point is based on the total unearned revenue divided by the number of points expected to be redeemed, rather than the total number of points awarded. If the estimates turn out to be incorrect, the revenue will simply be adjusted prospectively in the current year.

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13.5: Provisions and Contingencies

IAS 37 deals specifically with provisions, contingent liabilities, and contingent assets. The standard defines a *provision* as a "liability of uncertain timing or amount" (CPA Canada, 2016, IAS 37.10). These uncertainties can create problems for accountants, as the questions of whether the item should be recorded, and what amount should be used if it is recorded, do not always have clear answers. In this section we will examine the general criteria to be used in evaluating provisions and contingencies, and we will look at two specific examples: product warranties and decommissioning costs.

The key feature of the definition of a provision is the existence of uncertainty. The standard distinguishes provisions from other current liabilities, such as trade payables and accruals, on the basis of this uncertainty. In comparison, there is no uncertainty regarding trade payables, as these are usually supported by an invoice with a due date. Even an accrual for a monthly utility expense does not contain sufficient uncertainty to be classified as a provision, as this amount can normally be estimated fairly accurately through examination of past utility bills. Although there is some uncertainty in this process of estimation, the uncertainty is far less than in the case of a provision. It is for this reason that IAS 37 requires separate disclosure of provisions, but not regular accruals.

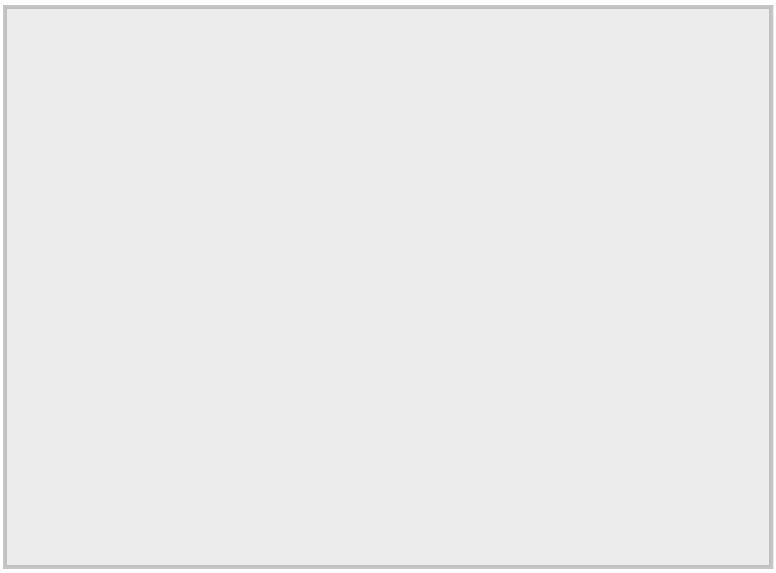
The standard also defines a contingent liability as:

a. a possible obligation that arises from past events and whose 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; or
b. a present obligation that arises from past events but is not recognized because:
    i. It is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation; or
    ii. The amount of the obligation cannot be measured with sufficient reliability. (CPA Canada, 2016, IAS 37.10).

A careful reading of this definition will lead us to the conclusion that a contingent liability does not meet the general definition of a liability. The obligation may not be present due to the uncertainty of future events, or the uncertainty may make it impossible to determine if or how many economic resources will be outflowing in the future. For these reasons, the standard does not allow contingent liabilities to be recognized. A common example of a contingent liability would be a legal action taken against the company where the outcome cannot yet be predicted. The court's decision to be rendered is the uncertain future event that is not within the entity's control. However, in some cases, the company's legal counsel may conclude that the decision is fairly certain based on the facts, in which case, recognition of a provision may be warranted. Significant judgment may be required in evaluating the correct accounting treatment of these situations. Contingent assets, which are also defined in relation to an uncertain future event, are also not recognized under the standard. However, there are disclosure requirements for contingent assets and liabilities, which will be discussed later. If an inflow of economic resources were *virtually certain*, however, then the asset would be recognized, as it is no longer considered contingent. The standard doesn't define virtual certainty, but in practice it has come to mean a very high level of probability, usually greater than 95%.

In assessing whether an outflow of resources is *probable*, the standard defines this term as meaning that the event is more likely than not to occur. In mathematical terms, this would mean that the event has a greater than 50% probability of occurring. The standard also states that no disclosure is required if the probability of the outflow of resources is remote. This term is not defined in the standard. In practice, when making this determination most professional accountants will use a guideline of 5–10% maximum probability.

We can think of the guidance offered by IAS 37 in terms of a decision tree:



Product Warranties

In Section 12.4, we looked at an example where the warranty contract was considered part of a bundled sale and the warranty revenue was recognized separately. In some cases, the warranty is not considered a separate performance obligation. In these cases, the warranty revenue would be recognized immediately as part of the total sale. However, this creates an accounting problem, as there are still potential future costs that will be incurred in servicing the warranty. In this situation, a provision needs to be established for those future warranty costs. This provision will help by reporting the expense in the same period as the related revenue. Let's return to our example of Calvino Cars, but this time we will assume that the warranty does not represent a separate performance obligation. As before, the company estimates that 25% of the warranty repair costs will be incurred in the first year, and 75% in the second year. As well, based on prior experience with this car model, the company has estimated that the total cost of repairs for the warranty term will be $1,100. The journal entries that would be recorded at the time of sale would be:





In the first year, repair costs of $304 are actually incurred for this vehicle. The journal entry required in this case is:



At the end of the first year, the company will report a current liability of $796 (), which represents the unused portion of the warranty provision. If the warranty period extended beyond the end of the next operating cycle, then the provision would need to be separated into current and long-term portions. As it is possible that the actual warranty costs will not be the same as the predicted costs, an additional adjustment to profit or loss will be required when the warranty term expires in order to reduce the provision to zero.

One question the accountant will need to face is how to estimate the future warranty costs. IAS 37 suggests that the obligation should be reported at the value that the entity would rationally pay to settle it at the end of the reporting period. This requires some judgment; however, the standard does supply some guidance on how to estimate this amount. When the population being estimated contains a large number of items, such as a warranty plan, the accountant should use the *expected value* method to determine the amount. This method looks at all the possible outcomes and applies a probability weighting to each. For example, if Calvino Cars were to determine the warranty obligation for all of the cars it sells, it may use the following calculation. If all of the cars sold were to contain minor defects, then the total cost to repair these defects would be $8,000,000. If all of the cars sold were to contain major

defects, then the total repair costs would be $30,000,000. Based on experience and engineering studies, the company has determined that 80% of the cars it sells will have no defects, 17% will have minor defects, and 3% will have major defects. The warranty provision would then be calculated as follows: .

The standard also suggests that when estimating a provision for a single item, the most likely outcome should be used. However, if the range of possible outcomes is not evenly distributed, it may be appropriate to accrue a provision that takes this skewed distribution into account. In making these judgments, the accountant will need to be aware that the subjective nature of these estimates may lead to earnings management or other attempts to manipulate the result. As always, the integrity of the reported amounts depends on the accountant's skillful and professional application of the standard.

Decommissioning Costs

In the Property, Plant, and Equipment chpater, we briefly discussed the accounting treatment of decommissioning and site restoration costs. The general approach is to capitalize these costs as part of the asset's carrying value and report an obligation, sometimes referred to as an *asset retirement obligation*. This obligation represents a provision and is covered by IAS 37.

The requirement to clean up and restore an industrial site often results from regulation. In order to obtain permission to operate a business that alters the natural condition of an area, a government authority may include restrictions in the operating license that require the restoration of the site, once the industrial activity is concluded. Common examples include: mineral extraction operations, oilfield drilling, nuclear power plants, gas stations, and any other businesses that might result in contamination of water or soil. In addition to the regulatory requirement, IAS 37 also considers the *constructive obligation* that may exist as a result of the company's own actions. If a company has a publicly stated policy or past practice of restoring industrial sites to a condition beyond the requirements of legislation, then the company is creating an expectation of similar future performance. As a result, the amount of the obligation will need to include the costs required to meet the constructive, as well as the legal, obligations.

Let's look at an example. Icarus Aviation Ltd. has just purchased a small, existing airport that provides local commuter flights to downtown businesses in Edwardston. Although the airport is already 50 years old, the company believes that it can still operate profitably for another 20 years until it is replaced by a newer airport, at which time the land will be sold for residential development. To obtain the operating license from the local government, the company had to agree to decontaminate the site before selling it. It is expected that this process will cost $10,000,000 in 20 years' time as the site is heavily polluted with aviation fuel, de-icing solutions, and other chemicals. Also, the company has publicly stated that, when the airport is sold, part of the land will be converted into a public park and returned to the city. It is estimated that the park will cost an additional $2,000,000. As the company has both legal and constructive obligations, the total site restoration costs of $12,000,000 need to be recorded as an obligation. Because the costs are to be incurred in the future, the obligation should be reported at its present value. IAS 37 requires the use of a discount rate that reflects current market conditions and the risks specific to the liability. If we assume a 10% discount rate in this case, the present value of the $12,000,000 obligation is $1,783,724.

At the time of the acquisition of the property, the following journal entry is required:

As the site restoration cost is included in the property, plant, and equipment balance, it needs to be depreciated each year. Assuming straight-line depreciation, the following journal entry would be required each year:

Additionally, interest on the obligation needs to be recorded. This will be calculated based on the carrying amount of the obligation each year. For the first two years, the journal entries will be:

The interest expense will increase each year as the obligation increases. At the end of 20 years, the balance in the obligation account will be $12,000,000. Over the 20-year period, the total amount expensed (interest plus depreciation) will also equal $12,000,000. Thus, the cost of the site restoration will have been matched to the accounting periods in which the asset was used.

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13.6: Commitments and Guarantees

We have seen in our previous discussions that IFRS requires recognition of assets and liabilities when certain criteria have been met. In many business transactions, companies will enter into contracts that commit them to future actions. If neither party has executed any part of these contracts at the reporting date, then we would normally not recognize any asset or liability. However, because the contract will require future actions by both parties, there is a justification for disclosure, as financial statement readers are interested in the future profits and cash flows of the business. As such, there are disclosure requirements for certain types of commitments, and, in some cases, there are even recognition criteria.

An unexecuted contract to purchase property, plant, and equipment is a common commitment that requires disclosures. Even if the contract has not yet been fully executed, IAS 16.74 requires disclosure of the commitment. As PPE expenditures are often irregular and material, this disclosure helps the financial statement reader understand the potentially significant effect of the contract on future cash flows.

We previously discussed the concept of an *onerous contract*. This is a contract for which the unavoidable future costs of the contract exceed the economic benefits that are expected. This result is clearly not what the entity originally intended when it entered into the contract, but circumstances can change and can result in contracts turning into unprofitable ventures. In determining the unavoidable future costs, the entity should use the least net cost of exiting the contract, which may be either the cost of fulfilling the contract or the payment of penalties under the contract for non-performance. When an onerous contract exists, IAS 37.66 requires the entity to recognize a liability for the amount of the obligation.

Consider the following example. Rapid Rice Inc., a wholesale distributor of bulk rice to food manufacturers, has entered into a contract to purchase 1,000,000 kg of rice at $0.40 per kilogram. The company intends to resell the rice to its customers at $0.50 per kilogram. If Rapid Rice Inc. cancels the purchase contract before it is fulfilled, it must pay a penalty of 30% of the total contract value. One month after the contract is signed, but before any rice is delivered, the vendor reduces the price of rice to $0.30 per kilogram, due to weak market conditions. Also as a result of these weak market conditions, Rapid Rice Inc. is forced to reduce the price it charges its customers to $0.37 per kilogram. Rapid Rice Inc. has the choice of fulfilling the contract and selling at the adjusted price to its customers, or cancelling the contract and purchasing at the current price to fill its orders. The following analysis is required to determine if this is an onerous contract:

		Fulfill			Cancel	
		Contract			Contract	
Expected benefit ( )		$	370,000		$	370,000
Unavoidable costs ( )		$	400,000			
or)					$	300,000
Penalty					$	120,000
Net Cost		$	(30,000)		$	(50,000)

A third option would be to simply cancel the contract and not purchase any rice, but this would result in a net cost of $120,000 (i.e., the penalty). Since all options result in a loss, this is an onerous contract. The least costly option is to fulfill the contract. The company will then need to record a provision as follows:



A guarantee is a special type of commitment that requires some type of future performance or payment if another party defaults on an obligation. This type of arrangement often occurs when two or more companies are under common control. A parent company may guarantee the bank debt of a subsidiary company. Although the subsidiary company is the debtor, the guarantee provides additional security to the bank should a default occur. IAS 39 requires such financial guarantees to be measured initially at the fair value of the guarantee. Subsequently, the guarantee will be measured at the higher of the best estimate to settle the obligation and the unamortized premium received by the guarantor. (It is common for the guarantor to receive a fee for its guarantee.) A discussion of the measurement of these amounts is beyond the scope of this text. However, it is important to know that, aside from the measurement issues, there are significant disclosure requirements for guarantees as these arrangements do have the potential to significantly affect future cash flows.

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13.7: Presentation and Disclosure

The topics discussed in this chapter are encompassed by a number of different IFRSes. As a result, there are a significant number of different disclosure requirements regarding current liabilities, contingent liabilities, provisions, and guarantees. A guiding principle that companies should follow when disclosing current liabilities is that there should be sufficient information to allow the reader to identify the current requirement for cash. This means that sufficient detail needs to be provided about major types of current liabilities, including amounts owing to related parties and amounts secured by assets of the company. As well, there are further detailed disclosure requirements for contingencies, commitments, and guarantees.

IAS 1 (Presentation of Financial Statements) does not specify the order in which current liabilities should be presented or where on the balance sheet they should be presented. The standard allows for different formats of presentation as long as information disclosed is sufficient for the reader to understand the nature and function of the items, and their impact on the financial position of the company. As a result, an examination of several companies reporting under IFRS will reveal different orders of presentation and different levels of aggregation.

Consider the following two examples, adapted from the balance sheets of a multinational energy company, and an international chain of grocery stores and hypermarkets. The energy company presents its current liabilities as the first section in the liabilities and equity section of the balance sheet, while the grocery chain presents its current liabilities as the last section. The order of presentation within the classification is different for each company as well. The grocery chain presents bank debt, or short-term borrowings, first, while the energy company presents trade and other payables first. These two examples provide typical disclosures

of current liabilities under IFRS, and demonstrate that a variety of formats are allowable, as long as sufficient and meaningful information is disclosed.

Grocery Chain	NOTE		2021		2020
Short-term borrowings	28		2,106		2,251
Suppliers and other creditors	29		12,502		15,444
Short term consumer credit	33		3,211		4,165
Income tax payable			1,075		1,158
Other payables	31		2,613		2,948
Liabilities for assets held-for-sale			256		–
Total current liabilities			21,763		25,966

Energy Company	NOTE		2021		2020
Current liabilities					
Trade and other payables	21		45,112		44,251
Derivative financial instruments	23		2,165		2,799
Accruals			8,498		6,284
Finance debt	24		7,155		10,147
Current income tax payable			1,813		2,567
Provisions	26		5,163		7,616
			69,906		73,664
Liabilities related to assets held-for-sale	6		–		913
			69,906		74,577

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13.8: Analysis

From our previous discussion in the cash and receivables chapter, recall that one way to evaluate a company's liquidity is to calculate the quick ratio. This ratio relates the company's highly liquid assets ("quick" assets) to its current liabilities. This is an important measure because a company's credit rating and reputation can suffer if it cannot pay its current obligations when they come due. Recall from revenue chapter that our analysis of Best Coffee and Donuts Inc. revealed a quick ratio of 0.45 in 2021. Ratios in isolation are not particularly meaningful as they need to be compared to a benchmark. However, in this case, a quick ratio of 0.45 is not to be viewed as a positive result, as it implies that the company does not have enough highly liquid assets to cover its currently maturing obligations.

Another measure that can be used to evaluate liquidity is the days' payables outstanding ratio. This ratio is the mirror image of the days' sales uncollected ratio calculated previously. The days' payables outstanding ratio measures how long it takes the company to pay its outstanding payables. The ratio is calculated using the following formula:

Purchases on credit is usually not separately disclosed on the financial statements. Often, the cost of sales figure can be used as an estimate of this amount. However, the individual characteristics of the company would need to be examined to determine if this is a reasonable assumption. If we assume that Best Coffee and Donuts Inc.'s cost of sales in 2021 is $1,594,739, then the ratio is calculated as follows:

Although it is difficult to make any conclusive statement, this calculation shows that the company has been paying its outstanding payables somewhat slowly. To be fully meaningful, we would need to know the creditors' normal credit terms and industry averages, and we would want to calculate the trend over several years. However, it is common for many creditors to allow 30 days for payment, so it would appear that Best Coffee and Donuts Inc. is exceeding these terms. Further analysis is needed to determine why this is happening, and whether this is damaging the company's relationship with its creditors.

For ratio analysis to be meaningful, a deeper understanding of the business is required. Best Coffee and Donuts Inc. primarily sells fast food and settles most of its transactions in cash or near cash (i.e., debit and credit cards). In this industry, inventory items would be converted fairly quickly to cash, as perishable items cannot be held for long periods of time. Thus, although the quick ratio appears low, this may not be a serious problem due to the rapid conversion of inventory to cash. However, the fact that the company has been paying its accounts payable slowly may indicate a problem. It is important to consider broader data, including historical trend analysis and industry averages, before drawing further conclusions, though.

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13.9: IFRS/ASPE Key Differences

IFRS	ASPE
Contingent assets and liabilities are not recognized because they do not meet the recognition criteria.	Contingent losses are recognized when it is likely that a future event will confirm the existence of a liability and the amount can be reasonably estimated. Contingent gains are not accrued.
A provision is a liability of uncertain timing or amount. It is accrued when the future outflow of economic resources is probable and a reliable estimate can be made. Although not defined, "probable" is usually interpreted as being greater than a 50% probability.	Contingent losses that are "likely" are accrued. A "likely" event is defined as one whose probability of occurrence, or non-occurrence, is "high." This is usually interpreted as being a higher level of probability than the equivalent IFRS condition.
Provisions are accrued based on the expected value approach, which assigns probabilities to each possible outcome.	Where a range of possible outcomes exist, the amount accrued will be the most likely amount in the range. If no amount is more likely than another, then the lowest amount of the range is accrued.
IFRS 15 provides specific guidance on customer loyalty programs.	ASPE does not contain specific guidance on customer loyalty programs.
Both legal and constructive obligations for decommissioning costs are recognized.	Only legal obligations are recognized as asset retirement obligations.
Decommissioning costs related to the asset are recognized as part of property, plant, and equipment. Decommissioning costs related to subsequent production are included in inventory.	All costs, both capital and production, are included in property, plant, and equipment.
Disclosure requirements are detailed, and are included in IAS 1, 19, 32, 37, 39, IFRS 7, and IFRS 15.	Disclosure requirements are less detailed. Disclosure requirements are included in sections 1510, 3110, 3280, 3290, 3856, and AcG 14.

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13.10: Chapter Summary

LO 1: Define *current liabilities* and account for various types of current liabilities.

A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits. A current liability is one that is expected to be settled within the normal operating cycle, or within 12 months, of the balance sheet date. A liability may also be current if it is held for trading, or if the company does not have the unconditional right to defer settlement beyond one year. Common current liabilities include accounts payable, lines of credit, notes payable, customer deposits, and sales tax payable.

LO 2: Differentiate between financial and non-financial current liabilities.

A financial liability is a contractual obligation to deliver cash or another financial asset to another entity, or to exchange financial assets or liabilities under conditions that are unfavourable to the entity. Non-financial liabilities are those that do not meet this definition.

LO 3: Explain the accounting treatment of different types of current, financial liabilities.

With accounts payable, an important accounting procedure is ensuring that the liability is reported in the correct period. Lines of credit usually require a formal agreement with a lender and, as such, certain disclosures will be required. Notes payable should be accounted for using the effective interest method. The conditions of individual contracts with customers need to be examined carefully to determine the correct classification of deposits received. Sales tax collected on behalf of a government agency represents a liability, but the liability may be offset for sales tax paid in certain cases. Employee-related liabilities can include salaries and wages payable, payroll deductions, paid absences, profit-sharing, and bonus plans. For paid absences, IAS 19 distinguishes between accumulating and non-accumulating absences, and only requires accrual of accumulating amounts.

LO4: Explain the accounting treatment of different types of current, non-financial liabilities.

Unearned revenues represent an obligation to provide goods or services in the future to customers. Unearned revenues are reported as liabilities until such time as they are recognized as revenues, that is, when the goods or services are provided. Unearned revenues should be reported at their fair values, and are normally not discounted. A product warranty is a promise to provide future repairs or replacement if a product has defects. The preferred accounting approach is to treat this as a bundled sale and recognize the warranty component as unearned revenue. The revenue will then be recognized over the term of the warranty, matched against the actual expenses incurred to service the warranty. If the warranty does not represent a separate performance obligation, then the liability for future repairs is treated as a provision. A customer loyalty program represents a separate component of revenue that should be reported at its fair value and deferred as appropriate. Estimation will likely be required to determine the fair value.

LO 5: Discuss the nature of provisions and contingencies and identify the appropriate accounting treatment for these.

A provision is a liability of uncertain timing or amount. A provision will be accrued when the future outflow of resources is probable and the amount can be reliably measured. If one of these conditions is not present, then no amount is accrued but disclosure is required (except when the probability is remote). When the revenue portion of a product warranty cannot be determined, a provision for future expected warranty expenditures is required. The provision will be based on the expected value of the obligation, and will be accrued at the time of sale of the product. As warranty costs are incurred, the provision will be reduced. A provision for decommissioning costs needs to be accrued based on the legal and constructive obligations of the company (only the legal obligation under ASPE). As the costs may be incurred far into the future, discounting of the obligation is appropriate. The value of the initial obligation will be added to the cost of the relevant asset. Every year, interest calculated will be added to the balance of the obligation. Each year the asset will be depreciated and the interest expense recorded. At the end of the asset's life, the balance of the obligation will equal the amount estimated to complete the decommissioning.

LO 6: Discuss the nature of commitments and guarantees and identify the appropriate accounting disclosure for these items.

A commitment represents a future action to be taken by the company under an unexecuted contract. Commitments are not normally accrued, as no part of the contract has yet been executed. However, if they are material, commitments should be disclosed because

they do represent a potential effect on future cash flows. If a contractual commitment becomes onerous, the least amount required to execute or withdraw from the contract should be accrued, as this future expenditure cannot be avoided.

Guarantees represent possible future outflows of resources on behalf of another party. Guarantees are initially measured and recorded at their fair value, and are subsequently recorded at the greater of the amount required to settle the obligation and the unamortized premium.

LO 7: Describe the presentation and disclosure requirements for various types of current liabilities.

As current liabilities have a direct impact on immediate cash flows, significant disclosure requirements are detailed in several sections of the IFRSes. The standards do not specify the precise format of current liability disclosure on the balance sheet, so companies have adopted a variety of practices regarding the order of presentation and terminology used.

LO 8: Use ratio analysis of current liabilities to supplement the overall evaluation of a company's liquidity.

The days' payables outstanding ratio can be used in conjunction with the current and quick ratios to draw some conclusions about a company's liquidity. However, a broader understanding of the nature of the business, industry standards, historical trends, and other factors is required to draw proper conclusions.

LO 9: Identify differences in the accounting treatment of current liabilities between IFRS and ASPE.

There are some differences between IFRS and ASPE with respect to contingencies and provisions, customer loyalty programs, and decommissioning costs. ASPE disclosure requirements are less detailed than IFRS requirements.

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13.11: References

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13.12: Exercises

13.1

For each of the following items, identify whether it should be reported as a current liability (CL), a non-current liability (NCL), both a current and non-current liability, or not recorded at all.

a. A bank overdraft
b. Refundable sales tax collected on sales
c. Accounts payable
d. Accrued vacation pay
e. A bank loan with a five-year term that requires monthly payments
f. A commitment under a purchase contract that is not onerous
g. Unearned revenue
h. Decommissioning costs
i. A claim against the company filed under a lawsuit
j. Income taxes payable
k. Unremitted payroll deductions
l. A five-year warranty on the sale of an automobile
m. Notes payable
n. A deposit received from a customer
o. Loyalty points awarded by a hotel chain

13.2

On October 5, Bendel Ltd. renegotiated the terms of an $8,000 outstanding account payable with a supplier. The supplier agreed to replace the outstanding amount with a 120-day, 9% note. Bendel Ltd. has a December 31 year-end.

Required:

a. Prepare the journal entry made by Bendel Ltd. on October 5.
b. Prepare any journal entries required by Bendel Ltd. on December 31.
c. Prepare the journal entry required by Bendel Ltd. on the note's maturity date.

13.3

Baldwin Inc. operates in a jurisdiction that levies two types of sales taxes: a federal, 6%, refundable goods and services tax and a provincial, 4% non-refundable sales tax. Both taxes are calculated on the base cost of the item, that is, there is no tax on the tax, and apply to all transactions. During the current year, the following transactions occurred:

a. Inventory was purchased on account at a cost of $10,000, plus applicable taxes.
b. Equipment was purchased for cash at a cost of $3,000, plus applicable taxes.
c. Sales on account were made for proceeds of $16,000 plus applicable taxes.
d. Cash sales were made for proceeds of $5,000 plus applicable taxes.
e. At the end of the year, the net amounts of all sales taxes owing were remitted to the federal and provincial government authorities.

Required: Prepare journal entries to record the transactions detailed above.

13.4

Mandler Inc.'s payroll clerk unexpectedly quit on December 24, one week before the end of the fiscal year. At that time, employees had not been paid for the most recent pay period. Management issued total cash advances of $50,000 to the employees until payroll

could be properly prepared. These advances were recorded in the Employee receivable account. In early January, the company hired a new payroll clerk who determined the following:

Gross employee pay, December 10 – 24	$	73,000
Income tax withheld from employees	$	19,000
Government pension withheld from employees	$	1,000
Additional government pension to be paid by employer	$	1,200

The new payroll clerk also determined that no year-end accrual had been made for the payroll from December 25 to 31. The clerk has determined that the pay for this period should be accrued at the same rate as the previous pay period.

Required:

a. Record the journal entry to correct the December 24 payroll amounts.
b. Record the journal entry to accrue the payroll amount from December 25 to 31.

13.5

Wightman WaxWorks Ltd. offers repair and maintenance services for premium turntables and other audio equipment. Service contracts may be purchased for one, two, or three years. Prices are $120 for a one-year contract, $200 for a two-year contract, and $280 for a three-year contract. All contract fees must be paid at the start of the term. In 2021, three sales promotion events occurred that generated sales in the following months:

	January 2021	**July 2021**	**December 2021**
One-year subscription	17	18	12
Two-year subscription	24	20	30
Three-year subscription	30	22	36

Service begins immediately in the month of purchase. No amount of the service contract is refundable.

Required:

a. Determine the amount of revenue recognized in the year ended December 31, 2021.
b. Determine the amount of deferred revenue reported as a current liability at December 31, 2021.
c. Determine the amount of deferred revenue reported as a non-current liability at December 31, 2021.

13.6

Wilder Watersports Inc. sells luxury yachts and related equipment. The sale price of each yacht includes a three-year comprehensive warranty that covers all repairs and maintenance for the period. Each yacht sells for $3,000,000. A review of competitor pricing indicates that a similar warranty, if sold separately, would be valued at $10,000. On January 1, 2021, Wilder Watersports Inc. sold seven yachts. Repair costs actually incurred for these yachts were as follows:

Year ended December 31, 2021		$12,000
Year ended December 31, 2022		$30,000
Year ended December 31, 2023		$35,000

Required:

a. Prepare all the necessary journal entries for 2021, 2022, and 2023 to reflect the above transactions.
b. Calculate the amount of unearned revenue to be reported at December 31, 2022.

13.7

Lofft Furniture Mfg. currently employs 10 people on its assembly line, each of whom earn $160 per day. Each employee is entitled to 15 days of vacation per year and one sick day per month. Vacation days accumulate each month, but cannot be taken until after the end of the current year. Sick days do not accumulate, and if they are not taken in a given month they are forfeited. The company is planning to give a 3% raise to its employees in the next fiscal year. The 10 employees worked for the entire year and took a total of 96 sick days. No vacation was taken during the year.

Required:

a. Prepare the journal entries for the current year with respect to the vacation and sick pay.
b. Calculate the amount of liability to be reported at the end of the current year with respect to the vacation pay and sick pay.

13.8

Sarkissian Specialties sells premium gelato from a portable trailer located in a busy public park. To promote sales, the business has created a loyalty program. If a customer buys nine cups of gelato, the tenth cup will be free. Each cup of gelato sells for $2.70. In 2020, the business sold 36,000 cups of gelato and redeemed 1,000 free cups. The business expects that another 1,000 free cups will be redeemed in the future. They also expect that any remaining free cups will be forfeited as the loyalty card expires one year after the first purchase, and past experience has indicated that only approximately 50% of the customers redeem their free cup.

Required:

a. Prepare the journal entries for the current year with respect to the sales and loyalty program.
b. Calculate the amount of liability to be reported at the end of the current year with respect to the loyalty program.

13.9

Lupinetti Industries Ltd. has begun manufacturing a specialized cardiopulmonary bypass machine used to maintain the respiration and blood flow of patients during open-heart surgery. The company expects to continue manufacturing this machine for another 10 years, until such time that competitive products render the current technology obsolete. The company has agreed to vacate its current factory in 10 years' time. The local government granted the land for the facility on the condition that it will be returned to its original state when vacated. The company has also agreed to build a public park on the site once the remediation is complete. The company has estimated that the total cost of the site remediation to be $3 million and the cost of constructing the park to be $500,000. The interest rate appropriate for this type liability is 11%.

Required:

a. Prepare the journal entry to initially record the decommissioning cost.
b. Prepare the journal entries required for the first two years after the initial recognition of the decommissioning cost.

13.10

Braden Bonnet Technologies manufactures sewing and pressing machines that are used in the manufacture of felt hats. Each machine sold includes a three-year limited warranty that guarantees repairs if the machine should fail. The warranty is an integral part of the sale price and is not considered a separate performance obligation. In 2021, 3,000 machines were sold at a price of $11,000 each. Based on past experience, the company has estimated that the expected value of the warranty repairs will be $600 per machine. Actual repair costs on the machines sold in 2021 were incurred as follows:

Year	Costs Incurred
2021	$975,000
2022	$345,000
2023	$425,000

Required:

a. Prepare all the journal entries to record the sale and warranty transactions for 2021 to 2023.
b. Determine the warranty liability balance that will be reported at each year-end from 2021 to 2023.

13.11

Kercher Imports Inc. purchases large quantities of precious minerals in Asia that are then resold to various European end-use customers. The company has recently entered into a contract to purchase 10,000 grams of a particular mineral at a price of $50 per gram. The company intends to resell the mineral to its customers at $90 per gram. Soon after the contract was signed, the civil war in the mineral's source country ended and a stable government was installed. This result calmed the markets, and the spot price for the mineral dropped to $31 per gram. Kercher Imports Inc. examined the contract and determined that to exit the arrangement early would result in a penalty of $75,000. As a result of the change in the market price, Kercher Imports Inc. can now only sell the product to its end-users at $45 per gram.

Required:

a. Determine if this is an onerous contract. Prepare the journal entry required to report this contract.
b. Repeat part (a) assuming that the penalty for contract cancellation is $150,000 instead of $75,000.

13.12

The financial statements for Stuewe Enterprises Ltd. are presented below:

Stuewe Enterprises Ltd.						
Balance Sheet						
As at December 31, 2021						
		2021			2020	
Current Assets						
Cash		$	35,000		$	56,000
Accounts receivable			175,000			150,000
Inventory			113,000			88,000
			323,000			294,000
Property, plant and equipment			475,000			510,000
		$	798,000		$	804,000
Current Liabilities						
Accounts payable		$	229,000		$	201,000
Current portion of long-term debt			55,000			60,000
			284,000			261,000
Long-term debt			216,000			270,000
			500,000			531,000
Equity						
Share capital			10,000			10,000
Retained earnings			288,000			263,000
			298,000			273,000
		$	798,000		$	804,000

Stuewe Enterprises Ltd.						
Income Statement						
For the Year Ended December 31, 2021						
		2021			2020	

Sales		$	975,000		$	950,000
Cost of goods sold			595,000			610,000
Gross profit			380,000			340,000
Operating expenses			275,000			195,000
Income before tax			105,000			145,000
Income tax			21,000			30,000
Net income		$	84,000		$	115,000

Required:

a. Calculate the current ratio, quick ratio, days' sales uncollected, and days' payable outstanding ratios. Assume that all sales are made on credit and the only purchases made on credit are inventory purchases, that is, no operating expenses. Use period-end values rather than averages for your calculations.

b. Using the ratios from part (a), evaluate the liquidity of Stuewe Enterprises Ltd.

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CHAPTER OVERVIEW

Chapter 14: Long-Term Financial Liabilities

Leveraging and Debt – Can it be a Smart Move?

In simple terms, leveraging is borrowing to invest, in the hopes that the investment will generate a higher rate of return than the interest rate of the debt. The investment that is financed by debt may be intended to increase a company's corporate wealth by expanding its market share, or adding new product lines to increase net income. It can also involve investing in other companies' shares to enhance a special relationship or receive share dividends and capital appreciation of the shares as a return on investment. No matter the reason, there are important aspects of leveraging that must be considered before entering into such an arrangement.

1. Does the company currently generate enough net income and hold enough assets to service the proposed leveraging strategy?
2. Is leveraging the best strategy, given alternative financing arrangements such as increasing equity by issuing more shares?
3. Does management clearly understand the risks of taking on a leveraging strategy or is the decision driven more by emotions than by careful consideration?
4. Since leveraging increases the debt burden, will this impact any existing restrictive debt covenants from other creditors?
5. Does the company have sufficient business processes in place to adequately monitor and measure the return of the investment funded by the additional debt? This must be done to ensure that the return from the investment exceeds the interest rate of the debt itself.
6. If the investment's return is less than expected, does the company have enough net income and other resources to keep the investment in hopes of an improvement in the future?
7. Is the company diversified enough to achieve a balance between the leveraged investment and its other sources of funds and operations?

(Source: HSBC, 2013)

Learning Objectives

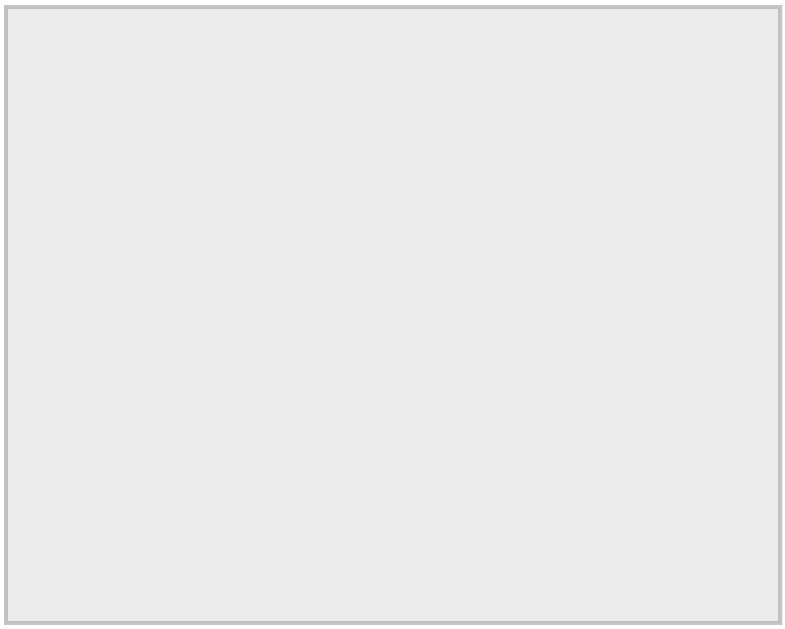
After completing this chapter, you should be able to:

- Describe long-term financial liabilities and their role in accounting and business.
- Describe notes payable, and explain how they are classified and how they are initially and subsequently measured and reported.
- Describe bonds payable, and explain how they are classified and how they are initially and subsequently measured and reported.
- Define and describe other accounting and valuation issues such as the fair value option, defeasance, and off-balance sheet financing.
- Explain how long-term debt is disclosed in the financial statements.
- Identify the different methods used to analyze long-term liabilities; calculate and interpret three specific ratios used to analyze long-term liabilities.
- Explain the similarities and differences between ASPE and IFRS regarding recognition, measurement, and reporting of long-term payables.

Introduction

This chapter will focus on the basics of long-term debt, such as bonds and long-term notes payable. Each of these will be discussed in terms of their use in business, their recognition, measurement, reporting and analysis. Other, more complex types of financial liabilities such as convertible debt, pension liabilities, and leasing obligations, will be discussed in future chapters.

Chapter Organization



14.1: Overview
14.2: Notes Payable
14.3: Bonds Payable
14.4: Fair Value Option, Defeasance, and Off-Bal Sheet Financing
14.5: Disclosures of Long-Term Debt
14.6: Long-Term Debt Analysis
14.7: IFRS/ASPE Key Differences
14.8: Chapter Summary
14.9: References
14.10: Exercises

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14.1: Overview

Most businesses will incur debt at some point during their existence. For example, new businesses may be required to borrow start-up cash to purchase revenue-generating assets as they do not yet have any cash holdings accumulated from profits. Or, existing companies may want to expand their operations, or they may want to replenish depleted cash holdings that resulted from a temporary downturn in business. Additionally, companies with large infrastructures, such as airlines or railways, may require more cash for their capital projects than what can be generated from normal operations. Whatever the case, businesses can obtain the additional cash they need through various financing activities. Three sources of such financing are:

1.
2.
3.

As shown above, cash obtained from any of the three financing sources can be invested into assets that a company hopes will generate sales and, ultimately, a cash profit. Additionally, each source of financing has its own advantages. For example, using internally-generated funds is the easiest to access but it misses the opportunity to maximize profits through leveraging, as explained in the opening story. As previously discussed, leveraging means using a creditor's cash to generate a profit where the interest rate from the creditor is less than the return generated by operating profits. However, care must be taken to ensure that the best method is used from the choices available on a case-by-case basis. Consider that while borrowing from creditors can result in desirable leveraging, it can also increase the liquidity and solvency risk, as borrowings are obligations that must be repaid. Also, while issuing shares doesn't affect liquidity or solvency, as they are not repayable obligations, issuing more shares results in diluted ownership for the shareholders, which could result in less dividends or a lower market price for the shares. There are also tax implications when choosing between debt and equity sourced financing since interest expense from holding debt is deductible for tax purposes while dividends paid for shares are not.

Long-term debt, such as bonds and long-term notes (including mortgages payable) are examples of financial liabilities. Financial liabilities are the financial obligation to deliver cash, or other assets, in a determinable amount to repay an obligation. They are also monetary liabilities because they represent a claim to cash where the amount is fixed by contract. Financial assets and liabilities share the same mirror image characteristic: that a long-term note payable reported on the balance sheet of the borrowing company will be reported as a long-term note receivable on the balance sheet of the creditor company.

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14.2: Notes Payable

Recognition and Measurement of Notes Payable

A note payable is an unconditional written promise to pay a specific sum of money to the creditor, on demand or on a defined future date. It is supported by a formal written promissory note. These notes are negotiable instruments in the same way as cheques and bank drafts.

Notes payable are initially recognized at the fair value on the date that the note is legally executed (usually upon signing). Subsequent valuation is measured at amortized cost using the effective interest rate.

Characteristics

A typical note payable requires payment of a specified face amount, also called principal, and interest, that is paid as a single lump sum at maturity, as a series of payments, or as a combination of both. (This topic will be discussed later in this chapter.)

Secured notes payable identify collateral security in the form of assets belonging to the borrower that the creditor can seize if the note is not paid at the maturity date.

Notes may be referred to as interest bearing or non-interest bearing:

- Interest-bearing notes have a stated rate of interest that is payable in addition to the face value of the note.
- Notes that are zero-bearing or non-interest bearing do not have a stated rate of interest. Although, while they may appear at first glance not to have any interest, there is always an interest component embedded in the note. The interest component will be equal to the difference between the borrowed and repaid amounts.

Cash payments vary and can be a single payment of principal and interest upon maturity, or payment of interest only throughout the term of the note with the principal portion payable upon maturity, or a mix of interest and principal throughout the term of the note.

Transaction Costs

It is common for notes to incur transaction costs, especially if the note payable is acquired using a broker as they will charge a commission for their services. For a company using either ASPE or IFRS, the transaction costs associated with financial liabilities, such as notes payable that are carried at amortized cost, are to be capitalized, meaning that the costs will reduce the note payable amount. If the debt is subsequently classified and measured at its fair value, the transaction costs are to be expensed. This is referred to as the fair value option and will be discussed later in this chapter.

Classification

Notes may be classified as short-term (current) or long-term payables on the SFP/BS:

- Short-term notes are current liabilities payable within the next 12 months, or within the business's operating cycle if longer than 12 months.
- Long-term notes are notes that do not meet the definition of a current (short-term) liability. For example, notes with due dates greater than one year.

As previously discussed, the difference between a short-term note and a long-term note is the length of time to maturity. Also, the process to issue a long-term note is more formal, and involves approval by the board of directors and the creation of legal documents that outline the rights and obligations of both parties. These include the interest rate, property pledged as security, payment terms, due dates, and any restrictive covenants. Restrictive covenants are any quantifiable measures that are given minimum threshold values that the borrower must maintain. Additionally, restrictions on minimum working capital (current assets minus current liabilities), management remuneration, capital expenditures, or dividends paid to shareholders are often found in covenant conditions. Maintenance of certain ratio thresholds, such as the current ratio or debt to equity ratios, are all common measures identified in restrictive covenants.

As the length of time to maturity of the note increases, the interest component becomes increasingly more significant. As a result, any notes payable with greater than one year to maturity are to be classified as long-term notes and require the use of present values to estimate their fair value at the time of issuance. A review of the time value of money, or present value, is presented in the following to assist you with this learning concept.

Long-Term Notes Payable, Interest, and the Time Value of Money

Long-term notes payable are to be measured initially at their fair value, which is calculated as the present value amount. But what is present value? It is a discounted cash flow concept, which we will discuss next.

It is common knowledge that money borrowed from a bank will accrue interest that the borrower will pay to the bank, along with the principal. The present value of a note payable is equivalent to the amount of money deposited today, at a given rate of interest, which will result in the specified future amount that must be repaid upon maturity. The cash flow is discounted to a lesser sum that eliminates the interest component—hence the term discounted cash flows. The future amount can be a single payment at the date of maturity, a series of payments over future time periods, or a combination of both. Put into context for notes payables, if a creditor must wait until a future date to receive repayment for its lending, then note payable's face value at maturity will not be an exact measure of its fair value today (transaction date) because of the embedded interest component.

For example, assume that a company purchases equipment in exchange for a two-year, $5,000 note payable, and that notes of a similar risk have a market rate of 9%. The face value of the note is therefore $5,000. The note's present value, without the interest component, is $4,208.40, not $5,000. The $4,208.40 is the amount that, if deposited today at an interest rate of 9%, would equal exactly $5,000 at the end of two years. Using a variables string, the present value of the note can be expressed as:

PV = (9% I/Y, 2N, 5000FV) = $4,208.40
Where I/Y is interest of 9% each year for two years;
N is for the number of years that the interest is compounded;
FV is the payment at the end of two years' time (future value) of $5,000.

To summarize, the present value (discounted cash flow) of $4,208.40 is the fair value of the $5,000 note at the time of the purchase. The additional amount received of $791.60 ($5,000.00 – $4,208.40) is the interest component paid to the creditor over the life of the two-year note.

Note: The symbols PV, I/Y, N, FV, and PMT are intended to be a generic reference to the underlying variables string. Each brand of financial calculator will have its own owner's manual that will identify the set of keys for inputting the variables above.

After issuance, long-term notes payable are measured at amortized cost. As illustrated next, determining present values requires an analysis of cash flows using interest rates and time lines

Present Values and Timelines

The following timelines will illustrate present value using discounted cash flows. Below are three different scenarios:

1. Assume that on January 1, Maxwell lends some money to Nictonia in exchange for a $5,000, five-year note payable as a lump-sum amount at the end of five years. Notes of similar risk have a market interest rate of 5%. Additionally, Maxwell's year-end is December 31. The first step is to identify the amount(s) and timing of all the cash flows as illustrated below on the

timeline. Inputting the variables into a financial calculator, the amount of money that Maxwell would be willing to lend to the borrower using the present value calculation of the cash flows would be $3,917.63.



In this case, Maxwell would be willing to lend $3,917.63 today in exchange for a payment of $5,000 at the end of five years, at an interest rate of 5% per annum. Nictonia's entry for the note payable at the date of issuance would be:



Notes of this nature are often referred to as zero-interest or non-interest-bearing notes. This is a misnomer, however, as all debt transactions between unrelated third parties will bear interest based on market interest rates. For example, note that Maxwell lends $3,917.63 now and collects $5,000 at the end of five years. The difference of $1,082.37 represents the interest component over the five years.

2. Now assume that on January 1, Maxwell lends an amount of money in exchange for a $5,000, five-year note. The current market rate for similar notes is 5%. The repayment of the note is $1,000 at the end of each year for the next five years (present value of an ordinary annuity). The amount of money that Maxwell would be willing to lend Nictonia using the present value calculation of the cash flows would be $4,329.48, as follows:



Nictonia's entry for the note payable at the date of issuance would be:



Note that in this example Maxwell is willing to lend more money, $4,329.48 as compared to $3,917.63, to Nictonia. Another way of looking at it would be that the interest component embedded in the note is less in this case. This makes sense as the principal amount of the note is being slowly reduced over its five-year term due to of the yearly payments of $1,000. In other words, the higher the frequency of payments, the lower the interest component will be. This is the same concept as with a mortgage owing for a house. It is common for financial advisors to say that a mortgage payment paid twice a month, instead of a single payment once a month, will result in a significant reduction in interest costs over the term of the mortgage. The bottom line is that if the principal amount owing at any time over the life of a note is reduced, there will be less interest charged overall. Another name for a note with equal payments of interest and principal is an instalment or blended payment note.

3. How would the amount of the loan and the entries above differ if Maxwell received five equal payments of $1,000 at the beginning of each year (present value of an annuity due) instead of at the end of each year, as shown in example 2? The amount of money that Maxwell would be willing to lend Nictonia using the present value calculation of the cash flows paid at the beginning of the period (P/AD generic symbol) would be $4,545.95, as follows:



Nictonia's entry for the note payable at the date of issuance would be:



Again, the interest component will be less because a payment is paid immediately upon execution of the note, which causes the principal amount to be reduced sooner than a payment made at the end of each year.

Below is a comparison of the three scenarios:

	Scenario 1		Scenario 2		Scenario 3	
	Single payment at maturity		Five payments of $1,000 at the end of each month		Five payments of $1,000 at the beginning of each month	
Face value of the note	$	5,000	$	5,000	$	5,000
Less: present value of the note		3,918		4,329		4,546
Interest component	$	1,082	$	671	$	454

Note that the interest component decreases for each of the scenarios even though the total cash repaid is $5,000 in each case. This is due to the timing of the cash flows, as discussed earlier. In scenario 1, the principal is not reduced until maturity and interest would accrue for the full five years of the note. In scenario 2, the principal is being reduced at the end of each year, so the interest will decrease due to the decreasing balance owing. In scenario 3, there is an immediate reduction of principal because of the first payment of $1,000 made upon issuance of the note. The remaining four payments are made at the beginning of each year instead of at the end. This results in a faster reduction in the principal amount owing as compared with scenario 2.

Present Values With Unknown Variables

As is the case with any algebraic equation, if all variables except one are known, the final unknown variable can be derived. In the case of present value calculations, if any four of the five variables in the following equation

PV = (PMT, I/Y, N, FV)

are known, the fifth unknown variable amount can be determined using a financial calculator or an Excel net present value function. For example, if the interest rate (I/Y) is not known, it can be derived if all the other variables in the variables string are known. This will be illustrated when non-interest-bearing long-term notes payable are discussed later in this chapter.

Present Values: When Stated Interest Rates Are Different Than Effective (Market) Interest Rates

Differences between the stated interest, or face rate, and the effective, or market, rate at the time a note is issued can have accounting consequences as follows:

- If the stated interest rate of the note, (i.e., the interest rate that the note pays) is 10% at a time when the effective interest rate (also called the market rate or yield) is 10% for notes with similar characteristics and risk, the note is initially recognized as:

  Face value = Fair value = Present value of the note

  This makes intuitive sense since the stated rate of 10% is equal to the market rate of 10%.
- If the stated interest rate is 10%, and the market rate is 11%, the stated rate is lower than the market rate and the note is trading at a discount.
- If the stated interest rate is 10%, and the market rate is 9%, the stated rate is higher than the market rate and the note is trading at a premium.

The premium or discount amount is to be amortized over the term of the note.

Below are the acceptable methods to amortize discounts or premiums:

- If a company follows IFRS, the effective interest method of amortization is required, which we will discuss in the next section.
- If a company follows ASPE, the amortization method is not specified, so either straight-line amortization or the effective interest method is appropriate as an accounting policy choice.

Here are some examples with journal entries involving various face value, or stated rates, compared to market rates.

1. **Notes issued at face value**

Face value of the note		$	10,000
Present value of the note principal and interest:			
Payment =			
PV = (1000 PMT, 10 I/Y, 3 N, 10000 FV)			10,000
Difference		$	0

In this case, the note's face value and present value, or fair value, are the same ($10,000) because the effective, or market, and stated interest rates are the same. Fascination Co.'s entry on the date of issuance is:

If Fascination Co.'s year-end was December 31, the accrued interest each year would be:

2. **Stated rate lower than market rate – a discount**

Face value of the note		$	10,000
Present value of the note principal and interest:			
Payment =			
PV = (1000 PMT, 12 I/Y, 3 N, 10000 FV)			9,520
Discount amount		$	480

As shown above, the note's stated rate (10%) is less than the market rate (12%), so the note is issued at a discount.

Sizzle Corp.'s entry to record the issuance of the note payable would be:

Even though the face value of the note is $10,000, the amount of money lent to Sizzle Corp. would only be $9,520. This considers the discount amount due to the difference between the stated and market interest rates discussed earlier. In return, Sizzle Corp. will pay to Anchor Ltd. an annual cash payment of $1,000 for three years, plus a lump sum payment of $10,000 at the end of the third year when the note matures. The total cash payments will be $13,000 over the term of the note, and the interest component of the note would be:

Cash paid		$	13,000	
Present value (fair value)			9,520	
Interest component			3,480	(over the three-year term)

As mentioned earlier, if Sizzle Corp. follows IFRS, the $480 discount amount would be amortized using the effective interest rate method. If Sizzle Corp. follows ASPE, there would be a choice between the effective interest method and the straight-line method.

Below is a schedule that calculates the cash payments, interest expense, discount amortization, and the carrying amount (book value) of the note at the end of each year using the effective interest method:

$10,000 Note Payment and Amortization Schedule

Effective Interest Method

Stated rate of 10% and Market Rate of 12%

		Interest		Amortized		Carrying
		Cash Paid	Expense @ 12%	Discount		Amount
Date of issue						$ 9,520
End of year 1		$ 1,000	$ 1,142*	$ 142		9,662
End of year 2		1,000	1,159	159		9,821
End of year 3		1,000	1,179	179		10,000
End of year 3 final payment		10,000	-	-		0
		$ 13,000	$ 3480	$ 480		

*

Note that the total discount amortized of $480 in the schedule is equal to the discount originally calculated as the difference between the face value of the note and the present value of the note principal and interest. Also, the amortization amount calculated each year is added to the note's carrying value, thereby increasing its carrying amount until it reaches its maturity value of $10,000. As a result, the carrying amount at the end of each period is always equal to the present value of the note's remaining cash flows discounted at the 12% market rate. This is consistent with the accounting standards for the subsequent measurement of long-term notes payable at the *amortized cost*.

Assuming that Sizzle Corp.'s year-end was the same date as the note's interest paid, at the end of year 1, using the schedule above, Sizzle Corp.'s entry would be:

Alternatively, if Sizzle Corp. followed ASPE the straight-line method of amortizing the discount is simple to apply. The total discount of $480 is amortized over the three-year term of the note in equal amounts. The annual amortization of the discount is $160 ( ) for each of the three years, as shown in the following entry:

Comparing the three years' entries for both the effective interest and the straight-line methods, the following pattern for amortization over the life of the note payable is shown below:

		Effective Interest		Straight-Line	
End of year 1		$	142	$	160
End of year 2			159		160
End of year 3			179		160
		$	480	$	480

The amortization of the discount using the effective interest method results in increasing amounts of interest expense that will be recorded in the adjusting entry (decreasing amounts of interest expense for amortizing a premium) compared to the equal amounts of interest expense using the straight-line method. The straight-line method is easier to apply but its shortcoming is that the interest rate (yield) for the note is not held constant at the 12% market rate as it is with the effective interest method. This is because the amortization of the discount is in equal amounts and does not take into consideration what the carrying amount of the note was at any period of time. However, at the end of year 3, the notes payable balance is $10,000 for both methods, and so the same entry is recorded for the payment of the cash.



3. **Stated rate more than market rate – a premium**

$10,000 Note Payment and Amortization Schedule

Effective Interest Method

Stated rate of 10% and Market Rate of 9%

					Interest			Amortized			Carrying	
		Cash Paid			Expense @ 9%			Premium			Amount	
Date of issue											$	10,253
End of year 1		$	1,000		$	923*		$	77			10,176
End of year 2			1,000			916			84			10,092
End of year 3			1,000			908			92			10,001
End of year 3 final payment			10,000			-			-			0
		$	13,000		$	2,747		$	253			

*

Sizzle Corp.'s entry on the note's issuance date is for the present value amount (fair value):



If the company's year-end was the same date as the note's interest paid at the end of year 1, using the schedule above, the entry would be:



The entry when paid at maturity would be:



4. **Zero-interest-bearing notes**

Assume that on January 1, Eclipse Corp. received a five-year, $10,000 zero-interest-bearing note from Galaxy Ltd. The amount of cash lent to Galaxy Ltd., which is equal to the present value, is $7,835 (rounded). Galaxy Ltd.'s year-end is December 31. Looking at the cash flows and the timeline:



Note that the sign for the $7,835 PV is preceded by the +/- symbol, meaning that the PV amount is to have the opposite symbol to the FV amount. Also, FV is the cash paid at maturity, while the PV is the amount of cash lent to the note issuer. Many financial calculators require the use of a +/- sign for one value, and no sign for the other, to correctly calculate imputed interest rates. Consult your calculator manual for further instructions regarding zero-interest note calculations.

The implied interest rate is calculated to be 5% and the note's interest component (rounded) is $2,165 ($10,000 - $7,835), which is the difference between the cash lent and the higher amount of cash repaid at maturity. Below is the schedule for the interest and amortization calculations using the effective interest rate method:

Non-Interest-Bearing Note Payment and Amortization Schedule

Effective Interest Method

	Cash Paid	Interest Income @ 5%	Amortized Discount	Carrying Amount
Date of issue				$ 7,835.26
End of year 1	$ 0	$ 391.76*	$ 391.76	8,227.02
End of year 2	0	411.35	411.35	8,638.37
End of year 3	0	431.92	431.92	9,070.29
End of year 4	0	453.51	453.51	9,523.80
End of year 5	0	476.20**	476.20	10,000
End of year 5 payment	$ 10,000	-	-	0
		$ 2,164.74	$ 2164.74	

*

** rounding

Galaxy Ltd.'s entry for the note payable when issued would be:

At Galaxy Ltd.'s year-end on December 31, the accrued interest at the end of the first year using the effective interest method would be:

At maturity when the cash payment is made, Galaxy Ltd.'s entry would be:

If Galaxy Ltd. followed ASPE instead of IFRS, the entry using the straight-line method for amortizing the discount is calculated as the total discount of $2,164.74, amortized over the 5-year period term of the note resulting in equal amounts each year. Therefore, the annual amortization is $432.95 ( ) each year:

5. **Notes Payable in Exchange for Property, Goods, or Services**

Xertoc Corp.'s entry upon issuance of the note and purchase of the land would be:

However, if the market rate is not known, either of following two approaches can be used to determine the fair value of the note:

1. **Determine the fair value of the property, goods, or services received.** As was discussed for zero-interest-bearing notes where the interest rate was not known, the implicit interest rate can still be derived because the cash amount lent, and the timing and amount of the cash flows paid from the issuer are both known. In this case the amount lent is the fair value of the property, goods, or services given up. Once the interest is calculated, the effective interest method can be applied. 1

and the interest expense component is $8,250 over three years ( ).

Norfolk Ltd.'s entry upon issuance of the note would be:

2. **Determine an imputed interest rate**. An imputed interest rate is an estimated interest rate used for a note with comparable terms, conditions, and risks between an independent borrower and lender.

On June 1, Edmunds Co. receives a $30,000, three-year note from Virginia Simms Ltd. in exchange for some swamp land. The land has a historic cost of $5,000 but neither the market rate nor the fair value of the land can be determined.

In this case, a risk-adjusted rate of return must be determined and subsequently used to determine the note's present value (fair value). For companies that follow IFRS, the fair value hierarchy identified in IFRS 13 Fair Value Measurement would be used to determine the appropriate risk adjusted rate of return and the subsequent fair value of the land. In the absence of a directly comparable market, level 2 or level 3 inputs are used. This can include present value calculations based on expected future cash flows. In this case, the future cash flow is the $30,000 note payment. The discount rate should be determined based on the risk-free rate of return, adjusted for the risk factors of the transaction. Alternately, use risk-adjusted cash flows, discounted at the risk-free rate. The calculated PV subsequently becomes the fair value used. In this case, the risk-free rate of return adjusted for the risk factors for this transaction is determined to be 7%. The present value is calculated as follows:

Virginia Simms Ltd.'s entry upon issuance of the note would be:



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Subsequent Measurements and Derecognition

As previously discussed, under ASPE and IFRS, long-term notes payable that are held by debtors are subsequently accounted for at amortized cost, which is calculated as:

- present value of the cash flows, including commissions or fees if any
- +/- reductions in principal or for any adjustments for amortization of the discount or premium
- derecognition of the debt through retirement or settlement. All premiums or discounts will be fully amortized by the maturity date. The carrying amount at maturity will be the same as the note's face value so there will be no gain or loss at maturity unless the debt is settled early.

Impairment

If a debtor runs into financial difficulties and is unable to pay, or fully repay, the note, the estimated impaired cash flows become an important reporting disclosure for the lender. If the lender can reasonably estimate the impaired cash flows an entry is made to record the debt impairment. The impairment amount is calculated as the difference between the carrying value at amortized cost and the present value of the estimated impaired cash flows.

For example, on January 1, 2021, Empire Construction Ltd. signed a $200,000, four-year, non-interest-bearing note payable with Second National Bank. The required yield for the bank was 8%. During 2023, Empire Construction Ltd. experienced some serious financial difficulties. Based on the information provided by Empire Construction Ltd. management, the bank estimated that it was probable that it would receive only 75% of the 2023 balance at maturity. Additionally, the current market rate of interest in 2023 is 7%.

Below are the effective interest schedule and entries for Second National Bank:



For the lender, the entries for 2021 and 2022 would be:



The interest schedule and amounts entered would be the same for Empire Construction Ltd. who would record the entries to interest expense and to notes payable as a long-term liability. In 2023, the impairment would be calculated and recorded by the lender as calculated and shown below:

Note receivable balance as at January 1, 2023		$	171,468
Present value of impaired cash flows:			
(At the original required yield of 8%)			
PV = (8 I/Y, ( ) N, 128,601 FV*)			110,255
Impairment loss		$	61,213
*			



Empire Construction Ltd. (debtor) makes no entry since it still legally owes the debt amount, unless the impairment results in a troubled debt restructuring, which is discussed next.

Troubled Debt Restructurings

A troubled debt restructuring occurs if a lender grants concessions such as a reduced interest rate, an extended maturity date, or a reduction in the debts' face amount. These can take the form of a settlement of the debt or a modification of the debt's terms.

1. **Settlement of Debt**

The debtor will settle the account by transferring assets such as property, plant, or equipment that may have been used to secure the note (a loan foreclosure), by issuing shares, or using the cash proceeds received for a new debt obtained from a new creditor.

To illustrate, continuing with the example of Empire Construction Ltd.'s note with Second National Bank, assume that by January 1, 2024, financial troubles have continued to plague Empire Construction Ltd. to the point where it could no longer pay the loan when it matured the following year. On January 1, 2024, Second National Bank agrees to accept a building with a fair value of $160,000 from Empire Construction Ltd. in full settlement of the note. The building had an original cost of $185,000 and accumulated depreciation of $5,000. The bank's (creditor) entry for the settlement is recorded below:



The fair value of the building is the valuation used to record the asset. The note receivable and related doubtful account is derecognized, or removed, from the accounts, and a further gain of $40,925 is recorded. If the bank had not previously used an allowance account, the loss on impairment would be $20,288 ( ). At this point, the bank has fully recovered the loan and made a net profit of $12,994: . If the note had originally been secured by the building, the bank could have applied to the courts to legally seize ownership of the building to satisfy the loan obligation.

The debtor's entries are shown below:



Note that there is a separate asset loss recorded of $20,000, as well as a gain recorded of $25,185, which is required for the restructuring of the note.

Had Second National Bank agreed to accept Empire Construction Ltd.'s shares, with a market value of $160,000 in full settlement of the note, the entry would have been similar:



The entry for Empire Construction Ltd. would be:



2. **Modification of Terms**
3. **Modification of Terms Less Than 10%**

For example, on January 1, 2021, Lehry Ltd. owed $50,000, with interest payments to be made annually to Freeman Financial Trust. However, it ran into financial difficulties before any payments were made. On January 1, 2021, Freeman Financial Trust agrees to make the following concessions:

- Reduce the interest rate from 5% to 4%, with annual payments remaining at $2,500.
- Extend the due date from January 1, 2021, to January 1, 2024.
- Reduce the face value from $50,000 to $45,000.

Applying the 10% threshold to the present value calculations:

Carrying value of old debt, due January 1, 2021 (present value)		$	50,000
The present value, using the historic rate of 5% for the new terms:			
PV = (2,500 PMT, 5%, 3 N, 45,000 FV) =		$	45,681
Concession amount		$	4,319

The present value of $45,681 has a concession amount of $4,319, which is less than the 10% of the present value of the old debt of $50,000 that is now due. As a result, the concession is treated as a modification of terms. The old debt remains as the carrying value of the note but with a new effective interest rate and reduced face value of $45,000 at maturity. The new effective interest rate is calculated the same way as was done for a non-interest-bearing note where the present value, payment amount, number of years, and future value are known:

I/Y = (+/- 50,000 PV, 2,500 PMT, 3 N, 45,000 FV) = 1.72 % (rounded)

The new effective interest rate schedule is shown below:

					Interest							
		Payment			**@ 1.72%**			**Amortization**			**Balance**	
Jan 1, 2021											$	50,000
Jan 1, 2022		$	2,500		$	860		$	1,640			48,360
Jan 1, 2023			2,500			832			1,668			46,692
Jan 1, 2024			2,500			808*			1,692			45,000
*rounded												

Assuming a year-end date of December 31, Lehry Ltd. would make the following adjusting entry:



At maturity, Lehry Ltd. would make the following entry to settle and derecognize the note:



Freeman Financial Trust would account for the restructuring of the note as an impairment loss of $4,319 concession amount calculated above, which was discussed in the previous section of this chapter.

4. **Modification of Terms Greater Than 10%**
   - The present value of the new terms (using the historic interest rate) is more than 10% different than the present value of the remaining cash flows of the old debt.
   - There is a change in creditor and the original debt is legally discharged (CPA Canada, 2016, Part II, Section 3856.A52 and IFRS 9/B3.3.6).

If either condition exists, the modification is substantial and will be considered a settlement of the old debt, and a new debt with the new terms is assumed.

Going back to the Lehry Ltd. example, on January 1, 2021, Lehry Ltd. owed $50,000 to Freeman Financial Trust but has run into financial difficulties. On January 1, 2021, Freeman Financial Trust agrees to make the following concessions:

- Reduce the interest rate from 5% to 3%. Payments are to remain at $2,500.
- Extend the due date from January 1, 2021, to January 1, 2023.
- Reduce the face value from $50,000 to $40,000.

Applying the 10% threshold to the present value calculations:

Carrying value of old debt, due January 1, 2021 (present value)		$	50,000
The present value, using the historic rate of 5% for the new terms:			
PV = (2,500 PMT, 5%, 2 N, 40,000 FV) =		$	40,930
Concession amount		$	9,070

The present value of $40,930 has a concession amount of $9,070, which is more than the 10% of the present value of the old debt of $50,000, which is now due. As a result, the concession is treated as a substantial modification of terms. The old debt is settled, a gain is recorded by the debtor, and a new debt with the new terms is recorded as shown in the following entry:



The present value of the new debt is calculated as follows:

PV = (2,500 PMT, 3 I/Y, 2 N, 40,000 FV) = $42,488

Freeman Financial Trust would account for the restructuring of the note as an impairment, a term previously discussed in this chapter, except that no allowance account would be used since this modification is a settlement and not simply an adjustment. If there was an outstanding allowance account balance from a previous impairment loss for this debt, the allowance account would also be closed as part of this entry.



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14.3: Bonds Payable

When the amount to be borrowed is significant, bonds can provide a source of cash that is compiled from many investors. The process to issue bonds is initiated by a bond indenture that contains details such as the denomination or face value of the bonds, the annual interest rate and payment dates (usually twice per year), and the face amount payable at maturity. Each bond is issued as a certificate with a specific denomination or face value, and bonds are usually issued in multiples of $100 or $1,000.

Many bond issuances are sold to an underwriter or broker who acts as the seller in the marketplace. Brokers can buy the entire issue and resell, thereby assuming all the risks in the marketplace, or they can sell on behalf of the issuing company on a commission basis. Each bond issuance has a credit rating assigned to it by independent rating agencies such as Standard & Poor's Corporation. The ratings indicate the degree of riskiness assigned to the issue. Essentially, the higher the rating (AAA or investment-grade bonds), the more access the company has to investors' capital at a reasonable interest rate. Conversely, the lower the rating (CCC/C or junk bonds), the higher the risk and interest rate to be paid. Since the rating assigned is a function of company performance, this rating can change over the lifespan of the bond issue. Companies will take great care to preserve their high ratings.

Types of Bonds

There are many types of bonds with different features for sale in the marketplace. Some of the more common ones are listed below:

1. **Registered bonds**: Each bond is registered in the investor's name. If the bond is sold, the certificate is cancelled and a new one is issued.
2. **Coupon or bearer bonds**: The bond is not registered in the investor's name, so whoever holds the bond will receive the interest and face value at maturity.
3. **Term or serial bonds**: Bonds that mature on a single date are term bonds, while those that mature in instalments are serial bonds.
4. **Secured and unsecured bonds**: Secured bonds have security or collateral that was assigned to the issue. For example, mortgage bonds are secured by claims against real estate. If the issuer defaults on payments, the security can be seized through a court order and used to satisfy the amounts owed to the bondholders. Debentures are bonds that are not secured and are often issued by school boards and municipalities.
5. **Callable or convertible bonds**: Callable bonds give the issuer the right to call and retire the bonds before maturity. Convertible bonds allow the holder to convert the bonds into capital such as the common shares in the company. Convertible debt gives rise to some interesting accounting challenges in terms of the embedded debt and equity characteristics for these types of securities. Convertible debt will be discussed in detail in Chapter 14.

Initial and Subsequent Measurement, at Par, at a Discount, and at a Premium

As with notes payable, bonds are initially recognized at their fair value at the time of issuance, which is measured at the present value of their future cash flows. They are subsequently measured at amortized cost. Transaction fees for bonds measured at amortized cost are to be *capitalized*, meaning that the costs will reduce the bond payable amount and be amortized over the life of the bond.

Classification

Bonds are issued as a long-term debt security, which matures in several years, and are classified as long-term payables on the SFP/BS. When a bond issue's maturity date occurs within the next 12 months of the reporting date, or within the business's operating cycle if greater than 12 months, it is classified as a short-term bond payable.

You are encouraged to review the section on time value of money, presented earlier in this chapter, which discussed the present value learning concept.

Bonds Issued at Par

This bond issue is the simplest to account for. If bonds are issued at their face value on their interest payable date with no transaction fees, the cash proceeds received from the investors will be the initial measurement amount recorded for the bond issue. The interest expense is recorded in the same amount as the cash interest paid, at the face or stated rate, and there is no accrued

interest. This means that the effective interest rate (market rate) and the stated rate (face rate) are the same. At maturity, the amount paid to the bondholders is the face value (or par value) amount, which is also the fair value on that date.

To illustrate, on May 1, 2021, Engels Ltd. issued 10-year, 8%, $500,000 par value bonds with interest payable each year on May 1 and November 1. The market rate at the time of issuance is 8% and the company year-end is December 31.

To record the bond issuance on May 1:

To record the interest payment on November 1:

To record the accrued interest on December 31 year-end:

To record the interest payment on May 1, 2022:

Note how the interest payable for the accrued interest recorded at year-end is reversed at the first interest payment the following year, on May 1, 2022.

At maturity, the May 1, 2031, entry would be:

Bonds Issued at a Discount

As explained earlier in this chapter regarding notes payable, the market rate (effective rate or yield) is not always the same as the stated or face rate. When these two interest rates are different, each one is used to determine certain cash flows required to calculate the present value. The stated or face rate determines the interest payment amount (PMT), while the market or effective rate is used to determine the present value of the bond issuance (I/Y).

To illustrate, on May 1, 2021, Engels Ltd. issued a 10-year, 8%, $500,000 face value bond with interest payable each year on May 1 and November 1. The market rate at the time of issuance is 9% and the company year-end is December 31. In this case the stated rate of 8% is less than the market rate of 9%. This means that the bond issuance is trading at a discount and the fair value, or its present value of the future cash flows, will be less than the face value upon issuance. The present value is calculated as:

20,000	PMT	(where semi-annual interest using the stated or face rate is)
4.5	I/Y	(where 9% market or effective interest is paid twice per year)
20	N	(where interest is paid twice per year for 10 years)
500,000	FV	(where a single payment of the face value is due in a future year 2031);

Expressed in the following variables string, and using a financial calculator, the present value is calculated:

Present value (PV) = (20,000 PMT, 4.5 I/Y, 20 N, 500,000 FV) = $467,480



The stated rate of 8% is less than the market rate of 9%, resulting in a present value less than the face amount of $500,000. This bond issuance is trading at a discount. Since the market rate is greater, the investor would not be willing to purchase bonds paying less interest at the face value. The bond issuer must, therefore, sell these at a discount to entice investors to purchase them. The investor pays the reduced price of $467,480. For the seller, the discount amount of $32,520 ( ) is subsequently amortized over the life of the bond issuance using one of two possible methods, the same as was explained for long-term notes payable earlier in this chapter. IFRS companies are to amortize discounts and premiums using the effective interest rate method, and ASPE companies can choose between the simpler straight-line method and the effective interest rate method. The total interest expense for either method will be the same.

Assuming the effective interest rate method is used for the example, the interest schedule for the bond issuance is shown below:



The effective interest rate method ensures that a consistent interest rate is applied throughout the life of the bonds. Straight-line amortization results in varying interest rates throughout the life of the bonds because of the equal amount of the discount applied at each interest payment date.

Using the information from the schedule, the entries are completed below.

To record the interest payment on November 1:



Recording the accrued interest at the December 31 year-end can be tricky, so preparing the relevant portion of an effective interest schedule will be useful:



To record the interest payment on May 1, 2022:



Again, note how the interest payable for accrued interest recorded at year-end is reversed at the first interest payment the following year, on May 1, 2022.

To record the interest payment on November 1, 2022:



At maturity, the May 1, 2031, entry would be:



Bonds – Straight-Line Method

Companies that follow ASPE can choose to use the simpler straight-line interest method. The discount of $32,520 ( ) would be amortized on a straight-line basis over the 10 years. The interest was paid on a semi-annual basis in the illustration above, so the amortization of the discount would be $1,626 ( ) on each interest payment date over the 10-year life of the bonds.

The November 1, interest entry would be:



As stated previously, the interest expense will no longer be a constant rate over the life of the note but the ASPE standard recognizes that privately-held companies will want to apply a simpler method since ownership is usually limited to a small group of shareholders and the shares are not publicly traded.

A video is available on the Lyryx web site. Click Here to view the video.

Bonds Issued in Between Interest Payments

If investors purchase bonds on dates falling in between the interest payment dates, the investor pays an additional interest amount. This is because the bond issuer always pays the full six months interest to the bondholder on the interest payment date because it is the easiest way to administer multiple interest payments to potentially thousands of investors. For example, if an investor purchases bonds four months after the last interest payment, the issuer will add these additional four months of interest to the purchase price. When the next interest payment date occurs, the issuer pays the full six months interest to the purchaser. The interest amount paid and received by the bond-holder will net to two months. This makes intuitive sense given that the bonds have only been held for two months making interest for two months the correct amount.

For example, on September 1, 2021, an investor purchases $100,000, 10-year, 8% bonds, at par, with interest payable each May 1 and November 1. The market price at the time of issuance was 97. The company year-end is December 31 and it follows ASPE. The amount paid by the investor on September 1, 2021, would be:

Bond face value at market price ( )		$97,000
Accrued interest ( )		2,667
Total cash paid		$99,667

When the bond issuer pays the full month's interest of $4,000 ( ), the net interest received by the bondholder will be $1,333 for two months ( ). For the entries below, assume the straight-line (SL) interest rate method (ASPE) is being used.

To record the bond issuance on September 1:



To record the interest payment on November 1:



* (round to $52, for simplicity), for Sep 1 to Nov 1 or two months

Note: the length of time of the 10 years that the company will hold the bonds will be 116 months: Sep 1/2021 to May 1, 2031, (from May 1, 2021 to Sep 1, 2021)

The December 31 year-end accrued interest entry:



* rounded, for Nov 1 to Dec 31, or two months

To record the interest payment on May 1, 2022:



* rounded for Jan 1 to May 1, or four months.

To record the interest payment on November 1, 2022:



* rounded for May 1 to Nov 1, or six months.

At maturity, the May 1, 2031, entry would be:



Bonds Issued at a Premium

If the stated rate is more than the market rate, the bond trades at a premium. This is because investors are seeking the best interest rate for their investment. If the stated rate is higher, the bond issuance is more desirable, and the investors would be willing to pay more for this investment than for another with a lower stated rate. The accounting for bonds purchased at a premium follows the same method as was illustrated for bonds at a discount. The illustration will be changed slightly to introduce the use of the market spot rate.

To illustrate, on May 1, 2021, Impala Ltd. issued a 10-year, 8%, $500,000 face value bond at a spot rate of 102 (2% above par). Interest is payable each year on May 1 and November 1. The company year-end is December 31 and follows IFRS.

The spot rate is 102, so the amount to be paid is $510,000 ( ) and, therefore, represents the fair value or present value of the bond issuance on the purchase date.

The entry for the bond issuance is:



However, what effective interest rate would be required to result in a present value of $510,000, a future value of $500,000 payable in 10 years, and a stated or face rate of 8% interest payable semi-annually? As was explained for the long-term notes payable earlier in this chapter, since all the other variables are known, and only the interest rate (I/Y) is unknown, it can be imputed as shown below:

To prove that the 3.85% is the correct semi-annual effective interest rate, the present value is calculated as follows:

20,000	PMT	(where semi-annual interest using the stated or face rate is)
3.8547	I/Y	(where market or effective interest is paid twice per year)
20	N	(where interest is paid twice a year for 10 years)
500,000	FV	(where a single payment of the face value is due in a future year 2031);

Expressed in the following variables string and using a financial calculator, the present value is calculated as follows:

Present value (PV) = (20,000 PMT, 3.8547 I/Y, 20 N, 500,000 FV) = $510,000 (rounded)



Using the information from the schedule, the entries are completed below.

To record the interest payment on November 1:



Recording the accrued interest at the December 31 year-end can be tricky, so preparing the relevant portion of an effective interest schedule will be useful:



To record the interest payment on May 1, 2022:



To record the interest payment on November 1, 2022:



At maturity, the May 1, 2031, entry would be:



A video is available on the Lyryx web site. Click Here to view the video.

Repayment Before Maturity Date

In some cases, a company may want to repay a bond issue before its maturity. Examples of such bonds are callable bonds, which give the issuer the right to call and retire the bonds before maturity. For example, if market interest rates drop, the issuer will want to take advantage of the lower interest rate. In this case, the re-acquisition price paid to extinguish and derecognize the bond issuance will likely be slightly higher than the bond carrying value on that date, and the difference will be recorded by the issuing corporation as a loss on redemption. The company can, subsequently, sell a new bond issuance at the new, lower interest rate.

For example, on January 1, 2021, Angen Ltd. issued bonds with a par value of $500,000 at 99, due in 2031. On January 1, 2025, the entire issue was called at 101 and cancelled. Interest is paid annually, and the discount amortized using the straight-line method. The carrying value of the bond on January 1, 2025, would be calculated as follows:

Face value of bond		$	500,000
Unamortized discount:			
			(3,000)
Carrying value on call date		$	497,000
Re-acquisition price: $500,000 X 101			505,000
Loss on redemption		$	8,000

Angen Ltd. would make the following entry:



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14.4: Fair Value Option, Defeasance, and Off-Bal Sheet Financing

Notes and Bonds – the Fair Value Option

Long-term debt is usually measured at amortized cost; however, there is an alternative called the fair-value option that ASPE allows for all types of financial instruments. If a company chooses to use the fair-value option, the debt instruments are continually remeasured to their fair value. In the case of IFRS, the fair-value option can be used if it results in more relevant information.

As discussed earlier in this chapter, the higher the credit or solvency risk, the lower the grade assigned by the independent rating agencies. Furthermore, the grade assigned can change for better or for worse, depending on the performance of the company over the life of the debt instrument. In cases where the grade deteriorates because of increasing credit or solvency risk, the effective interest rate must also increase to compensate for the higher risk–causing the fair value of the bond instrument to decrease. A decrease in fair value creates a gain on the credit side of the entry, as shown below:



Notes and Bonds – Defeasance and Off-Balance Sheet Financing

Defeasance

If a company wishes to pay off a debt before its maturity date, problems can arise if the debt agreement stipulates early repayment penalties. One way around this issue is for the debtor to deposit sufficient funds into a separate trust account that will generate returns enough to cover the payments owed to the creditor, as outlined in the original agreement. This is called defeasance, and it can be executed in one of two ways. First, as legal defeasance, where the creditor agrees to change the debt obligation from the debtor to the trust. Second, informally as in-substance defeasance, in which case both ASPE and IFRS do not allow the original debt to be derecognized as the company still legally owes the debt.

Off-Balance Sheet and Other Sources of Financing

Company performance is in part measured by its liquidity and solvency position. For this reason, companies are motivated to keep debt off the books. Below are various sources of financing that do not require recording a debt obligation.

- **Operating leases:** Companies can avoid reporting a lease obligation if a lease agreement is written in such a way as to not meet the lease capitalization criteria required by ASPE and IFRS. The lease payments are subsequently recorded as rental expenses in exchange for the use of the asset being leased (leases will be discussed further in a later chapter).
- **Selling receivables and investments:** Companies can obtain funding by selling receivables and other investments to special purpose entities (SPE) in exchange for cash rather than incurring debt. This is known as securitization and is discussed in more detail in the cash and receivables chapter from the previous intermediate accounting text.
- **Parental control of another company:** Companies can obtain access to another company's funds through mergers and acquisitions. Additionally, ASPE gives investee companies the choice to report their investments in other companies using either the equity method or cost, even if control exists. If control in another company is reported only as a single line item asset called "investment" on the SFP/BS, this will obscure any potential significant debt that the investee company may have on their books, which the investor parent company may ultimately be responsible for. Investments are discussed further in the Intercorporate Investments chapter from the previous intermediate accounting text.

It is important to note that adequate disclosures of these arrangements are important for financial statement users.

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14.5: Disclosures of Long-Term Debt

Long-term debt that matures within one year is usually reported as a current liability. Similarly, any principal portion of long-term debt due within one year of the reporting date is also to be reported as a current liability. In the absence of a refinancing agreement, any long-term debt that is refinanced is to be reported as a current liability as well. For ASPE, to report a long-term debt that is to be refinanced as a long-term debt, the refinancing agreement must be in place prior to the release of the financial statements. Whereas for IFRS, it must be in place prior to the reporting date of the financial statements.

Basic debt disclosures usually include:

- maturity date
- interest rate
- amounts due in each of the next five years
- assets pledged as security
- restrictions by creditors (restrictive covenants)
- call provisions
- conversion details
- information regarding liquidity and solvency risks of the company

Note that the reporting disclosures listed above have been simplified, as the disclosures required by IFRS are, in fact, quite extensive. The disclosures for ASPE are also quite robust but are slightly less extensive than for IFRS. 2

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14.6: Long-Term Debt Analysis

The chapter on cash and receivables emphasized the importance of maintaining an adequate cash flow and an efficient inventory-to-cash cycle. When debt is incurred, companies are always mindful that the debt, including interest, must be repaid, thereby drawing down on cash flows. For this reason, various liquidity and solvency ratios are constantly monitored by management and investors to ensure company performance is optimal and access to debt financing continue at reasonable interest rates.

Debt is part of a continuum. Too little debt could mean that companies are not taking advantage of leverage (also known as gearing). Too much debt can cause severe shortages in the cash needed to service the debt (pay the interest and principal amounts owing in a timely manner) if it is incurred at a greater rate than the inventory-to-cash cycle can generate cash. Companies in this position can only access additional financial markets at much higher interest rates and are subject to increasingly restrictive debt covenants imposed and monitored by the creditor. Important ratios used in the monitoring process and for restrictive covenants regarding long-term debt include:

- **Debt to equity:** Measures the company's share of debt compared to equity.

  Note: There are also variations of this ratio that only consider long-term debt amounts for the numerator. This occurs when the creditor is concerned with the long-term financial structure of the company.

- **Debt to total assets:** Measures the company's share of assets that are financed by debt.

- **Times interest earned:** Measures the company's ability to cover its interest payments as they come due.

  Income before income taxes and interest expense

Below is the unclassified balance sheet for Carmel Corp. as at December 31, 2021:

Carmel Corp.							
Balance Sheet							
As at December 31, 2021							
Cash		$	84,000		Accounts payable	$	146,000
Accounts receivable (net)			89,040		Mortgage payable		172,200
Investments – trading			134,400		Common shares		400,000
Buildings (net)			340,200		Retained earnings		297,440
Equipment (net)			168,000			$	1,015,640
Land			200,000				
		$	1,015,640				

The net income for the year ended December 31, 2021 was broken down as follows:

Revenue		$	1,000,000
Gain			2,200
Total revenue			1,002,200
Expenses			
Operating expenses			784,200
Interest expenses			35,000
Depreciation			48,000
Loss			5,000
Income tax			25,000
			897,200
Net income		$	105,000

As discussed previously, ratios are difficult to evaluate without something to compare them to, such as previous company trends or industry standards to use as comparative benchmarks. In general terms, if debt to total assets is less than 50%, this would be a reasonable result, meaning that equity has financed greater than 50% of the company's total assets. As well, this shows that the company is profitable and is able to cover its interest expense reasonably.

Companies that are overextended find themselves under increasing pressure to use aggressive accounting policies to stay within the restrictive covenants set by creditors. This can lead to reporting bias. If discovered by the creditor, they can call the loan for immediate repayment, in which case the loan must subsequently be reclassified as a current liability, further worsening the current liability ratios such as the current ratio or acid test ratio. For this reason, it is wise for management to resist the temptation to use such accounting policies.

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14.7: IFRS/ASPE Key Differences

Item	ASPE	IFRS
Initial measurement	Fair value as the present value of future cash flows.	Fair value as the present value of future cash flows.
Subsequent measurement	Amortized cost, unless the fair-value option is chosen. Can choose to use either the effective interest rate or straight-line methods to amortize discounts and premiums.	Amortized cost, unless the fair-value option is chosen because it results in more relevant information. The effective interest rate method is the only method allowed to amortize discounts and premiums.
Impairment and troubled debt restructurings	Impairments are recorded by the creditor only. The debtor makes no entry since the amount is still legally owed. Troubled debt restructurings re-measure the new debt using the historic interest rate for comparability. If the difference is less than 10%, the debtor does not record an entry. Creditor records impairment. If the difference is greater than 10%, the debtor recognizes a gain, the old debt is derecognized, and the new debt recognized.	Same as ASPE.
Disclosure	Any principal portion of long-term debt due within one year of the reporting date is to be reported under current liabilities as the current portion of long-term debt. Long-term debt that is refinanced may be classified as long-term provided the refinancing is in place by the time the financial reports are issued.	Any principal portion of long-term debt due within one year of the reporting date is to be reported under current liabilities as the current portion of long-term debt. Long-term debt that is refinanced may be classified as long-term provided the refinancing is in place by the reporting date.

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14.8: Chapter Summary

LO 1: Describe long-term financial liabilities and their role in accounting and business.

Companies generate cash resources for future business opportunities from three basic sources: (a) internally from its sales, (b) from investors through issuing shares, (c) from borrowing from a creditor. Each source has its advantages and disadvantages. If a company decides to borrow from a creditor, the opportunity to leverage exists. Leveraging occurs when the interest cost of borrowing debt to purchase assets is lower than the return generated by the leveraged assets. However, increasing debt also increases liquidity and solvency risk. Long-term debt is defined as debt with due dates greater than one year. It can be notes payable, such as mortgages, or bonds payable. Both are financial liabilities as they both represent obligations fixed by contract.

LO2: Describe notes payable, and explain how they are classified and how they are initially and subsequently measured and reported.

A note payable is an obligation to pay a specified sum of money in the form of principal and interest through a formal written promissory note or agreement. Long-term notes are initially recorded at their fair value, which is calculated as the present value of the discounted cash flows. Cash flows are characterized by the size and timing of the debt repayment. Repayment can either be a single lump sum of principal and interest at maturity, a series of interest payments with a lump sum payment of principal at maturity, or a series of instalment payments combining both interest and principal over a specified period. The variables used to determine the present value of the note are the repayment cash flows, along with the market rate for a note of similar risk, and the timing of the cash flows. The present value of the note is the amount initially recorded as the note payable amount. The term *zero-interest-bearing notes*, or *non-interest-bearing notes*, is a misnomer because they do, in fact, include an interest component: the difference between the borrowed and the repaid amounts.

After issuance, long-term notes payable are subsequently measured at amortized cost. For example, if the note payable is issued at face value, the present value will be the same as the face value and there will be no premium or discount to amortize. If the stated rate is lower or higher than the market rate, the present value will be lower or higher and the note will be issued at a discount or at a premium, whichever the case. For IFRS companies, the discount or premium is to be amortized over the life of the note using the effective interest method. For ASPE companies, the choice is between the effective interest method and the straight-line method. For non-interest-bearing notes, the interest rate will usually be the rate that results in the correct interest component amount. The fair value for notes payable in exchange for property, goods, or services is usually determined by the fair value of the good or service given up; however, there can be some issues regarding what constitutes fair value for exchange transactions.

Other issues relating to subsequent measurement of notes payable are accounting for impairment and troubled debt restructurings. If a note subsequently becomes impaired, the creditor will estimate the present value of the impaired cash flow and will write down the note receivable accordingly. The debtor makes no such entry as there is still a legal obligation to fully repay the note. For troubled debt restructurings, there are several calculations and entries for the creditor and the debtor depending on whether there is a settlement of the debt, a modification of terms less than 10%, or a modification of terms for greater than 10%.

LO 3: Describe bonds payable, and explain how they are classified and how they are initially and subsequently measured and reported.

Bond issuance is typically the choice made by companies when the amount of funds needed is significant. Instead of having a single creditor, many bondholders purchase the bonds for investment purposes. A broker or underwriter plays a key role in this process. There are many types of bonds, each with different features that are identified in the bond indenture.

Like long-term notes payable, bonds are classified as long-term debt until they are within one year of their maturity, at which time they are classified as a current liability. They are initially recognized at their fair value, measured by the present value of their future cash flows, and are subsequently measured at amortized cost. Bonds can be issued at par or at either a discount or a premium. The discount or premium is amortized over the life of the bond using the effective interest method. For ASPE companies, straight-line method is also acceptable.

Bond issuers always pay interest according to the bond indenture, which often means payment every six months. For bonds purchased between interest dates, the bondholder will pay an additional sum on the purchase date, which covers the interest since the last interest payment date. When the first six-month interest payment is received, the net amount of the additional monies

initially paid out at purchase for accrued interest, and the first interest income received in case, will represent the correct interest income from the date of purchase to the first interest payment received.

If interest rates should drop significantly while a bond issue is outstanding, the bond issuer will be motivated to repay the bondholders before the maturity date and subsequently re-issue the bonds at the lower rate. The slightly higher acquisition price paid to reacquire the bonds will be recorded as a loss on redemption.

LO 4: Define and describe other accounting and valuation issues such as the fair value option, defeasance, and off-balance sheet financing.

ASPE allows for an alternative measure for notes and bonds called the fair-value option. IFRS allows this only if it results in more relevant information or as part of a larger fair-value portfolio. Bond issuers' credit ratings can drop, which will result in a corresponding increase in the interest rate. The resulting decrease in the fair value reduces the bond payable and the offsetting credit is recorded as an unrealized gain. Since these gains are currently reported in the income statement, it seems counter-intuitive for companies whose credit ratings have dropped to report an increase in net income. IFRS 9 has corrected this anomaly since its implementation in 2018.

Companies can be motivated to keep their reported debt at the lowest level legally possible. There are a couple of ways that this can be achieved. First, defeasance involves the debtor paying monies into a separate trust account ahead of time, and the creditor receiving payments directly from that trust. In this way, if done legally, the long-term debt can be removed from the debtor's books. Second, off-balance sheet sources of financing are another way to avoid reporting debt on the balance sheet. An example is operating leases, where the monies paid for the lease are recorded as a rental expense and, therefore, no lease obligation or asset is reported. This will be discussed in further detail in a later chapter about leasing.

LO 5: Explain how long-term debt is disclosed in the financial statements.

There are specific and extensive reporting requirements for long-term debt, including the impact on reporting regarding refinancing agreements. Basic reporting requirements include disclosures of the interest rate, maturity date, security details, restrictive covenants required by creditors, and current portion of long-term debt, to name a few. Since IFRS companies are usually publicly traded, impacting many investors, the reporting requirements are extensive.

LO 6: Identify the different methods used to analyze long-term liabilities; calculate and interpret three specific ratios used to analyze long-term liabilities.

Notes and bonds payable affect the liquidity and solvency of companies since the debt must be repaid at some point. Companies' cash positions must continually be monitored to ensure that there are enough cash reserves to repay maturing debt. Three common ratios that can trigger a further review, if unfavourable, are debt to equity, debt to total assets, and times interest earned. Comparable benchmarks make ratios a useful monitoring tool.

LO 7: Explain the similarities and differences between ASPE and IFRS regarding recognition, measurement, and reporting of long-term payables.

In this case, IFRS and ASPE are quite similar. A difference between them is the choice of amortization method used for bonds and notes that were issued at a discount or premium. ASPE has the added option to amortize the premium or discount using either the straight-line method or the effective method. Additionally, ASPE disclosures are less than those required by IFRS.

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14.9: References

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14.10: Exercises

14.1

Evergreen Ltd. is planning to expand its operations and will be looking at various sources of financing to access enough cash to complete the project. Now, Evergreen Ltd. has a debt to total assets ratio of 56%, compared to the industry average of 60%.

Required:

a. Identify and explain the three sources of financing available to Evergreen Ltd.
b. Based on the information provided, recommend which would be the best alternative.

14.2

On January 1, 2021, Vayron Corp. issued a $400,000, three-year, 5%, note at face value to Valleydale Ltd. in exchange for $400,000 cash. The note requires annual interest payments on December 31.

Required: Prepare Vayron Corp.'s journal entries to record:

a. Issuance of the note
b. The December 31 interest payment
c. What would the market interest rate be at the time the note was signed and why?
d. What would the yield be?
e. What is the current portion of the long-term debt, if any? When will this be reported?

14.3

On January 1, 2021, Compton Corp. issued $500,000, 10-year, 8% bonds that pay interest semi-annually. At the time of issue, the market rate for bonds with similar characteristics and risks was 7%. Compton Corp. follows IFRS.

Required: Prepare Compton Corp.'s journal entries to record:

a. Issuance of the note
b. The June 30 interest payment.
c. The amount of the discount or premium, if any.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.4

On January 1, 2021, Termund Co. issued a $120,000, three-year, zero-interest-bearing note to North Lace Ltd. in exchange for $95,260. At the time, the implicit interest rate was 8%. Termund Co. uses the effective interest rate method.

Required: Prepare Termund Co.'s entries for:

a. Issuance of the note
b. Recognition of interest for year-end on December 31, 2021
c. If the implicit rate has not been provided, provide the calculation proof that would determine the implicit rate of 8%.
d. Prepare an amortization table for North Lace Ltd.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.5

On January 1, 2021, Odessa Corp. issued an $80,000, four-year, 3% note to Yalta Ltd. in exchange for equipment that normally sells for $74,326. The note requires annual interest payments each December 31. The market rate for a note of similar risk is 5%.

Required: Prepare Odessa Corp.'s entries for:

a. Issuance of the note
b. The first interest payment using the effective interest rate method
c. The first interest payment if Odessa Corp. follows ASPE and has chosen to use the straight-line method for amortization.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.6

On January 1, 2021, Edmund Inc. issued a $200,000, five-year, no-interest note to Hillary Ltd. and received $200,000 cash. Included in the terms of the note was an arrangement that Edmund Inc. would sell raw materials to Hillary Ltd. for a discounted price over the five-year period. Edmund Inc. follows IFRS and the market rate at that time was 2.5%.

Required: Prepare Edmund Inc.'s journal entry for the issuance of the note.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.7

On January 1, 2021, Melbourne Ltd. signed an instalment note in settlement of an outstanding account payable of $25,000 owed to Yardin Corp. Yardin Corp. is able to earn an 8% return on investments with similar risk. The payment terms determine that the note is to be repaid in three equal cash payments of principal and interest on December 31, 2021, 2022, and 2023.

Required: Calculate the payment amount.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.8

On January 1, 2021, Southerly Winds Inc. issued $350,000, 15-year, 5% bonds at face value. The issuance cost from the broker was $25,500 and the difference was paid to Southerly Winds Inc. in cash. The bonds require interest payments annually every December 31. Southerly Winds Inc. follows ASPE and amortizes the bond issue costs using the straight-line method.

Required: Prepare the entries for:

a. The bond issuance
b. The first interest payment and amortization

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.9

On January 1, 2021, Hobart Services Ltd. issued $200,000 of 7% bonds at 98. Bonds are due January 1, 2026, with interest payable semi-annually on July 1 and January 1.

Required:

a. Prepare all the journal entries relating to the bond for 2021 assuming that Hobart Services Ltd. follows IFRS.
b. Prepare a classified partial statement of financial position as at December 31, 2021.
c. Prepare the entries for 2021 assuming now that Hobart Services Ltd. follows ASPE and uses the straight-line method.
d. Based on the data in part (c), prepare a classified partial balance sheet as at December 31, 2021.
e. Will the total cost of borrowing over the life of the bond, using the effective interest method, be higher, lower, or the same as the total cost of borrowing using the straight-line method?

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.10

On May 1, 2021, Harper Boyle Construction Ltd. issued $800,000 of 5% bonds. Bonds were dated January 1, 2021, and mature on January 1, 2041, with interest payable each July 1 and January 1. The bonds were issued at 99 plus accrued interest, less brokerage fees of $7,000. Harper Boyle Construction Ltd. follows IFRS and their year-end is December 31.

Required:

a. Complete an interest schedule for 2021 to 2023.
b. Prepare all the entries related to the bonds for 2021.
c. Prepare a partial classified statement of financial position as at December 31, 2021 including current liability disclosures, if any. Round the interest rate percentage to the nearest four decimals and the amortization schedule to the nearest whole number.
d. What is the accounting treatment for the brokerage fees of $7,000?

14.11

On November 1, 2021, Tribecca Ltd., issued $1M of 4%, 15-year bonds, at face value. Interest is payable each December 31. The company has chosen to apply the fair value option as the accounting treatment for the bonds. A risk assessment at December 31,

2022 shows that Tribecca's credit rating has slipped to a lower rating. As a result, the fair value of the bonds on December 31, 2022 is $950,000.

Required:

a. Prepare the journal entries on December 31, 2022, if any, assuming that Tribecca follows ASPE.
b. Prepare the journal entries on December 31, 2022, if any, assuming that Tribecca follows IFRS.
c. What significant issue arises using the fair value method? Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.12

On July 31, 2021, Elmer Fudd Co. retired bonds with a face value of $300,000 at 99. The unamortized discount at that time was $10,150.

Required: Record the entry for the retirement.

Note: Round the percentages to the nearest two decimals and the final answers to the nearest whole number.

14.13

Kishmir Corp. has a loan that is currently due at December 31, 2021, year-end. This debt is being refinanced by a three-year loan. The refinance documents were signed on January 4, 2022. The financial statements have not yet been issued.

Required:

a. How would the loan be reported in the December 31, 2021, statement of financial position (IFRS)?
b. How would the loan be reported in the December 31, 2021, balance sheet (ASPE)?

14.14

As at December 31, 2021, Smith and Smith Co. owes $25,000 to First Nearly Trust Co., for a three-year, 8% note due on this date. The note was issued at par. The oil and gas market has dropped significantly, so Smith and Smith Co. is in serious financial trouble due to the decrease in sales. First Nearly Trust Co., agrees to some concessions as follows:

- Extend the due date from December 31, 2021, to December 31, 2024.
- Reduce the principal amount owing to $18,000.
- Reduce the interest rate to 6%, payable annually on December 31 at a time when the market rate was 7%.

Required: Prepare the journal entries for the debtor for December 31, 2021, 2022, and 2023. (Note: Round the final answers to the nearest whole number.)

14.15

On January 1, 2021, Dimor Ltd. purchased a house with a tax assessment value of $590,000 in exchange for an $800,000, zero-interest-bearing note due on January 1, 2027. The house had not been appraised recently, nor did the note have a market value. The bank's interest rate for this type of transaction and risk characteristics was 5.75%. Dimor Ltd. intends to use the entire house as their main office.

Required:

a. What is the carrying value of the note payable on December 31, 2021?
b. What role, if any, would the tax assessment value of $590,000 play?

14.16

On January 1, 2021, Seutor Corp. issued an instalment note in exchange for equipment with a list price of $150,000. The note is to be paid in four equal payments of $40,541 of principal and interest each December 31. The market rate that this time is 7% for this type of transaction.

Required:

a. How will the equipment value be established?
b. Prepare the journal entries for 2021 for the note payable.
c. Why would a creditor prefer the instalment note compared to a regular interest-bearing note?

14.17

On December 31, 2021, Firstly Trust agreed to restructure a $700,000, 8% note, issued at par with Hornblower Corp. The interest is paid annually each December 31. Below are the terms:

- Principal is reduced from $700,000 to $650,000.
- The maturity date is extended from December 31, 2021, to December 31, 2023.
- The interest rate is reduced from 8% to 7%.

On January 1, 2024, Hornblower Corp. pays $650,000 to Firstly Trust.

Required:

For Hornblower Corp.:

a. What entry, if any, would Hornblower Corp. make regarding the loan restructure?
b. What is the interest rate that Hornblower Corp. should use for future periods?
c. Record the interest entry for Hornblower Corp. on December 31, 2022.
d. Record the entry for Hornblower Corp. on January 1, 2024.

For Firstly Trust:

e. Calculate the loss for the debt restructuring and record the entry, if any.
f. Prepare an interest schedule after the debt restructuring.
g. Record the interest entry on December 31, 2022.
h. Record the entry on January 1, 2024.

14.18

Ulting Ltd. owes Sleazy Finance Co. $150,000 for a 3-year, 10% note, issued at par and due on December 31, 2021. Interest was paid annually each December 31. Ulting Ltd. is now in financial difficulties, so Sleazy Finance Co. agrees to extend the note's maturity date to December 31, 2023, reduce the principal to $130,000, and reduce the interest rate to 9%. The market rate is currently 5%. Both companies follow IFRS.

Required:

a. Prepare all related journal entries for Ulting Ltd. for 2021, 2022, and 2023.
b. Prepare all related journal entries for Sleazy Trust Co. for 2021, 2022, and 2023, if an allowance account was used for this note.

1. According to IAS (2013) "IFRS 13 Fair Value Measurement applies to IFRSes that require or permit fair value measurements or disclosures and provides a single IFRS framework for measuring fair value and requires disclosures about fair value measurement. The Standard defines fair value based on an 'exit price' notion and uses a 'fair value hierarchy', which results in a market-based, rather than entity-specific, measurement. IFRS 13 was originally issued in May 2011 and applies to annual periods beginning on or after 1 January 2013" (para 1). IFRS 13 is beyond the scope of this course. For simplicity, the fair value of the property, goods, or services given up, as explained in the chapter material, assumes that IFRS 13 assumptions and hierarchy to determine fair values have been appropriately considered.

2. CPA Canada (2016) Part II, Section 3856 and IFRS 7 detail the full disclosure requirements.

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CHAPTER OVERVIEW

Chapter 15: Complex Financial Instruments

Is Convertible Debt a Viable Financing Option?

Convertible debt is an instrument that can be converted from debt (liability) to equity shares at some point, often due to a triggering event. Creditors can become shareholders by purchasing the equity share offered in the terms of the convertible agreement. Creditors can often purchase these shares at a discount, and this can be a strong motivator for converting the debt to equity.

There are advantages and disadvantages for a company obtaining its financing through convertible debt.

Advantages

Convertible debt can be simpler, cheaper, and faster, since the debt documentation is much shorter and simpler, with fewer terms to negotiate. As a result, legal fees will also likely be less compared to the fees incurred for a small preferred shares offering. The process can be completed within a matter of two weeks compared to several months for other forms of equity financing.

Convertible debt does not require setting a valuation of the company, as is required for other forms of equity financing in order to set the share price in the offering. In the absence of operational history, it is difficult for most new companies to set a valuation. Moreover, company valuations can create a temptation to over-value the company to maximize the share price at that time. Any subsequent issuance of shares would be priced at the lower market price causing discontent for the original shareholders who paid more for the shares due to the initial over-valuation.

Funds received from convertible debt allow companies to keep control, especially if the conversion is from debt to preferred shares with no voting rights. The company control by existing shareholders will become diluted through the alternative of common share offerings to obtain financing.

Disadvantages

Common shares issuances are commonplace and well understood by investors. Convertible debt, on the other hand, is a hybrid instrument with debt and equity features that can be confusing to investors, thus making the instrument harder to sell.

Prior to conversion, convertible debt interest must be paid, and the principal amount owed must be reported as a liability, even though it may not be payable until a subsequent triggering event occurs. Since convertible debt is considered debt until conversion, its presence in the balance sheet will negatively impact the liquidity ratios, solvency ratios, and any restrictive covenants currently in force from other creditors.

Assuming that the convertible debt converts to preferred shares, some investors may not like the lack of control compared to investing in common shares. To compensate, companies will often add other attractive features to preferred shares, but investors may still prefer to invest elsewhere rather than give up the rights inherent in common shares.

Other Financial Products

Companies can raise capital by means other than convertible debt. A simple loan is one alternative, but this is often difficult for new companies with higher credit risk to obtain. Preferred shares are an alternative with dividends and preferred rights such as voting rights, but this may cause issues for existing common shareholders. Convertible preferred shares are also an option. These are like convertible debt except the loan features such as interest are excluded.

(Source: Scott Legal, 2013)

Learning Objectives

After completing this chapter, you should be able to:

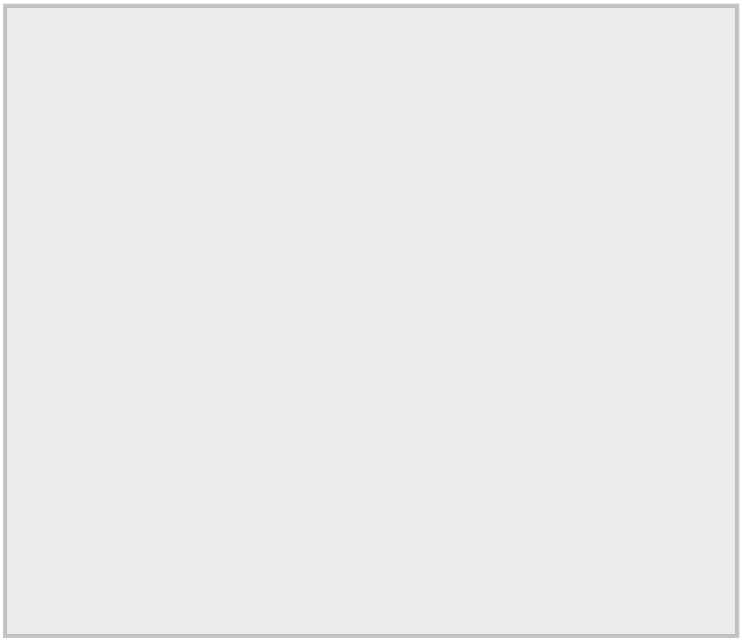
- Describe complex financial instruments and their role in accounting and business.
- Describe the basic differences in the accounting treatments for long-term debt and equity.

- Describe the two methods acceptable to IFRS and ASPE to separate, classify, measure, and disclose complex financial instruments such as convertible debt and convertible preferred shares.
- Describe various derivatives such as options, warrants, forwards, and futures.
- Explain the accounting treatments and reporting requirements for stock options plans.
- Recall that analyses of complex financial instruments use the same techniques as those used in non-convertible debt and equity instruments.
- Explain the similarities and differences between ASPE and IFRS regarding recognition, measurement, and reporting of complex financial instruments.

Introduction

This chapter continues from earlier chapters that examined long-term debt and equity. However, the focus will now be on complex financial instruments, such as convertible bonds and convertible preferred shares, as well as derivatives, such as options and warrants.

Chapter Organization



15.1: Overview
15.2: Long-Term Debt and Equity Instruments- Review
15.3: Complex Financial Instruments
15.4: Options, Warrants, Forwards and Futures
15.5: Stock Compensation Plans
15.6: Analysis
15.7: IFRS/ASPE Key Differences
15.8: Chapter Summary
15.9: References
15.10: Exercises

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15.1: Overview

As stated in the previous chapter regarding long-term debt, most businesses will require financing at various points throughout their lives. For example, new businesses may require start-up cash to purchase revenue-generating assets, as they have yet to accumulate cash holdings. Existing companies may want to expand their operations or replenish depleted cash holdings due to a temporary downturn in sales. There are also companies that possess large infrastructures, such as airlines or railways, and require more cash for their capital projects than can be generated from normal operations. These businesses obtain the necessary additional cash through various *financing activities* such as internally generated free cash flow, borrowing from creditors (debt), and issuing capital shares (equity).

The material presented in the previous chapters looked at debt and equity as separate instruments. However, in recent decades financing activities have created hybrid sources of financing where a single instrument can possess characteristics of both debt and equity. Examples of these more complex instruments are convertible debt, convertible preferred shares, and various derivatives such as options and warrants that can be converted into common shares.

Why do companies seek out these alternative financing sources? As the opening story explains, instruments such as convertible debt can often be simpler, cheaper, and faster to obtain – all while maintaining existing control, or at least knowing exactly when the control will change due to the triggering event. Also, these hybrid securities usually include sweeteners, such as conversion to shares at a lower than market price, thereby increasing their attractiveness to investors. Moreover, investors will be more willing to purchase the bonds because they not only provide greater security if secured by company assets, but they also allow investors to participate in the company profits and growth through the option to convert to common shares. Since the conversion feature adds flexibility, and hence increased value, companies can usually obtain convertible debt at cheaper interest rates. However, there is more to the story. Convertible instruments have a significantly different effect on perceptions held by shareholders and the marketplace. For example, if a company issues additional common shares to raise capital, instead of using its own internally generated funds from profits or by borrowing funds (to be repaid by internally generated funds), the market can interpret this negatively, as a sign that the company is unable to obtain debt financing, perhaps due to a poor credit rating. In other words, it sends a signal that the company might not be performing as well as it should. This can lower the market value of the shares, thereby creating a negative climate and causing concern for the shareholders.

If convertible bonds (debt) or convertible preferred shares or warrants (equity) are issued instead, the investment holders will only convert to common shares if conditions are favourable. This sends a positive signal to the market that the company is continuing to do well. As a result, these hybrid instruments become a way to access funding while maintaining a more positive climate, without unduly alarming shareholders and creditors. As such, these hybrid instruments have become widely accepted and commonplace in today's market.

From an accounting standards point of view, the issue becomes: how do you separate, measure, and report the debt and equity attributes of these complex financial instruments throughout their life-cycle of issuance, subsequent measurement, and conversion or retirement?

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15.2: Long-Term Debt and Equity Instruments- Review

Since convertible instruments each possess a combination of debt and equity characteristics, the challenge becomes: how to separate, measure, and report the debt and equity attribute for each type of instrument required by the accounting standards.

For complex financial instruments, once an acceptable method to separate the debt from the equity component is determined, each component will follow its respective accounting standard, as discussed in previous chapters.

It is important to understand the substance of debt and equity instruments so that the classification and amounts reported reflect their true underlying economic substance, rather than simply their legal form. Therefore, a review of debt and equity instruments and their characteristics is presented below:

	Long-Term Liabilities (Debt)	**Equity (Shares)**
Examples	Bonds and long-term notes payable	Preferred and common shares
Maturity	Principal and accrued interest due on various dates identified in the documentation.	Permanent capital unless repurchased by the company.
Secured by and seniority	Usually secured by various company assets. Debt ranks in seniority to shares in terms of windup, bankruptcy, and liquidation.	Unsecured. Shareholders are entitled to whatever assets remain after creditors are paid out. Preferred shares are also senior to common shares.
Advantages and disadvantages	• Interest expense lowers net income and is also tax deductible. • Principal and accrued interest must be repaid on the maturity date unless debt is convertible to shares. • Unpaid principal and interest increase liquidity and solvency risk and could lead to reduced access to other capital. • Company does not give up control of company policies. • Can use the funds from debt financing to generate profits with higher returns compared to the interest accrued on the debt itself (leveraging).	• Dividend payouts have no effect on net income or income taxes. • Dividends payouts are optional, and shares are permanent capital held by shareholders unless repurchased by the company. • Shares balances have no direct effect on liquidity and solvency ratios, but other ratios such as earnings per share are affected. • Company gives up proportionate share of control for each voting share issued, and existing shareholders' investment holdings become diluted. Market share can also decline in value if a shares issuance is significant. • Shareholder capital represents company ownership so there is no leveraging opportunity.

The schedule below is a summary of the accounting treatment for long-term liabilities (debt) taken from an earlier chapter:

Financial Liabilities	ASPE	IFRS
Initial measurement	Fair value as the present value of future cash flows.	Fair value as the present value of future cash flows.
Subsequent measurement	Amortized cost unless the fair-value option is chosen. Can choose to use either the effective interest rate or straight-line methods to amortize discounts and premiums.	Amortized cost unless the fair-value option is chosen because it results in more relevant information. The effective interest rate method is the only method allowed to amortize discounts and premiums.
Disclosure	Any principal portion of long-term debt due within one year of the reporting date is to be reported under current liabilities as the current portion of long-term debt. Long-term debt that is refinanced may be classified as long-term provided the refinancing is in place by the time the financial reports are issued.	Any principal portion of long-term debt due within one year of the reporting date is to be reported under current liabilities as the current portion of long-term debt. Long-term debt that is refinanced may be classified as long-term provided the refinancing is in place by the reporting date.

In an earlier chapter we discussed equity—including preferred and common shares. To recap in basic terms, equity shares issuance is accounted for using historical cost, net of any direct costs of the shares issuance such as underwriting costs, accounting and legal fees, and printing costs. Additionally, disclosure includes the number of shares authorized and issued for common and preferred shares. For preferred shares, the per share dividend amount is also disclosed.

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15.3: Complex Financial Instruments

Complex financial instruments possess more than one financial component, such as a combination of debt or equity attributes as explained in the introduction. Examples of complex financial instruments are: convertible bonds payable, convertible preferred shares, and options/warrants that attach to shares or bonds. Convertible bonds are usually issued in exchange for cash, which must either be repaid later at maturity (debt attribute) or, alternatively, must be converted into a specific number of common shares at specific points in time (equity attribute). Convertible preferred shares possess both the attributes of preferred shares and common shares if they are converted into a specific number of common shares at specific times. Clearly, these convertible instruments possess more than one debt or equity attribute compared to non-convertible financial instruments.

Convertible debt and convertible preferred shares will be discussed next, and derivative instruments, such as options and warrants, will be discussed briefly towards the end of the chapter.

Convertible Debt and Preferred Shares Classification: Two Methods

The accounting standards require that bonds that are convertible into common shares are to be separated into the value of the bond, without the conversion feature (debt component), and an embedded/attached option to convert the debt into common shares (equity component). Convertible preferred shares are separated into the value of the preferred share, without the conversion feature (shares equity component), and an option to convert preferred shares into common shares (contributed surplus equity component). There are a number of methods that can accomplish the separation of debt from equity components, but IFRS recommends only the residual method, while ASPE allows either the residual method or the zero-equity method.

- The residual method estimates and allocates the fair value of the bond first, without the conversion feature, because debt is usually the more reliably measurable component as compared to equity. As previously discussed in the chapter on long-term debt, the bond valuation basis is the present value of the future cash flows using the market rate of interest for debt instruments with similar attributes and risk. Any residual amount remaining is assigned to the equity component.
- The zero-equity method assigns the full valuation of the transaction to the debt component and a zero-value to the equity component.

Bonds Issued at Par – Residual Method

As an example, on January 1, Willowby Ltd. issues three-year, 8%, convertible bonds with a par value of $250,000 for $256,328 cash. Interest is payable annually on December 31. Each $1,000 bond may be converted into 80 common shares, which are currently trading at $12. Bonds without the conversion feature trade in the market at par.

Using the residual method, the present value of the bonds with the conversion feature is equal to the cash amount received of $256,328. This is compared to the present value of the bonds without the conversion feature or the par value of $250,000 (debt component). The difference between the two values is allocated to the embedded option (equity component).

Face value of the bond		$	250,000
Present value of the bond with option feature attached		$	256,328
Difference equals option valuation		$	6,328

The entry to record the issuance of the convertible bond is:

At each reporting date, each component would be reported according to their respective standard. For example, bonds would be reported at their amortized cost as a liability and the options at historical cost as contributed surplus in equity. In this case, the

bonds were issued at par so there is no premium or discount to amortize, and the bonds payable balance would remain at $250,000 until conversion or maturity.

If the market price of the shares increased to $16, bondholders would be motivated to convert the bonds to shares, even before maturity in three years. This is because each $1,000 would now be worth $1,280 ( ). The entry to convert would be:



Note that the carrying values (book values) at the time of conversion were the values used in the conversion entry, hence its name: the book value method. This method is required for both IFRS and ASPE when recording bond conversions, and it results in no gain or loss recognized or recorded upon conversion. Any accrued interest that was forfeited at the time of conversion would also be credited to common shares.

Conversely, if the share price did not increase, and the bonds reach maturity without conversion, the amount owing for the bond is payable to the bondholder and the contributed surplus (in some counties referred to as reserves) amount in equity will lapse. The entry for fully amortized bonds at maturity would be:



Bonds Issued at Par – Zero-Equity Method

For the zero-equity method, the policy choice for ASPE companies, the entry for the convertible bond issuance is straightforward since zero is assigned to the equity component:



The entry upon conversion would be:



The entry upon maturity without conversion would be:



Bonds Issued at a Premium or Discount – Residual Method

On January 1, Jason Inc. issues $300,000, five-year, 7% convertible bonds at 98. Interest is payable annually on December 31. Each $1,000 bond may be converted into 100 common shares, which are currently trading at $9. Bonds without the conversion feature trade in the market at 8%.

Using the residual method, the present value of the bonds at the market-based discounted amount, with the conversion feature, is $294,000. This is compared to the present value of the bonds, without the conversion feature, at the market rate of 8% (debt component). The difference between the two present values is allocated to the option (equity component).

(Face value of the bond $300,000)			
Fair market price with conversion feature ( )		$	294,000
Present value of the bond without the conversion feature at the market			
rate of 8%:			
PV = ($21,000 PMT, 8 I/Y, 5 N, $300,000 FV)		$	288,022
Difference equals option valuation		$	5,978

The entry to record the issuance of the convertible bond is:



As in the previous example, bonds would be reported as a long-term liability at their amortized cost and the contributed surplus for the options at historical cost in equity. In this case, the bonds were issued at 98, so the discount amount of $11,978 ( ) would be amortized over the five years using the effective method at 8%* for IFRS and ASPE (or the optional straight-line method for ASPE) until conversion or maturity.

*Interest calculation:

PV = (PMT, I/Y, N, FV)

+/- $288,022 PV = $21,000 PMT, I/Y, 5 N, $300,000 FV

I/Y = 8% rounded

The schedule for the effective interest method is shown below:



*Some rounding effects are present.

If the market price of shares increased, and all the bonds were converted into shares at the end of three years (prior to maturity), the entry to convert to shares would be:



Again, because of the book-value method accounting treatment, the carrying values at the time of conversion were the values used in the conversion entry above with no gain or loss recognized.

Bonds Issued at a Premium or Discount – Zero-Equity Method

With the zero-equity method option for ASPE companies, the entry for the bond issuance is straightforward since zero is assigned to the equity component. The straight-line method is used below to amortize the bond discount (ASPE option).



The entry upon conversion at the end of three years would be:



*  discount amortization per year



The entry when the bonds matured without conversion would also be straightforward, as the bonds would be fully amortized by this time:



A video is available on the Lyryx web site. Click Here to view the video.

Bonds Retired Prior to Maturity with Incentives

Sometimes a company will want to retire a bonds issue before maturity to reduce interest expenses. To facilitate this, any convertible bonds that are repaid prior to maturity will usually include a sweetener, which is added to the repayment proceeds to motivate the bondholders to sell. In this case, both the amounts paid to the bondholders and the sweetener must be allocated between the debt and equity components. Unlike the previous examples with no sweeteners, the additional funds added to the payout as a sweetener will result in a loss reported in net income.

For example, on January 1, 2020, Essessive Corp. offers 5-year, 6% convertible bonds with a par value of $1,000. Interest is paid annually on December 31. Each $1,000 bond may be converted into 150 common shares, which are currently trading at $3 per share. Similar bonds without the conversion feature carry an interest rate of 7%. Essessive issues 1,500 bonds at par and allocates the proceeds under the residual method. The entry to record the bond issuance using the residual method would be recorded the same way as par value bonds discussed earlier:



*PV = ($90,000 PMT, 7 I/Y, 5 N, $1,500,000 FV)

 interest payable each December 31

On January 1, 2022, immediately following the interest payment, Essessive Corp. decides to retire the convertible bonds early to reduce interest costs. They offer the bondholders $1,600,000 cash, the fair value of the convertible bonds at the time of early

retirement, plus a sweetener. The fair value of the debt portion of the payout for the convertible bond is $1,485,000. Because a sweetener is included, the $1,600,000 payout to the bondholders will result in a loss for the company, as shown in the entry below:



* Carrying value of bonds at the end of two years using the effective interest method = ($90,000 PMT, 7 I/Y, ( ) N, $1,500,000 FV)



***Retained earnings, options retired = carrying value of contributed surplus, convertible bond options ($61,503) - FV of equity portion allocated from payout amount (fair value for debt portion)

The $24,365 loss is the difference between the carrying value of the bond at the time of early retirement ($1,460,635) and the fair value of the debt component of $1,485,000. The reduction in equity of $53,497 is due to the difference between the carrying value of the contributed surplus, convertible bond options of $61,503, and the fair value of the equity component of $115,000 ( ).

If the early retirement were in the form of a conversion to common shares, plus an additional cash sweetener of $30,000, instead of a repayment of the debt in cash, the entry using the residual method under ASPE would be:



*



***

loss on redemption of bonds of $24,365

Under IFRS, the entire cash incentive of $15,000 is recorded as a debit to the loss account, eliminating the retained earnings account.

In summary, an early payout, or conversion of convertible bonds, usually requires a sweetener to motivate bondholders to accept the deal. This additional cash amount must be allocated between a loss, due to debt component of $24,365, and a reduction in equity, due to a capital transaction cost of $5,635, associated with the convertible capital options retired. The sum of the loss and the reduction to retained earnings should balance with the cash sweetener amount of $30,000. Other than the addition of the loss ($24,365) and the reduction in retained earnings ($5,635), the accounting treatment for early retirement is basically the same as

before (using book values). In other words, the carrying values of the debt ($1,460,635) and equity ($61,503) components are still used to determine the common shares amount ($1,522,138), as was the case in the earlier examples.

A video is available on the Lyryx web site. Click Here to view the video.

Presentation of Convertible Debt and Preferred Shares

At each reporting date, the debt and equity components for convertible instruments would be reported according to their respective standard. Bonds would, therefore, classify the debt component as a long-term liability at amortized cost and the options as contributed surplus in equity at historical cost:

Essessive Corp.			
Partial Statement of Financial Position			
January 1, 2020			
		2020	
Long-term liabilities			
Bonds payable, 6% annually, due January 1, 2025		$	1,438,497
Shareholders' Equity			
Paid-in capital:			
Contributed surplus, conversion rights		$	61,503

For convertible preferred shares, reporting as either a liability or equity would depend on the characteristics of the convertible preferred shares. The general rule is that if the company has little control over an obligation to issue common shares in exchange for the preferred shares, or if they must pay inordinately high dividends upon some threshold being met, the company must report these preferred shares as a liability because they represent an unavoidable obligation. Moreover, the dividends paid for preferred shares, classified as liabilities, would be reported in net income as an interest expense instead of a reduction to retained earnings, as is the case for preferred shares dividends without liability attributes. An example of convertible preferred shares classified as a liability would be mandatorily redeemable preferred shares, such as preferred shares that must be repurchased if common shares exceed some sort of threshold market price. In this case, the company clearly has an obligation over which it has little control. This classification as a liability is a requirement for IFRS companies in all instances. For ASPE companies, the liability classification is used when the likelihood of the obligation arising is high.

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15.4: Options, Warrants, Forwards and Futures

Options, warrants, forwards, and futures are all examples of derivatives. Derivatives are financial instruments whose value is derived from some underlying instrument, object, index, or event (an "underlying"). Put another way, a derivative represents a contract arising between two or more parties based upon the underlying. Its value is determined by fluctuations in the underlying, and as they have their own value, they can be bought and sold. Reasons for buying or selling may be to minimize risk (hedging) or to make a profit (speculation).

A hedge is an investment, such as a futures contract, whose value moves in an offsetting manner to the underlying asset. Hedging is comparable to taking out an insurance policy, for example, when homeowners in a fire-prone area takes out insurance policies to protect themselves from loss in the event of fire. There is a risk/reward trade-off inherent in hedging as it both reduces potential risk and carries an associated cost, such as the fire insurance policy premiums. That said, most homeowners choose to take that predictable loss by paying insurance premiums rather than risk the loss.

Managing foreign exchange rates provides another example of hedging. Fluctuations in foreign exchange rates can be either advantageous or detrimental to businesses depending on whether the exchange rate increases or decreases, and if the business is exporting or importing goods or services. For example, companies buying goods from another country on credit when the domestic currency exchange rate is rising, or selling goods to another country on credit when the foreign country's currency is rising, can reap significant gains. However, the opposite can also occur if the rates are decreasing, causing company profits to plummet. Companies can lower these risks by entering into a derivative contract to buy foreign currency at a future date at a specified exchange rate, thereby locking in the purchase price to a known quantity of foreign currency. In this way, a company can manage the risks associated with changes in the foreign exchange rates through hedging.

Speculation regarding derivatives is an effort to make a profit from an unknown outcome. Continuing with the example of foreign currency, if the change in foreign exchange rates favours the speculator, a profit can be made.

Options, warrants, forwards, and futures are all types of derivatives and each one is summarized below. An in-depth discussion of derivatives is covered in a more advanced accounting course.

Options

Call options give the options holder the right to buy an underlying instrument, such as common shares, at a specified price within a specified time frame. The options price is called the exercise, or strike, price and the option must be in the money. That is, the market price must be greater than the exercise price so that the options holder will benefit from exercising the options held. Call options are the most common type of option and employee stock options are a good example. Stock options will be discussed in the next section of this chapter and in the Chapter 19.

Put options are the opposite of call options, because they give the options holder the right to sell common shares at a specified price within a specified time frame back to the issuing company. If the market price of the shares should decline, the option holder can still sell their shares back to the issuing company at the higher specified price.

A written option is when a company sells options in exchange for giving the option holder the right to purchase the underlying shares at a future date. A written option represents an obligation to the company to issue the shares, if called by the option holder or redeem the shares if put by the option holder. For this reason, it is a liability to the company because of the obligation created. Conversely, a purchase option is when a company pays to purchase options giving the company the right to buy (call) or sell (put) the underlying shares from another company, at a future date, if they choose. There is a choice, so no obligation exists to the company holding the call or put options and therefore no liability to record.

Options have their own value which can increase or decrease in response to the changes in market value of the underlying instruments, such as shares. If the market value of shares increase, the options fair value will also increase. Options are to be remeasured to their fair value through net income at each reporting date. If the options are sold in the marketplace without exercising them for shares, any gain or loss upon sale is recorded to net income, and the options derivatives are removed from the books.

Insert journal entry:



OR



* Reported as either a financial asset or liability depending on if the account has a debit or credit balance.

If the options are exercised, the investment in shares is recorded as a debit, in addition to the entry shown above.

Warrants

Warrants are similar to call options except that they are only issued by the company itself and usually have longer time frames than options. Unlike options, warrants are usually attached to another financial instrument, such as bonds and shares.

Forward Contracts

With forward contracts, both contract parties make a commitment in advance to buy or sell something to each other at a mutually agreed-upon price at a future date. A common example is the purchase or sale of goods in foreign currencies between a supplier and a manufacturer.

Note that once the terms have been agreed upon, and the maturity date occurs, there is no option out of a forward contract. Also, for the contract to be acceptable to both parties, the two parties must hold opposite views as to what will happen to the underlying instrument, for example whether a currency exchange rate will increase or decrease. A forward contract can be privately negotiated and, if the two parties agree to the terms, price, and future date, a forward contract is considered to exist between them.

As an example, on November 15, Monnard Inc. agrees to buy $100,000 USD from Oncore Ltd. over the next 90-day period for $108,000 CAD. As nothing is exchanged upon the contract issuance, no accounting entry is required. However, on December 31, the company year-end, the exchange rate has changed, and $100,000 USD is now worth only $102,000 CAD. Despite this, Monnard Inc. is still committed to pay the agreed-upon price of $108,000 CAD and, therefore, a loss has occurred. The derivative must be remeasured to fair value at the reporting date and Monnard Inc. must record a loss as follows:



In contrast, Oncore Ltd. will record a corresponding gain and debit a foreign currency derivative asset account.

However, if Monnard Inc. actually purchased the $100,000 USD on December 31, the entry would include both the remeasurement to fair value loss of $6,000 as well as a credit to cash in a combined entry:



Futures Contracts

These contracts are like forwards contracts except that they are highly standardized in terms of price and maturity date so that they may be publicly traded in the stock market. Examples include commodities, such as agricultural products (cattle, corn, wheat), and precious metals (gold, silver). Publicly traded refers to the fact that futures contracts can be used by speculators, rather than used as a hedge against inflation by actual buyers. Speculators are looking to make money on a favourable change in the foreign exchange rate, meaning the actual delivery of the commodity rarely ever occurs.

For example, on November 15, instead of a forwards contract, Monnard Inc. bought a futures contract for $1,500 that entitles the company to buy $100,000 USD at a cost of $108,000 CAD on February 15. In this case, $1,500 is paid to obtain the futures contract from the stock market. The entry would be:



On December 31, company year-end, the exchange rate has changed, and $100,000 USD is worth only $102,000 CAD. This unfavourable drop means that the futures contract value will also drop. If the futures contract now has a negative value of ($1,000), a loss has occurred which Monnard Inc. must record as follows:



If the exchange rate had increased and $100,000 USD were now worth $111,000 CAD, a gain would be recorded as Monnard Inc.'s futures contract had fixed the price at $108,000 CAD. If the fair value of the futures contract increased to $2,000, Monnard Inc.'s entry to record the gain would be:



As can be seen from the two examples above, derivatives are measured at fair value with the gain or loss reported in net income. There are, however, two exceptions. The first relates to hedging and is beyond the scope of this textbook. The second is regarding derivatives that relate to a company's own shares which are to be recorded at historic cost and not fair value. An example would be warrants attached to common shares and employee stock option plans, which will be discussed next.

One theoretically interesting area to look at is purchase commitments, where a company orders goods from a supplier, followed by receiving the goods in the future. There are similarities between a purchase commitment and derivatives, such as futures or forwards contracts. For example, a purchase commitment is drafted and signed in advance and is connected to underlying goods that have value. The commitment will be settled sometime in the future. So, why are purchase commitments not recognized as a derivative? The main reasons are because the intent of a purchase commitment is to obtain the goods and purchase commitments have no intrinsic value of their own, and therefore cannot trade in the marketplace. Also, purchase commitments are not settled by any means other than taking possession of the goods. Conversely, futures contracts can be publicly traded on their own, without ever taking possession of the underlying goods. For these reasons, purchase commitments are not considered to be derivatives and are recorded as a purchase of goods, once the risks and rewards of the goods have passed from the seller to the purchaser.

15.4: Options, Warrants, Forwards and Futures is shared under a not declared license and was authored, remixed, and/or curated by LibreTexts.

15.5: Stock Compensation Plans

An employee stock option is commonly viewed as a complex call *option* on the common stock of a company, granted by the company to an employee as remuneration or reward. The belief is that employees holding common shares will be motivated to align themselves with the company's best interests. This is beneficial to the company as it allows them to retain valuable employees long-term in exchange for non-cash forms of compensation or benefits.

The most common stock option plans are employee stock option plans (ESOPs) and compensatory stock option plans (CSOPs), but stock appreciation rights plans (SARs) and other performance criteria based plans are also used in business.

Employee Stock Options Plans

These plans are relatively straightforward. In these plans, the employee is granted the option to purchase shares of the company. This is, therefore, not considered to be a compensation expense as the employee is simply given the opportunity to invest in the company's equity by purchasing shares. By holding company shares, they share in the dividends and capital appreciation of the share in the marketplace the same as any other shareholders.

For example, Besco Ltd. implements an ESOP in which employees can purchase options to buy company shares for $15 per share. The cost of the option is $2 and 20,000 shares are available within this plan. No entry is required at this time because no transactions have occurred yet.

On January 1, employees purchase 12,000 options:



If the market price of the shares later increased to $20 per share, the options will be "in the money," and employees holding these options will be motivated to purchase shares at a share price that is lower than the current share market price. If 8,000 of the 12,000 options were exercised to purchase shares at $15 each, the entry would be:



If the remaining options were not used by the end of the exercise period, the entry would be:



Compensatory Stock Options Plans

These plans are compensation based and are usually offered to key executives as part of their remuneration package. The executive is granted the option to purchase shares of the company in lieu of compensation, commencing on the exercise date and throughout the fiscal periods, until the expiry date. By holding company shares, the executives can share in the benefits of ownership, the same as with ESOPs. The difference is that the options are part of their compensation package and are not purchased for cash. Meaning that, as the employment service period is completed, compensation expense is to be allocated and recorded as an expense accrual.

If options are allowed to expire because the service requirement is not met, such as when an employee leaves the company, IFRS requires that this be treated prospectively as a change in estimate. In contrast, ASPE gives companies a choice to either treat prospectively as a change in estimate, or to record forfeitures as they occur.

On August 1, 2020, Silverlights Ltd. granted stock options to its chief executive officer. Details are as follows:

Option to purchase		10,000 common shares
Option price per share		$20
Fair value per common share on grant date		$18
Fair value of options on grant date		$17
Date when options can be exercised		August 1, 2022
Date when options expire		July 31, 2027

On August 1, 2022, 4,000 options were exercised when the fair value of the common shares was $25. Note that the fair value of the options on the grant date has to be determined using an option pricing model, or some other valuation technique, as there is no active market for employee stock options. The remaining stock options were allowed to expire. The company year-end is July 31, follows ASPE, and management chose to account for the expired options as they occurred.

On the August 1, 2020, grant date, no entry is recorded because the service period has only just begun and, as such, no economic event has yet taken place.

On July 31, 2021, year-end date, an adjusting entry to accrue compensation expense for one year of completed service or 50%:



On July 31, 2022, year-end date, the remaining accrual is completed:



The total contributed surplus for this plan is now $170,000
().

On August 1, 2022, exercise date for 4,000 options at the strike price:



On July 31, 2027, expiry date:



Stock Appreciation Rights and Performance-Based Plans

Stock Appreciation Rights Plans (SARs)

In this plan, employees' entitlement to receive cash-paid compensation is based on an increase in the fair value of a stated number of shares from the pre-existing share price over the exercise period. Note that no shares are actually issued. The share price is tracked, and the cash-paid compensation is based on the results of these tracked changes. This plan eliminates the need for employees to actually exercise the options, buy the common shares, and later sell the common shares, to realize the monetary gain. However, the issue is how to best measure the fair value of the shares between the grant date and exercise date. ASPE and IFRS

differ in their approach to this valuation, where IFRS requires the use of an options pricing model, while ASPE uses a less complex formula that calculates the difference between the pre-established share price with the market or fair value price on the exercise date for each share granted to the employee. For both standards, the total amount is allocated over the service period and recorded as compensation expense and a corresponding liability.

Performance-Based Plans

Some companies opt to also use other performance criteria, rather than simply the change in share prices. Other ratios, such as growth in sales, earnings per share, and return on assets, may be used as the basis for the compensation payment (which is allocated the same way as SARs, as explained above). Sometimes a performance-based plan will be offered to employees in combination with an options-based plan, and the employee can choose.

Disclosures of Compensation Plans

Some of the main disclosures include:

- Description of the compensation plan, including the numbers and dollar values of the options issued, exercised, forfeited, and expired.
- Description of the assumptions incorporated, and methods used, to determine the fair values.
- Total compensation expense included in net income and its related contributed surplus.

The reporting disclosures listed above are a simplified version of the more extensive disclosures required by the accounting standards. For example, BCE Inc.'s financial statements dedicated a significant number of pages to compensation information contained in Notes 2, 21, and 26.[1] The company also prepared a 61-page compensation discussion and analysis report to supplement the note disclosures. From this example, disclosures regarding compensation clearly go far beyond what is normally expected.

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15.6: Analysis

Complex financial instruments, including options, would be incorporated into liabilities and equity respectively. Refer to the other chapters on long-term debt and equity for details regarding analysis techniques for debt or equity instruments.

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15.7: IFRS/ASPE Key Differences

Item	IFRS	ASPE
Initial measurement – instruments with contingent settlement provisions	Treated as a financial liability.	Treated as a financial liability if the contingency is highly likely.
Measurement of debt and equity components	Residual method: Measure debt component first at net present value of future cash flows. The residual balance to equity.	Policy choice: 1. Residual method 2. Zero-equity method: Equity measured at zero and the balance to liabilities.
CSOP forfeitures	Measure forfeitures upfront as a change in estimate.	Policy choice to measure forfeitures upfront as a change in estimate or later as they occur.

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15.8: Chapter Summary

LO 1: Describe complex financial instruments and their role in accounting and business.

Companies obtain cash resources for future business operations and opportunities from internally generated free cash flow, from borrowing from a creditor (debt), and from investors through issuing shares. Historically, debt and equity sources were separate instruments. However, in recent decades hybrid (or complex) instruments that include both debt and equity attributes are now available to businesses. Examples include convertible bonds, convertible preferred shares, and various derivatives (such as options and warrants) all of which can be converted into common shares. These instruments are often simpler, cheaper, and quicker to obtain, and they offer greater flexibility and security to investors because of the embedded convertible options to common shares. These complex instruments also influence the perceptions of shareholders and the marketplace. As investors will only convert from the original instrument to common shares if it is favourable to do so, they send a positive signal to existing shareholders that the company is performing well. The issue from an accounting perspective is how to separate, classify, and value the debt and equity attributes during the instrument's life cycle of issuance, conversion, and retirement.

LO 2: Describe the basic differences in the accounting treatments for long-term debt and equity.

For complex financial instruments, once an acceptable method to separate the debt from the equity is determined, each component will follow its respective accounting standard as discussed in previous chapters. As such, it is important to understand the basics of debt and equity instruments so that the classification and amounts reported reflect their true underlying economic substance, rather than simply their legal form. For example, equity is measured and reported at historic cost and represents unsecured permanent capital of the company. As a return on their investment, shareholders receive a share of the profits through dividends, which are optional and not subject to income taxes for the company. Long-term debt consists of principal and interest expense, which must be paid when due and is secured by company assets. The debt has a negative effect on company liquidity and solvency ratios, and the interest expense reduces company income taxes. There are differences between IFRS and ASPE regarding amortization of methods and some disclosures of long-term debt.

LO 3: Describe the two methods acceptable to IFRS and ASPE to separate, classify, measure, and disclose complex financial instruments such as convertible debt and convertible preferred shares.

IFRS uses only the residual method for the accounting treatment of convertible debt, such as convertible bonds and preferred shares. This method estimates and allocates the fair value of the most reliable component first, usually the debt component. The residual amount remaining is allocated to the equity component. For the debt component, the valuation is based on the present value of the future cash flows using the prevailing market interest rate at issuance. In contrast, ASPE uses both the residual method and the zero-equity method. The zero-equity method assigns the full value to the debt component and a zero value to the equity component.

These methods are applied at the time of issuance for convertible debt, such as bonds that are issued at par or at a premium or discount. Bonds are subsequently measured at amortized cost. Bonds that are converted to common shares use the book value method to determine the valuations. The book value method uses the carrying values of the debt and contributed surplus at the time of conversion to determine the common shares amount (IFRS and ASPE). Since carrying values are the basis for the conversion, no gains or losses are recorded.

Convertible debt can also be retired prior to maturity, usually with an incentive, also known as a sweetener. This is used to motivate the bondholders to sell the debt back to the company or to convert their bonds into common shares. Both the amounts paid to the bondholders and the sweetener must be allocated between the debt and equity components. Because of the additional proceeds added as an incentive, gains or losses will occur. The sum of the gain or loss from the redemption of the bonds, and the proportionate share of the contributed surplus, must be equal to the additional proceeds paid as a sweetener. Disclosures of convertible debt, or convertible preferred shares, are the same as disclosures of other debt and equity instruments and securities. The determination of the classification, as either a liability or equity, is based on whether the company has any control over whether an obligation will arise from these convertible instruments. In cases where there is little or no control over the obligation, the transactions are reported as a liability (IFRS) or if the obligation is only highly likely (ASPE).

LO 4: Describe various derivatives such as options, warrants, forwards, and futures.

Options, warrants, forwards, and futures are all examples of derivatives. They are valued based on of the fluctuations in some underlying instrument, object, index, or event. If these derivatives have their own value, they can be bought and sold privately, or through the marketplace. Businesses will buy or sell to minimize risk (hedging) or to make a profit (speculation). An example of hedging can be seen in how companies handle the fluctuations in foreign exchange currency. For example, companies can obtain a derivative contract that locks in the exchange rate to manage these fluctuations, thereby hedging their risk. Options are another derivative that gives the options holder the right to purchase or sell common shares in a company at a specified price. The right to purchase common shares at a specified price is called a call option, for example employee stock options; whereas, the right to sell common shares at a specified price is called a put option. In either case, this will only occur if the specified price is favourable compared to the market price. Warrants have characteristics like options. Forward and future contracts are typically used to buy and sell any type of commodity, including currencies. In the case of a forward contract, once both parties agree on the terms the contract becomes binding. A futures contract is like a forwards contract except that it is standardized regarding price and maturity dates, allowing them to be bought and sold in the stock markets. Commodities such as agricultural products and precious metals are examples of futures contracts. Generally, derivatives are subsequently measured at their fair value with a gain or loss reported in net income, except for derivatives that relate to a company's own shares, which are at historic cost.

LO 5: Explain the accounting treatments and reporting requirements for stock options plans.

An employee stock option plan (ESOP) allows employees to purchase shares of the company at a specified price, generally offered as a reward by the company to the employee. As these employees are investing in the company, the proceeds of their shares purchases are recorded to equity. In contrast, a compensatory stock option plan (CSOP) is generally offered to key executives as part of their remuneration package. Their shares entitlement is accrued to compensation expense as earned. Stock appreciation rights (SARs) are an example of compensation based plans where compensation is paid based on the movement of the common shares price, but no actual shares are bought or sold. Performance-based plans use other performance indicators, such as growth in sales, as a basis for compensation. Required disclosures of compensation plans are extensive and include a description of the plan, the assumptions and methods used, and various other data such as the dollar values of the options issued, exercised, forfeited, and expired.

LO 6: Recall that analyses of complex financial instruments use the same techniques as those used in non-convertible debt and equity instruments.

LO 7: Explain the similarities and differences between ASPE and IFRS regarding recognition, measurement, and reporting of complex financial instruments.

While IFRS and ASPE are quite similar in this case, differences do remain. For example, regarding the issuance of complex financial instruments, ASPE provides the choice of either the residual method or the zero-equity method, whereas only the residual method is accepted for IFRS. Also, those instruments with contingent liabilities are treated as a liability for IFRS, but are only treated as such with ASPE if the contingency is highly likely. For options forfeitures in a CSOP, ASPE allows a policy choice to measure forfeitures upfront as a change in estimate or later, as they occur; whereas with IFRS, these must be measured upfront.

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15.9: References

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15.10: Exercises

15.1

On January 1, 2020, Largess Ltd. issued 1,000, 4-year, 6% convertible bonds at par of $1,000. Interest is payable each December 31. Each bond is convertible into 100 common shares, and the current fair value of each common share is $7 per share. Similar non-convertible bonds carry an interest rate of 8%.

Required:

a. Calculate the present value of the debt component.
b. Record the bond issuance if Largess Ltd. follows IFRS.
c. Record the bond issuance if Largess Ltd. follows ASPE.

15.2

Holloway Ltd. issued 600, $1,000 bonds at 102. Each bond was issued with 12 detachable warrants. After issuance, similar bonds were sold at 96, and the warrants had a fair value of $3.

Required:

a. Record the issuance of the bonds and warrants if Holloway Ltd. follows IFRS.
b. Assume now that Holloway Ltd. follows ASPE. Discuss the two alternative methods and record the issuance of the bonds and warrants for each method.
c. What effect does each entry have on the debt to total assets ratio?

15.3

Snowden Corp. issued 10,000 common shares upon conversion of 8,000 preferred shares. The preferred shares were originally issued at $10 per share and the contributed surplus account for the preferred shares had a balance of $12,000. The common shares were trading at $11.50 per share at the time of the conversion.

Required: Record the conversion of the preferred shares.

15.4

Rumpled Textures Inc. has $1 million of 7%, convertible bonds outstanding. Each $1,000 bond is convertible into 30 no-par value common shares. The bonds pay interest each January 31 and July 31. On July 31, 2020, just after the interest payment, the holders of $600,000 worth of these bonds exercised their conversion entitlement. On that date, the following information was determined:

Market price of the bonds			102
Market price of the common shares		$	26
Carrying value of the common shares		$	16
Balance in the contributed surplus – convertible bonds		$	150,000
Unamortized bond premium		$	80,000

The remaining bonds were not converted, and at their maturity date they were retired. The company follows IFRS.

Required:

a. Prepare the journal entry for the bond conversion on July 31. The company uses the book value method.
b. Prepare the journal entry for the remaining bonds at maturity, if not converted to shares.
c. What risks arise if bondholders choose to wait to convert the bonds?

15.5

Brownlesh Inc. issued $6 million of par value, 5% bonds at 99, and one detachable warrant was issued with each $100 par value bond. At the time of issuance, the warrants were selling for $5. Brownlesh Inc. follows ASPE.

Required: Prepare the journal entry for the issuance of the instrument for both options allowed by ASPE.

15.6

Irvin Corp. issued $2 million of par value, 7%, convertible bonds at 98. If the bonds had not been convertible, the fair value at the time of issuance would have been 97. Irvin Corp. follows ASPE.

Required: Prepare the journal entry for the issuance of the instrument for both options allowed by ASPE.

15.7

On August 1, 2020, Venus Ltd. issued $400,000 of 6%, non-convertible bonds at 102, which are due in ten years. In addition, each $1,000 bond was issued with 10 detachable stock warrants, each of which entitled the bondholder to purchase one of Venus Ltd.'s no-par value common shares for $60. The bonds without the warrants would normally sell at 99. On August 1, 2020, the fair value of Venus Ltd.'s common shares was $50 per share. Venus Ltd. follows IFRS.

Required: Prepare the journal entry for the issuance of the instrument allowed by IFRS.

15.8

On November 1, 2020, Norfolk Island Ltd. called its 8% convertible bonds for conversion, and $6 million of par value bonds were converted into 600,000 common shares. On this date, there was $350,000 of unamortized bond discount, and the company paid an additional $350,000 cash sweetener to the bondholders. At the time of conversion, the balance in the contributed surplus, convertible bonds account was $125,000, and the bond's fair value without the conversion feature was $5.95 million. The company follows IFRS and uses the book value method to record the entry for conversion.

Required: Prepare the conversion entry.

15.9

On September 1, 2020, Carmel Corp. sold 4,500 of its $1,000 face value, ten-year, 8%, non-convertible bonds with detachable warrants at 101 plus accrued interest. Each bond carried two detachable warrants and each warrant was for one common share at the option price of $12 per share. Shortly after issuance, the warrants were selling for $6 each. Assume that no fair value is available for the bonds. Interest is payable on December 1 and June 1. Carmel Corp. follows ASPE.

Required: Prepare the journal entry to record the issuance of the bonds under both options available for ASPE companies.

15.10

On January 1, 2020, Deliverance Corp. offers five-year, 9% convertible bonds with a par value of $1,000. Interest is calculated every January 1. Each $1,000 bond may be converted into 500 common shares, which are currently trading at $3.50 per share. The effective interest rate on bonds is 10%. Deliverance Corp. issues 1,500 bonds at par and allocates the proceeds under the residual method, using debt first with the remainder of the proceeds allocated to the option.

On January 1, 2022, right after the interest payment, Deliverance Corp. offers an additional cash premium of $10,000 to the bondholders to convert. The bond's fair value at the conversion time is $1,470,000, without the conversion feature. The company follows IFRS.

Required:

a. Record the entry(ies) for the bond issuance.
b. Record the entry(ies) for the bond conversion.
c. Assume now that the company follows ASPE. Record the entry(ies) for the bond conversion.

15.11

On January 1, 2020, Atlantis Corp. offers three-year, 5% convertible bonds with a par value of $1,000. Each $1,000 bond may be converted into 100 common shares, which are currently trading at $5 per share. The effective interest rate on bonds is 8%. Atlantis Corp. issues 1,000 bonds at par and allocates the proceeds under the residual method using debt first with the remainder of the proceeds allocated to the option.

On January 1, 2022, right after the interest payment, Atlantis Corp. decides to retire the convertible debt early and offers the bondholders $1,100,000 cash, which is the fair value of the instrument at the time of early retirement. The fair value of the debt portion of the convertible bonds is $981,462. The company follows IFRS.

Required:

a. Record the entry(ies) for the bond issuance.
b. Record the entry(ies) for the bond retirement.

15.12

On January 1, 2020, Bronds Inc. entered into a forward contract to purchase $50,000 US for $60,000 CAD in 30 days. On January 15, the present value of the future cash flows of the contract was $25.

Required:

a. Prepare the related entries for January 1, 2020, and January 15, 2020.
b. Assume that the instrument is now a futures contract that is publicly traded on the futures exchange. Bronds Inc. paid a deposit of $20 with the broker. On January 15, the present value of the future cash flows of the contract was $25. Prepare the entries, if any, for January 1, 2020, and January 15, 2020.

15.13

On January 1, 2020, Twitter Co. granted stock options (CSOP) to its chief executive officer. The details are as follows:

Option to purchase through a stock option plan		10,000 common shares
Options share price		$34 per share
Fair value of shares on grant date		$30 per share
Fair value of options on date of grant		$20 per share
Stock options exercise start date		January 1, 2022
Stock options exercise expiry date		December 31, 2027

On January 1, 2023, 7,000 of the options were exercised when the fair value of the common shares was $45. The remaining stock options were allowed to expire. The chief executive officer remained with the company throughout the period. The company follows ASPE.

Required: Prepare all related journal entries for the stock option plan for:

- January 1, 2020
- December 31, 2020
- December 31, 2021
- January 1, 2023
- December 31, 2027

15.14

On November 1, 2020, Agencolt Inc. adopted a stock option plan that granted options to employees to purchase 8,000 shares. On January 1, 2021, the options were granted and were exercisable within a two-year period beginning January 1, 2023 (if the employees were still employed by the company at the time of the exercise). The option price was set at $10 per share and the total compensation package was estimated to be worth $200,000, without forfeitures.

On May 1, 2023, 3,000 options were exercised when the market price of Agencolt Inc.'s shares were $15 per share. The remaining options lapsed in 2024 when some of the employees resigned from the company. The company follows IFRS and the initial assumption was that there would be no forfeitures.

Required: (Round final answers to the nearest whole number.)

a. Prepare all related journal entries for the stock option plan for the years ended December 31, 2021, to December 31, 2024, inclusive. Assume that the employees who resigned had fulfilled all their obligations to the employer at the time they purchased any stock options in May of 2023.
b. What is the significance of the $15 per share regarding the decision to exercise the right to purchase shares?

1. For information on the extent of disclosures required regarding compensation, refer to BCE (2013) and BCE (2015), notes 2, 21, and 26, starting at page 125.

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CHAPTER OVERVIEW

Chapter 16: Income Taxes

Double Irish with a Dutch Sandwich

In October 2014, readers of business periodicals may have wondered if the headlines were describing the writers' lunch orders. However, the news about the "Double Irish" and the "Dutch Sandwich" dealt with the more complicated issue of multinational tax avoidance. In October 2014, the government of Ireland announced changes to legislation that would effectively phase out the "Double Irish" tax-planning structure favoured by many American technology companies such as Apple, Google, LinkedIn, IBM, Yahoo, and Microsoft. The structure, while perfectly legal, was criticized because it resulted in American corporations paying very little tax on their operations outside of the United States. Some critics have claimed that these types of structures allow multinational companies to avoid paying an equitable share of the tax burden.

The structure required the incorporation of two Irish companies, one of which was considered by Irish law as being resident of an offshore, low-tax jurisdiction (typically countries like Bermuda or the Bahamas). Through a series of arrangements and transactions involving the licensing of intellectual property, the parent company could essentially move profits out of a high-tax jurisdiction to a low-tax jurisdiction. The "Dutch Sandwich" involves the addition of another subsidiary incorporated in the Netherlands, which takes advantage of the European Union (EU) rules that allow tax-free transfers between companies resident in EU countries.

The legislation introduced by the Irish government will eliminate the effectiveness of the structure because new companies registered in Ireland will now also have to be resident in Ireland. Critics have noted, however, that the legislation only applies to newly incorporated companies and that existing companies will have until 2020 to comply with the rules. It was also noted that, at the same time, the Irish government introduced a "knowledge development box," which would essentially allow for a lower tax rate on profits derived from intellectual property. Other critics observed that eliminating the "Double Irish" structure might simply result in EU-based tax havens such as Malta becoming more popular.

Although the effects of the new legislation have yet to be fully realized, the long time-frame allowed in the grandfather clause will likely mean that companies will simply find other ways to minimize their tax payments. The fact that companies invested substantial resources in the planning and development of these tax structures should make it clear that income taxes are a significant issue for company management. Income taxes can be a material expense item on many companies' income statements, so the use of these types of tax structures should not be surprising.

(Source: The Economist, 2014)

Learning Objectives

After completing this chapter, you should be able to:

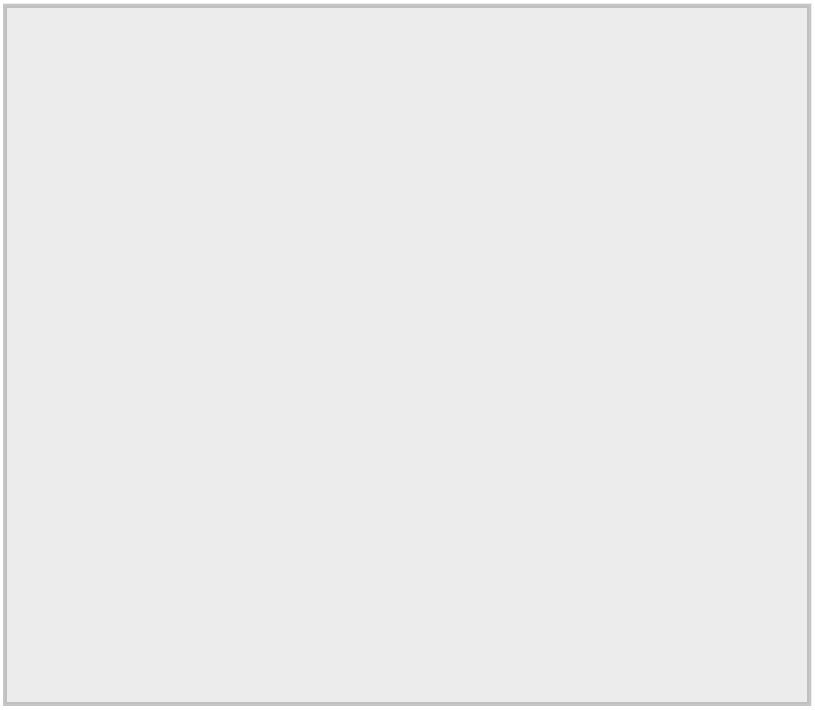
- Explain the relationship between taxable profit and accounting profit and calculate current taxes payable.
- Explain what permanent and temporary differences are and describe the deferred tax effects of those differences.
- Calculate the deferred tax effects of temporary differences and record the journal entries for current and deferred taxes.
- Determine the effect of changes in tax rates and calculate current and deferred tax amounts under conditions of changing rates.
- Analyze the effect of tax losses and determine the appropriate accounting of those losses.
- Explain the rationale for the annual review of deferred tax assets and describe the effects of this review.
- Prepare the presentation of income tax amounts on the balance sheet and income statement and explain the disclosure requirements.
- Explain the key differences between the treatment of income taxes under IFRS and ASPE.

Introduction

The levy of taxes is a well-established method for governments to raise the funds necessary to carry out its various programs and initiatives. There are, of course, always vigorous debates about the appropriate level of taxation and the uses to which the taxation

proceeds are put, but it is an inescapable truth that governments require some form of taxation revenue to function. One form of taxation that is commonly used is an *income tax*. Most of us are familiar with the application of personal income tax, as this type of tax is levied on employment and other forms of personal income. Governments also raise funds through assessing income taxes on corporate profits. This practice raises some interesting and complex accounting questions, and it is these questions that will be addressed in this chapter. We will not, however, be examining the processes involved in preparing corporate tax returns or the development of sophisticated tax structures like the one described in the opening vignette, as our focus is on the financial accounting and reporting issues. As well, we will not be looking at other forms of taxation, such as value-added taxes or payroll taxes, as these topics have been discussed in previous chapters.

Chapter Organization



16.1: Current Income Taxes Payable
16.2: Differences Between Accounting and Taxable Profit
16.3: Deferred Tax- Effect of Temporary Differences
16.4: Tax Rate Changes
16.5: Unused Tax Losses and Tax Credits
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16.8: IFRS/ASPE Key Differences
16.9: Appendix A- Accounting for Income Taxes under ASPE
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16.11: References
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16.1: Current Income Taxes Payable

When a company completes a fiscal year, it will produce a set of financial statements. In most jurisdictions, the financial statements will be the starting point for the income tax calculation. A corporate tax return will usually start with the *net income before taxes* or *accounting profit* taken directly from the company's income statement. This amount will then be subject to a number of adjustments until the final result, the taxable profit or taxable income, is determined. It is on this taxable profit that the corporate income tax will then be levied.

There are a number of reasons that taxation authorities require adjustments to the accounting profit before levying the tax. As we have seen in previous chapters, there are several areas in accounting standards where significant judgments or estimations are required. As taxation regulations are written into laws, the authorities need to create more certainty in interpretation to enable enforcement. Thus, some types of subjectively determined amounts that are acceptable under IFRS may not be considered appropriate for tax calculation purposes. Another reason is the need for consistency. Although IFRS allows companies the flexibility to choose among different acceptable accounting policies, taxation authorities are more concerned with fairness and transparency, which often requires a higher level of consistency in treatment of certain types of transactions. A third reason is the desire of governments to use the taxation system as a tool to achieve policy goals. For example, if a government wanted to encourage investment in a specific industry sector, it could allow certain tax incentives to those companies that invest in the property, plant, and equipment required for those particular industry activities. These incentives may create a difference in the way accounting profit and taxable profit are calculated.

Regardless of the reasons for the differences, the accountant's objective is to properly record the appropriate income tax expense and outstanding income tax liability at the end of the year. The simplest way to do this is to take the amount of tax owing, as determined on the corporate tax return, and record it. Let's look at an example to see how this would work.

Assume that for financial statement purposes, a company reports revenue from a long-term contract on the basis of services rendered, which results in $30,000 net revenue per year over a two-year period. As well, assume that no cash is received until the end of the second year, and that the taxation authorities tax this revenue at a rate of 20% only when the cash is received. Thus, no tax would be payable in the first year, and $12,000 ( ) tax would be payable in the second year. If we simply record the tax expense when the taxation authority assesses it, the company's income statement would look like this:

		Year 1			Year 2	
Income before tax		$	30,000		$	30,000
Income tax expense			0			12,000
Net income		$	30,000		$	18,000

This is clearly not a satisfactory result, as the income tax expense has not been properly matched to the revenue that created it. This approach, sometimes referred to as the taxes payable method, is not allowed under IFRS due to this improper matching. It is, however, allowed under ASPE, which will be discussed further in the Appendix.

To properly convey the economic substance of the transactions, the income tax expense should be $6,000 per year, which would result in net income of $24,000 per year. This result would properly show how the reported income is attracting a tax liability, even though the actual levy of the taxes does not occur until year 2. Thus, in year 1, the company has created a *deferred* tax liability that will not need to be paid until year 2. It is these deferred tax amounts that create complications in accounting, and as such, we need to understand their nature in more detail.

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16.2: Differences Between Accounting and Taxable Profit

There are a variety of causes of the differences between accounting profit and taxable profit. These can be summarized as follows:



Let's look at each of these situations.

Permanent Differences

These differences arise when an item is included in one type of reporting (accounting or tax) but is permanently excluded from the other type of reporting. Items that are included in the determination of accounting profit but not taxable profit can be both revenue and expense items. An example of a revenue item would be a dividend received from another company that is not taxed in the reporting jurisdiction. Many jurisdictions allow this tax-free flow of inter-corporate dividends. In this case, the dividend would be reported on the company's statement of profit, but would never be taxed. An example of an expense item would be a sports club membership for the company's executive officers. Many businesses consider this type of item to be an appropriate form of promotion and business development, but many tax authorities do not allow this to be deducted when calculating taxable profit. Items that are included in taxable profit but never in accounting profit are less common. These include such items as certain depletion allowances allowed for natural resources and certain types of capital taxes that are not based on income.

The accounting treatment for permanent differences is quite straightforward. Because these items do not affect future periods, there is no effect on future taxes. Thus, the amount is simply included (or excluded) in the determination of current taxable profit and the resulting tax payable is reported as a liability.

Temporary Differences

We can further classify temporary differences as follows:



Note that the items are classified as being either taxable or deductible. This feature refers to the item's effect on *future* tax calculations: taxable temporary differences increase future tax payable while deductible temporary differences decrease future tax payable. For example, a warranty expense to reflect the cost of future repairs may be accrued for accounting purposes, but the appropriate tax law does not allow any deduction in determining taxable profit until the repairs are actually made. In this case, the expense is a deductible temporary difference because it will allow for a deduction against taxable profit in a future period when the repairs actually occur.

The following are some common examples of deductible and taxable temporary differences:

	Revenue Item	Expense Item
Taxable	Construction revenue	Capital allowance in excess of depreciation
	Instalment sales	Pension funding in excess of expense
	Unrealized holding gains	Certain prepaid expenses
Deductible	Subscriptions paid in advance	Capital allowance less than depreciation
	Royalties and rent paid in advance	Pension expense in excess of funding
	Sale and leaseback gains	Warranty accruals
		Litigation accruals
		Unrealized holding losses

These examples only represent a sample of the types of items that can result in temporary differences. In determining the tax expense for the year, the accountant must consider the effect on all items for which the accounting treatment and the tax treatment are different. For example, with construction revenue, the company will normally choose the percentage of completion method to recognize revenue for accounting purposes. However, many tax jurisdictions will allow the company to defer the recognition of revenue on a long-term construction contract until the project is completed. This will result in a future taxable amount, as future revenue for tax purposes will be greater since the revenue has already been recognized for accounting purposes.

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16.3: Deferred Tax- Effect of Temporary Differences

An important point in understanding the effect of temporary differences on the company's tax expense is the fact that temporary differences reverse themselves. That is, whatever effect the temporary difference has on the current tax expense, it will have an opposite effect in some future period. To determine the amount that will reverse in the future, we first need to consider how the temporary difference is calculated. IAS 12 defines a temporary difference as the "differences between the carrying amount of an asset or liability in the statement of financial position and its tax base" (CPA Canada, 2016, Accounting, IAS 12.5). Note that this definition uses a balance sheet perspective in that it focuses on the balances in the statement of financial position rather than on revenue and expense items recorded in the period. This is consistent with the conceptual framework, which defines revenues and expenses in terms of changes in the net assets of the business. To further understand this definition, we need to consider the item's tax base, which is "the amount attributed to [the] asset or liability for tax purposes" (CPA Canada, 2016, Accounting, IAS 12.5). The tax base of an asset is the amount that will be deductible in future periods against taxable economic benefits when the asset's carrying amount is recovered. If there is no future taxable benefit to be derived from the asset, then the tax base is equal to the carrying amount. The tax base of a liability is its carrying amount, less any amount that will be deductible in future periods with respect to the item. For unearned revenue, the amount that is deductible in the future can be thought of as the amount of revenue that is not taxable.

These definitions can be best understood by looking at a few examples:

- Goods are sold on credit to customers for $6,000, creating an account receivable on the company's records. This asset has a carrying value of $6,000 and tax law requires that the amount to be reported as revenue in the period of the sale. Thus, the amount is fully taxable in the current period and will not be taxable in the future period. Because there is no future taxable benefit derived from this asset, its tax base is $6,000 (i.e., equal to its carrying value) and there is no temporary difference.
- A company reports an accrued liability for warranty costs of $72,000, which is its carrying value. This amount will not be deductible for tax purposes until the costs are actually incurred. The tax base is the carrying value less the amount deductible in future periods ( ), or $0. Thus, there is a deductible temporary difference of $72,000.
- A company purchased a piece of equipment for $100,000 several years ago. The current balance of accumulated depreciation is $36,000, thus the carrying value is $64,000. For tax purposes, accelerated capital allowances of $52,000 have been claimed and, therefore, the remaining balance that can be claimed for tax purposes in the future is $48,000. The tax base is $48,000 and there is a taxable temporary difference of $16,000 ( ).
- Current liabilities include $21,000 of unearned subscription revenue that was paid in advance and the revenue was taxed in the current period when it was received. The tax base is the carrying value ($21,000) less the amount that is deductible in the future ($21,000, representing the revenue that will not be taxable), or $0. Thus, there is a deductible temporary difference of $21,000 ( ).
- Included in current liabilities are accrued fines and penalties for late payment of taxes in the amount of $8,000. These are not deductible for tax purposes. The tax base is, therefore, $8,000 ( ). There is no difference between the carrying value and the tax base. This is a permanent difference that only affects current taxes, not future taxes.

There are many other examples of temporary and permanent differences. The definitions above should always be applied to determine if a temporary difference exists or not, as this will determine the need to record a deferred tax amount. In some cases, deferred tax balances may result from a situation where there is no asset or liability recorded on the balance sheet. For example, a company may incur a research expense that cannot be capitalized under IFRS. However, the amount may be deductible in a future period against taxable income. In this case, there is no carrying value, as there is no asset, but there is a future deductible amount. This would create a deductible temporary difference.

15.3.1. Calculation of Deferred Tax

Once the temporary and permanent differences have been analyzed, the deferred tax amounts can be calculated and recorded. Let's consider an example where the accounting depreciation and capital allowance for tax purposes are different.

A company purchases an asset on January 1, 2021, for $90,000. For accounting purposes, it will be depreciated straight-line over a three-year useful life with no residual value. For tax purposes, assume that capital allowances can be claimed in the first year equal

to 50% of the asset's cost, and in the second and third years equal to 25% of the asset's cost. The carrying values and tax values will, therefore, be calculated as follows:

	Accounting Records			Tax Records		
	2021	**2022**	**2023**	**2021**	**2022**	**2023**
Cost	90,000	90,000	90,000	90,000	90,000	90,000
Accumulated depreciation/	30,000	60,000	90,000	45,000	67,500	90,000
Cumulative capital						
allowance						
Carrying amount/tax base	60,000	30,000	0	45,000	22,500	0

The temporary differences are calculated as follows:

2021:	=		taxable temporary difference
2022:	=		taxable temporary difference
2023:	=	nil temporary difference	

The company reports net income of $100,000 in 2021, $120,000 in 2022, and $150,000 in 2023 and pays tax at a rate of 20% on its taxable income. Assume that there are no other differences between accounting and taxable income except the depreciation and capital allowances.

Tax payable in each year would be calculated as follows:

	2021		**2022**		**2023**
Accounting income	100,000		120,000		150,000
Add non-deductible depreciation	30,000		30,000		30,000
Subtract deductible capital allowance	(45,000)		(22,500)		(22,500)
Taxable income	85,000		127,500		157,500
Tax rate	20%		20%		20%
Tax payable	17,000		25,500		31,500

Note that the tax payable above is the amount of expense that would be recorded if the taxes payable method were used, which is only allowed under ASPE.

The deferred tax each year is calculated as follows:

	2021		2022		2023
Temporary difference	15,000		7,500		0
Tax rate	20%		20%		20%
Deferred tax liability at end of year	3,000		1,500		0
Less previous balance	–		(3,000)		(1,500)
Adjustment required in year	3,000		(1,500)		(1,500)

Note that in 2021, the temporary difference creates a deferred tax liability. This is because the capital allowance claimed is greater than the accounting depreciation, meaning less tax is paid in the current year but more will be paid in future years. In 2022 and 2023, the temporary difference reverses itself.

The company would record the following journal entries each year for the tax amounts:



The deferred tax income amounts in 2022 and 2023 represent a *negative expense*, or a recovery of the expense that was previously charged in 2021. This represents the tax effect of the reversal of the temporary difference. This type of negative expense may sometimes be referred to as a deferred tax benefit.

Excerpts from the company's income statements over the three years will look like this:

		2021		2022		2023
Income before tax		100,000		120,000		150,000
Income taxes:						
Current		(17,000)		(25,500)		(31,500)
Deferred		(3,000)		1,500		1,500
Net income		80,000		96,000		120,000

Note that each year the net income can be calculated as the income before tax multiplied by [redacted] (i.e., [redacted]). The reporting of the deferred tax amount has achieved proper matching by allocating the correct total tax expense to each period, which was the objective of the example examined in section 15.1.

Also note that even though the temporary difference reverses over a period of two years, we have not attempted to account for the time value of money. IAS 12 explicitly prohibits the discounting of future tax amounts, as it views the prediction of temporary difference reversals too complex and impractical. The prohibition of discounting is a way to maintain comparability between companies and acknowledges the trade-off between the costs and benefits of this type of information production.

15.3.2. A More Complex Example

Let's now look at a more complex example involving a deferred tax asset and a permanent difference.

A company that sells computer printers offers a two-year warranty on each model sold. The fair value of the warranty cannot be independently determined, so the company uses the expense approach to determine the provision for the warranty liability. (See the current liabilities chapter for further details of the application of this approach.) In 2021, the total provision determined for future warranty costs was $80,000. The company expects that the actual repair costs will be incurred as follows: $20,000 in 2022 and $60,000 in 2023. No warranty repairs were incurred in 2021 when the sales were made. In the jurisdiction where the company operates, warranty costs are only deductible for tax purposes when they are actually incurred. As well, in 2022 the company received notice of a $5,000 penalty assessed for violation of certain consumer protection laws, and this penalty is not deductible for tax purposes. The company reported accounting income of $320,000 in 2021, $350,000 in 2022, and $390,000 in 2023.

The warranty liability reported in 2021 represents a deductible temporary difference because it results in amounts that will be deductible against future taxable income (i.e., when the warranty repairs are actually incurred). This will result in deferred tax asset originating in 2021 and then reversing in 2022 and 2023. We can analyze this temporary difference as follows:

	Accounting Records			**Tax Records**		
	2021	**2022**	**2023**	**2021**	**2022**	**2023**
Carrying amount, opening	80,000	80,000	60,000	0	0	0
Warranty costs incurred in year	0	20,000	60,000	0	20,000	60,000
Carrying amount, closing	80,000	60,000	0	0	0	0

Note that the calculation of the carrying value for tax purposes, or tax base, follows the general rule described previously for liabilities (i.e., the tax base is the carrying value for accounting purposes less the amount deductible against future taxable income). Thus, the tax base is always nil because the carrying value for accounting purposes always represents the amount deductible against future taxable income.

The temporary differences are calculated as follows:

2021: [redacted]	=	[redacted]	deductible temporary difference
2022: [redacted]	=	[redacted]	deductible temporary difference
2023: [redacted]	=	nil temporary difference	

The penalty incurred in 2022 represents a permanent difference, as this amount will never be deductible for tax purposes. Thus, this will only affect the current taxes in 2022 and will have no effect on deferred taxes.

If we assume a 20% tax rate, the calculation of tax payable will be as follows:

	2021		2022		2023
Accounting income	320,000		350,000		390,000
Add non-deductible penalty	0		5,000		0
Add non-deductible warranty provision	80,000		0		0
Subtract deductible warranty costs	(0)		(20,000)		(60,000)
Taxable income	400,000		335,000		330,000
Tax rate	20%		20%		20%
Tax payable	80,000		67,000		66,000

The deferred tax each year would be calculated as follows:

	2021		2022		2023
Temporary difference	80,000		60,000		0
Tax rate	20%		20%		20%
Deferred tax asset at end of year	16,000		12,000		0
Less previous balance	–		(16,000)		(12,000)
Adjustment required in year	16,000		(4,000)		(12,000)

The originating temporary difference in 2021 creates a deferred tax asset, which means that more tax is being paid in the current year, but less tax will be paid in future years when the temporary difference reverses itself.

The company will record the following journal entries each year for the tax amounts:



Excerpts from the company's income statements over the three years will look like this:

		2021		2022		2023
Income before tax		320,000		350,000		390,000
Income taxes:						
Current		(80,000)		(67,000)		(66,000)
Deferred		16,000		(4,000)		(12,000)
Net income		256,000		279,000		312,000

In 2021 and 2023, the total tax expense can be calculated as the income before tax multiplied by the tax rate. Therefore, as previously discussed, proper matching has been achieved. In 2022, the calculation does not reflect this result because of the effect of the permanent difference. The permanent difference creates a difference between tax and accounting income that will not reverse in future periods. Thus, there will be a permanent difference between the nominal and effective tax rate in that year only. We can see this in 2022, where the accounting income multiplied by the nominal tax rate is $70,000 ( ), but the total tax expense is $71,000 ( ). The $1,000 difference is due to the effect of the permanent difference, which results in an effective tax rate of 20.29% ( ). Proper matching has still been achieved in this year with respect to the temporary difference, but the permanent difference cannot be matched to a different period.

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16.4: Tax Rate Changes

So far our examples have assumed a constant tax rate over the period of temporary difference reversal. However, this may not always be the case, as tax rates and regulations are subject to periodic changes as governments implement new policy directions. IAS 12 requires the deferred tax amounts to be measured at the rate expected to be in effect when the related asset is realized or the liability is settled. The standard further states that the rates should be enacted, or substantively enacted, by the end of the reporting period. Substantively enacted means that although the rate may not be formalized into law at the end of the reporting period, it has been publicly announced by the government and is very likely to be subsequently altered through a legislative process. Let's look at an example of how this is applied.

A company reports $30,000 of instalment revenue in 2021 that will be paid in two equal instalments in 2022 and 2023. Additionally, the revenue will be taxed when the payments are actually received. The $30,000 receivable thus creates a taxable temporary difference that reverses over the next two years, and this temporary difference will result in a deferred tax liability. The government has recently announced that tax rates will be implemented as follows: 2021 – 25%, 2022 – 22%, and 2023 – 20%.

The deferred tax liability would be measured as follows:

Total temporary difference arising in 2021	$	30,000				
Amount reversing in 2022		(15,000)		=	$	3,300
Amount reversing in 2023		(15,000)		=	$	3,000
Total	$	0			$	6,300

Thus, on the company's 2021 balance sheet a deferred tax liability of $6,300 would be reported and, on the 2021 income statement, a deferred tax expense of $6,300 would also be reported.

This situation is quite straightforward, as we simply apply the appropriate enacted rate to the amount of the reversing temporary difference each year. However, there can be complications if the reversal can be realized in different ways. For example, many tax jurisdictions apply different tax rates to capital gains and ordinary income. In order to properly determine the deferred tax amount related to an asset, an assumption needs to be made about how the temporary difference will be realized (i.e., will the asset be used or sold during the reversal period?). IAS 12 states that the rate applied should be consistent with the company's intended use of the asset. In other words, two identical assets could result in different deferred tax amounts if one is to be sold and the other is to be used in operations. This difference in treatment reflects the conceptual framework's requirement to convey the economic truth of a transaction, rather than the mere substance.

A more complicated situation arises when tax rates are changed after the deferred tax amount has already been established in previous years. This type of change is treated as a change in estimate and, as such, should be treated prospectively. This means that an adjustment is made in the current period, but no attempt is made to restate prior years. This treatment is considered reasonable as management would not have known about the tax rate change when the deferred tax balance was originally established.

Let's revisit the previous example, with one change. Assume that change in tax rates was not announced until the middle of 2022, and that the 25% rate was already in effect for 2021. At the end of 2021, the company would have recorded a deferred tax liability of $7,500 ( ).

In 2022 when the rate change is announced, the company needs to recalculate the deferred tax liability and adjust it accordingly. As such, the following journal entry would be required:



At the end of the year when the temporary difference partially reverses, the following journal entry would be required:



Thus, in 2022 the company will report a total deferred tax income of $4,500, which represents both the effect of the rate change on the opening temporary difference and the effect of temporary difference reversal during the year. Although this amount may be reported as a single line item on the income statement, IAS 12 does require separate disclosures for the effect of the temporary difference reversal and the effect of the rate change.

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16.5: Unused Tax Losses and Tax Credits

A company may, at times, suffer a taxable loss in a given year. Because income tax is based on a percentage of taxable income, this situation results in no tax being payable. However, it does not result in a negative tax (i.e., a refund). Instead, companies are often allowed to apply the taxable loss to other taxation years where taxable profits were earned. Although the tax laws vary by jurisdiction, it is common to allow the loss to be carried back for a certain number of years and carried forward for a certain number of years. In Canada, the current law allows the loss to be carried back 3 years and carried forward 20 years.

When a loss is carried back and applied to previous years' taxable income, the result will be a refund of taxes paid in that year. This will be achieved by filing amended tax returns for the previous year(s) showing the application of the loss, and then requesting a refund of the taxes previously paid. It is important to note that the rate at which the taxes are refunded will be *the rate in effect in the previous year*, not the current tax rate.

Consider the following example. In 2021, a company suffers a taxable loss of $100,000. Taxable incomes reported in the three previous years were as follows:

2018	$	10,000
2019		86,000
2020		90,000

The tax rates in effect were 30% in 2018, 25% in 2019 and 2020, and 20% in 2021. The loss incurred in 2021 will be carried back and taxes will be recovered as follows:

2018		=	$	3,000
2019		=		21,500
2020		=		1,000
Total refund			$	25,500

Note that the total amount carried back cannot exceed the amount of the current year loss ($100,000). It is common practice for companies to apply the loss to the oldest tax years first, and then apply remaining amounts to more recent years. However, other patterns of application are also possible, depending on the circumstances of the company and the tax rates in effect each year.

In the above example, the company will record the following journal entry in 2021:

The company's income statement will be presented as follows:

Loss before tax			(100,000)
Income taxes:			
Current tax income from loss carryback			25,500
Net loss			(74,500)

The income tax receivable will be presented as a current asset on the balance sheet, as it should be recovered within one year. No other accounting entries are required in this case.

A more complicated situation occurs when the amount of the current year tax loss exceeds the taxable income of the previous three years. In this case, a portion of the current tax loss is unused and may be carried forward. When carrying forward a tax loss, the

company is expecting to apply it to a future year when taxable income is once again earned. However, this now creates uncertainty, because the company's ability to earn taxable income in the future is not guaranteed. IAS 12 states that a deferred tax asset can be set up to recognize the benefit of the loss carried forward only if it is probable that future taxable profit will be available to utilize the loss. Although the standard does not define probable, an accepted interpretation of this term is "more likely than not." IAS 12 indicates that the presence of a loss itself casts some doubt on the company's ability to generate future profits. In assessing the probability of future taxable income, the accountant should consider not only the presence of a current loss, but also other factors such as the existence of temporary differences that will reverse in the future, the persistence and nature of the current loss, and tax planning opportunities that may allow the loss to be used in the future. This is another area where judgment on the part of the accountant is required.

Let's revisit our previous example, with one change. Assume now that the loss in the current year is $300,000 and that all other factors remain the same. In this situation, the company will first apply as much of the loss as possible to the previous three years. This will generate a tax refund calculated as follows:

2018		=	$	3,000
2019		=		21,500
2020		=		22,500
Total refund			$	47,000

The company will make the following journal entry with respect to this loss:

In addition, the company needs to consider the effect of the loss carried forward, which is calculated as $114,000 ( ). If, after assessing all the relevant facts and conditions, the company believes it is probable that sufficient future taxable profit will be generated to utilize the loss, a deferred tax asset can be recognized as follows:

The amount is calculated as follows: = $22,800. Note, as with other deferred tax amounts, we are using the rate that we expect to be in effect when the amount is realized. In this case, the current rate of 20% is used, as there is no indication that the rate will change in the future.

The company would report the tax amounts on the 2021 income statement as follows:

Loss before tax			(300,000)
Income taxes:			
Current tax income from loss carryback			47,000
Deferred tax income from loss carryforward			22,800
Net loss			(230,200)

Now, if in 2022 the company earns a profit of $250,000, the loss carryforward can be fully utilized. By doing so, the company could reduce its current tax payable as follows:

Taxable profit reported	$	250,000
Loss carryforward utilized		(114,000)
Taxable profit, adjusted		136,000
Tax rate		20%
Current tax payable	$	27,200

The following journal entries would be required in 2022:

The company's 2022 income statement is presented as follows:

Income before tax			250,000
Income taxes:			
Current tax expense			(27,200)
Deferred tax expense			(22,800)
Net income			200,000

The deferred tax expense represents the reversal of the benefit realized in 2021, when the loss was initially created. The deferred tax asset would carry a nil balance at the end of the 2022.

Returning to 2021, if the company had determined that it was not probable that it would be able to generate future taxable profits to utilize the loss, then no deferred tax asset would be recorded in that year. In a subsequent year, if profits were actually generated, then the current tax expense for that year would simply be reduced by the effect of the loss carryforward. In our example above, only the current tax entries would be recorded, and the deferred tax recognition and reversal entries would not be recorded. Although this treatment would mean presentation of a single, reduced current tax amount in the year that the loss is utilized, disclosure must be made of the components of this reduced tax, that is, the current tax otherwise calculated less the effect of the loss carryforward.

- A video is available on the Lyryx web site. Click Here to view the video.

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16.6: Deferred Tax Assets

As we have seen, deferred tax assets are created when there are loss carryforwards or deductible temporary differences. Consistent with the conceptual framework, IAS 12 only allows recognition of these assets when their future realization is probable. However, as discussed previously, there can be a fair degree of uncertainty in making this determination. As a result of this uncertainty, IAS 12 requires a review of any deferred tax assets at the end of every reporting period. If the initial recognition assessment has changed, and it is no longer probable that part or all of the deferred tax asset will be realized, then the carrying value of the asset should be reduced and charged against profit as part of the deferred tax expense.

The opposite situation, however, can also occur. If a deferred tax asset was not recognized in a previous period because the future realization was not probable, and conditions in the current year have changed to the point that future realization is now probable, then the deferred tax asset can be established and the income can be reported on the income statement. Although this may create unusual effects on the company's income statement, the recognition or non-recognition of deferred tax assets is consistent with the conceptual framework's balance sheet approach to financial reporting.

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16.7: Presentation and Disclosure

Income tax expense can be a significant portion of a company's profit. As such, there are a number of specific presentation and disclosure requirements for income taxes. The requirements include:

- Tax expense (income) from ordinary activities
- Tax expense (income) from discontinued operations
- Tax amounts charged directly to equity and other comprehensive income
- Major components of tax expense (income), including:
  - Deferred tax related to the origination and reversal of temporary differences
  - Deferred tax related to changes in tax rates
  - Current tax amounts related to prior period taxes
  - The benefit arising from the utilization or recognition of previously unrecognized tax losses
  - Amounts of deferred tax asset write-downs
- Details of unrecognized deferred tax assets
- Details of temporary differences and the amount of related deferred tax recognized on the balance sheet
- Reconciliation between the statutory tax rate and the effective tax rate actually realized

There are also specific requirements in IAS 12 and IAS 1 regarding the balance sheet presentation of tax amounts such as: (a) current taxes payable (receivable) should be presented as a current liability (asset); (b) any deferred tax amounts should be presented as non-current assets or liabilities; and (c) current tax assets and liabilities can only offset each other if the company has the legal right to offset them and intends to settle them with a net payment (receipt). This last situation would usually occur when a single taxation authority that allows offset assesses the taxes. A similar prohibition exists against offsetting for deferred taxes, although there is a further condition that allows for offsetting of deferred taxes originated by different entities within a group structure that will experience reversals of temporary differences in a similar fashion or are allowed to offset current tax amounts. In this case, the deferred taxes must still relate to the same taxation authority.

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16.8: IFRS/ASPE Key Differences

IFRS	ASPE
Terminology: accounting and taxable profit, deferred taxes, tax base, and tax income.	Terminology: accounting and taxable income, future income taxes, tax basis, and tax benefit.
Deferred tax asset is recognized when the future realization is considered probable. No valuation allowance is used.	Future tax asset can be recognized for the full amount of the effect of the temporary difference, with an offsetting valuation allowance used to reflect the possibility that future realization is not "more likely than not."
Deferred tax balances are classified as non-current.	Classification of future tax amounts will depend on the classification of the underlying asset or liability. If there is no underlying asset or liability, classification will be determined by the expected reversal of the temporary differences.
More disclosures.	Fewer disclosures.
Companies can only apply the deferred tax approach.	Companies can choose between the taxes payable method and the future income taxes method. The future income taxes method is similar to the deferred tax approach, although some of the terminology is slightly different.

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16.9: Appendix A- Accounting for Income Taxes under ASPE

Under ASPE, a company has two choices of how to account for its income taxes: the taxes payable method or the future income taxes method. The taxes payable method, described previously, simply reports the balance of current taxes payable or receivable, and no attempt is made to account for the effect of temporary differences. If a loss is carried back, then the amount of the expected tax receivable can be recorded, however no amount is considered with respect to the loss carried forward. Although this method can result in a mismatched income tax expense, many small businesses choose it because of its simplicity, as the amount of tax calculated on the tax return needs to be recorded and nothing else. However, the company is still required to disclose a reconciliation of the statutory tax rate to the effective tax rate and the amount of unused tax losses carried forward. This simplified method is an example of how the cost versus benefit constraint is applied to financial reporting standards.

If a company chooses the future income taxes method, it will follow procedures very similar to what has been described in this chapter. Although the term future income taxes is used instead of deferred taxes, the concepts are essentially the same. There are other minor differences in terminology, as well, such as the use of income instead of profit for both accounting and tax purposes, the use of tax basis instead of tax base, and the use of tax benefit instead of tax income. Another difference in terminology is present in the evaluation of future tax assets. ASPE only allows a future tax asset to be recorded if its future realization is "more likely than not." Although this term is not defined, it is generally interpreted in the same way as "probable" in IFRS.

Another significant difference between the two standards deals with the treatment of future tax assets. The initial calculation and measurement is similar under both standards, however ASPE allows the use of a valuation allowance. This is essentially a contra-account that reduces the future tax asset to a net amount that is "more likely than not" to be realized. This means that the full amount of the future tax asset can be recorded and offset by an amount believed to represent the risk that future income will not be sufficient to realize the asset. Although, conceptually, this is different from the IFRS approach of only recognizing an asset if its realization is "probable," the net effect of the two methods remains the same. That is, the "more likely than not" criteria used in ASPE to determine the valuation allowance will generally produce the same result as the "probable" criteria used by IFRS to determine the asset value.

Additionally, a difference exists between the two standards in the presentation of future tax amounts. IFRS simply states that all deferred tax balances should be disclosed as non-current items on the balance sheet. In ASPE, however, the classification of future tax balances is more complicated as the classification of a future tax balance depends on the classification of the underlying asset or liability. For example, if the temporary difference relates to the difference between depreciation taken for tax and accounting purposes, then the future tax balance would be classified as non-current since the underlying asset (property, plant, and equipment) is reported as non-current. If the temporary difference relates to a difference in the treatment of warranty costs, then the future tax balance would likely be classified as current because the underlying liability (warranty liability) is classified as current. This rule can create a situation where a temporary difference may result in the future tax balance being classified as both current and non-current. This could happen if the underlying asset was an instalment receivable that required payments in the next year and in subsequent years. If the future tax amount resulted from a temporary difference that did not arise from a balance sheet amount, such as research costs, then the classification would be based on the expected reversal of the temporary difference. Again, this could result in a split classification of the amount.

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16.10: Chapter Summary

LO 1: Explain the relationship between taxable profit and accounting profit and calculate current taxes payable.

Tax authorities apply certain rules in the calculation of taxable profit that differ from accounting rules. Taxable profit will, therefore, not always equal accounting profit. It is common to use accounting profit as the starting point for the calculation of taxable profit, and once taxable profit is determined, the appropriate tax rate is applied to calculate current taxes payable.

LO 2: Explain what permanent and temporary differences are and describe the deferred tax effects of those differences.

A temporary difference occurs when an income or expense item is recognized in a different reporting period for tax purposes than for accounting purposes. This is not the same as a permanent difference, which is an item that is included in one type of reporting (tax or accounting) but never the other. Permanent differences affect current taxes but have no effect on future taxes. Temporary differences, on the other hand, will have an effect on future accounting periods when the temporary difference reverses. Temporary differences can be either taxable (i.e., they increase the future tax payable) or deductible (i.e., they decrease the future tax payable).

LO 3: Calculate the deferred tax effects of temporary differences and record the journal entries for current and deferred taxes.

When a temporary difference is identified, the deferred tax asset or liability is calculated by multiplying the amount of the difference by the tax rate expected to be in effect when the difference reverses. Current taxes are recorded as a debit to current tax expense and a credit to current taxes payable. The deferred tax expense or income for the year will be determined by comparing the current year's deferred tax asset/liability balance to the previous year's deferred tax asset/liability balance. Deferred taxes will create either a debit to deferred tax asset or a credit to deferred tax liability. A deferred tax asset will create a credit on the income statement described as deferred tax income, while a deferred tax liability will result in a debit on the income statement described as deferred tax expense.

LO 4: Determine the effect of changes in tax rates and calculate current and deferred tax amounts under conditions of changing rates.

Current taxes should always be calculated at the rate currently in effect. Deferred taxes are calculated at the rate expected to be in effect when the temporary difference reverses. This will be based on the rates in effect or substantively enacted at the reporting date. If a future tax rate changes after the deferred tax amount has already been recorded, then the deferred tax amount must be adjusted for the effect of the rate change. This adjustment is prospective and, thus, prior periods are not adjusted. The effect of the rate change needs to be disclosed separately from the other components of deferred tax expense.

LO 5: Analyze the effect of tax losses and determine the appropriate accounting of those losses.

Current tax losses can often be carried back or carried forward and applied against taxable profits for other years. When losses are carried back, a receivable and a tax income amount will be established based on the rates in effect in the previous years. When losses are carried forward, a determination must be made whether the future realization of these losses is probable or not. If it is not probable, then no amount is recorded until such time as the benefit of the loss is actually realized, resulting in no deferred tax asset being carried on the balance sheet. If it is, in fact, probable, then a deferred tax asset and deferred tax income amount is recognized based on the rate expected to be in effect when the loss is utilized. In the future year when the loss is utilized, the deferred tax asset is eliminated and a deferred tax expense is recorded.

LO 6: Explain the rationale for the annual review of deferred tax assets and describe the effects of this review.

A fair degree of uncertainty exists around the future benefits that can be derived from tax losses. The benefit of a tax loss can only be realized if there is sufficient taxable profit, or reversals of taxable temporary differences, in the future. Although the criteria for recognition may be met in one accounting period, circumstances can change in a later period, creating doubt about the amount that can be realized. As such, a review of deferred tax assets is required at every reporting period to determine if the recognition criteria still holds true. If it doesn't, then the deferred tax asset needs to be partially or fully derecognized and an expense recorded. If a previously unrecorded tax loss now meets the probability criteria, then the benefit and asset will be recorded in the current year.

LO 7: Prepare the presentation of income tax amounts on the balance sheet and income statement and explain the disclosure requirements.

Current taxes payable should be disclosed as a current liability, and deferred tax assets or liabilities should be disclosed as non-current items. Note that different rules apply under ASPE. The components of deferred tax should be disclosed as well as a description of temporary differences. Unrecognized tax losses should be disclosed as well as the effect of tax rate changes, and a reconciliation of the statutory and effective tax rates needs to be disclosed as well.

LO 8: Explain the key differences between the treatment of income taxes under IFRS and ASPE.

Under IFRS, companies can only use the deferred tax approach, whereas under ASPE, companies can choose either the taxes payable method or the future income taxes method. Under IFRS, a deferred tax asset can only be recognized if future realization is probable, while under ASPE, the realization must be more likely than not. As well, ASPE allows the use of a valuation allowance. Under IFRS, all deferred tax balances are classified as non-current, whereas under ASPE, the classification will depend on the underlying, asset, liability, or temporary difference. There are differences in disclosure requirements and terminology as well.

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16.11: References

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16.12: Exercises

16.1

For each of the items listed below, identify whether the item is a taxable temporary difference, a deductible temporary difference,

or a permanent difference.

Item	Taxable Temporary Difference	Deductible Temporary Difference	Permanent Difference
A property owner collects rent in advance. The amounts are taxed when they are received.			
Depreciation claimed for tax purposes exceeds depreciation charged for accounting purposes.			
Dividends received from an investment in another company are reported as income, but are not taxable.			
A provision for future warranty costs is recorded but is not deductible for tax purposes until the expenditure is actually incurred.			
Membership dues at a golf club are reported as a promotion expense but are not deductible for tax purposes.			
Construction revenue is reported using the percentage of completion method but is not taxed until the project is finished.			
The present value of the costs for the future site remediation of an oil-drilling property has been capitalized as part of the asset's carrying value. This will increase the amount of depreciation claimed over the life of the asset. These costs are not deductible for tax purposes until they are actually incurred.			
A revaluation surplus (accumulated other comprehensive income) is reported for assets accounted for under the revaluation model. The gains will not be			

taxed until the respective assets are sold.			
Included in current assets is a prepaid expense that is fully deductible for tax purposes when paid.			
A penalty is paid for the late filing of the company's income tax return. This penalty is not deductible for tax purposes.			

16.2

A company reports an accounting profit of $350,000. Included in the profit is $100,000 of proceeds from a life insurance policy for one of the key executives who passed away during the year. These proceeds are not taxable. As well, the company charged accounting depreciation that was $20,000 greater than the capital allowances claimed for tax purposes.

Required: Calculate the amount of taxes payable and the income tax expense for the year. The current tax rate is 20%.

16.3

In 2021, Pryderi Inc. completed its first year of operations and reports a net profit of $3,500,000, which included revenue from construction and other projects. During the year, the company started a large construction project that it expected would take two years to complete. The company uses the percentage of completion method for accounting purposes and reported a profit from this project of $900,000. All other projects were completed during the year. For tax purposes, the company reports profits on construction projects only when the project is finished. Also, the company reported the following with respect to its property, plant, and equipment:

Total cost		$	6,800,000
Accumulated depreciation			1,200,000
Tax base			4,500,000

Note: The currently enacted corporate tax rate is 30%.

Required:

a. Calculate the year-end balances for deferred taxes and current taxes payable.
b. Prepare the journal entries to record the taxes for 2021.
c. Prepare the income statement presentation of the tax amounts.

16.4

Refer to the facts presented in the Exercise 15–3. In 2022, Pryderi Inc. completed the construction project that it began in 2021 and reported a further profit from the project of $600,000. The total amount of profit earned on the project is taxable in 2022. The company also completed other projects during the year and reported a net profit of $3,700,000. At the end of 2022, the company reported the following with respect to its property, plant, and equipment:

Total cost		$	6,800,000
Accumulated depreciation			2,600,000
Tax base			3,500,000

Note: The tax rate has remained unchanged at 30%.

Required:

a. Calculate the year-end balances for deferred taxes and current taxes payable.
b. Prepare the journal entries to record taxes for 2022.
c. Prepare the income statement presentation of the tax amounts.

16.5

Corin Ltd. began operations in 2021 and reported a deferred tax liability balance of $17,500 at the end of that year. This balance resulted from the difference between the amount of depreciation charged for accounting purposes and the capital allowances claimed for tax purposes. The carrying amount of the asset in the company's accounting records on December 31, 2021, was $320,000. The tax rate of 25% has not changed for several years and is not expected to change in the future. Also, by the end of December 2021, all current taxes had been paid.

In 2022, the company reported the following:

- Accounting profit for the year was $416,000.
- The company began offering a one-year warranty to its customers in 2022. A warranty provision was established, resulting in a reported expense of $73,000. Actual warranty costs incurred during the year were $17,000. For tax purposes, warranty costs can only be deducted when actually paid.
- In 2022, entertainment costs of $28,000 were paid and expensed. For tax purposes, only 25% of these amounts can be claimed.
- In 2022, the company expensed depreciation of $50,000 and claimed capital allowances for tax purposes of $58,000. There were no sales or disposals of property, plant, and equipment during the year.

Required:

a. Calculate the balances of deferred taxes and current taxes payable for the year ended December 31, 2022.
b. Prepare the journal entries to record the current and deferred taxes for 2022.
c. Prepare the income statement presentation of the income tax amounts for 2022.
d. Prepare the balance sheet presentation of the current and deferred tax balances on December 31, 2022.

16.6

Adken Enterprises reported the following accounting and taxable profits:

		Accounting Profit			**Taxable Profit**			**Tax Rate**
2021		$	110,000		$	85,000		20%
2022			242,000			196,000		23%
2023			261,000			285,000		23%

Note: Included in the accounting profit is $10,000 dividend income each year that is never taxable. Also, the remainder of the difference between accounting and taxable profits relates to a temporary difference, and there were no deferred taxes reported prior to 2021. The tax rate change in 2022 was not enacted until 2022.

Required:

a. Calculate the current and deferred tax expense for 2021 to 2023.
b. Calculate the amount of the deferred tax balance reported on the balance sheet for each of the three years.
c. Prepare the disclosure of the income tax expense amounts in 2022, the year of the rate change.

16.7

Refer to the information in Exercise 15–6.

Required: Repeat the requirements of the previous question, assuming that the rate change for 2022 was enacted in 2021. That is, the rate in effect for 2021 was 20%, but the legislation changing the rate for 2022 had already been passed by the end of 2021.

16.8

Baden Ltd. reported the following taxable profits (losses):

		Taxable Profit (Loss)			Tax Rate
2021		$	10,000		25%
2022			55,000		20%
2023			(112,000)		20%
2024			21,000		18%

Note: There are no temporary or permanent differences to account for. The management of the company believes that it is probable that future taxable profits will be available to utilize any tax losses carried forward. However, the company carries losses back whenever possible. Also, tax rate changes are not enacted until the year of the change.

Required:

a. Prepare journal entries to record the tax amounts for each year.
b. Repeat part (a) assuming that management does not believe it is probable that future taxable profits will be available to utilize tax losses carried forward.

16.9

Genaro Publishing Ltd. is a publisher of a wide range of consumer magazines. The company reported the following on its December 31, 2021, balance sheet:

Income tax receivable		$	16,250
Deferred tax asset			38,400

The deferred tax asset relates to two temporary differences: subscription revenue and depreciation. The company receives subscription payments in advance on the magazines it publishes, the amounts are taxed immediately when they are received, but are reported as revenue as they are earned over the subscription period. On December 31, 2021, the balance in the unearned revenue account was $247,000 and it was expected to be earned as follows:

2022		$95,000
2023		80,000
2024		72,000

The company's printing equipment is currently being depreciated on a straight-line basis and the carrying amount of the equipment on December 31, 2021, was $357,000. For tax purposes, the equipment is depreciated using the declining balance method and the tax base on December 31, 2021, was $238,000. A single taxation authority assesses the company, and payments/receipts are settled on a net basis. The income tax receivable resulted from a taxable loss suffered in 2021 that was fully carried back to previous taxation years. The tax rate enacted on December 31, 2021, was 30%.

In 2022, the company reported the following:

Accounting profit		$	750,000
Tax refund received			16,250
Depreciation expense			59,000
Capital allowance claimed for tax purposes			46,000
New subscriptions received in the year, unearned at year-end			68,000
Fines paid due to contamination of a factory site, not deductible			
for tax purposes			12,000
Dividends received from an investment that are not taxable			7,500

Required:

a. Calculate the current and deferred tax expense for 2022.
b. Prepare the journal entries for the tax amounts in 2022.
c. Prepare the income statement presentation of the tax amounts for 2022.
d. Prepare the balance sheet presentation of the tax amounts, with comparatives, as on December 31, 2022.

16.10

Zucharras Ltd. began operations in 2021. The following information is available regarding its years ended December 31 ($ amounts in '000s):

		2021		**2022**		**2023**		**2024**		**2025**
Accounting profit (loss) reported		150		60		(440)		(80)		350
Depreciation expense		20		20		20		20		20
Capital allowance claimed for tax purposes		35		30		0		0		25
Enacted tax rate		25%		30%		35%		35%		30%

The depreciation relates to a single asset that was purchased early in 2021 for $200,000, and there were no other asset purchases or sales during the five years. The tax rates were enacted in each year and the changes were not known prior to the year to which they apply. In 2023, management carried back the loss to the fullest extent possible and estimated that there was an 80% probability that future taxable profits would be available to use the remaining loss carried forward. In 2024, management revised this estimate to a 10% probability, and in 2025, management utilized the maximum possible amount of the loss carried forward. In all years, management estimated that future reversals of temporary differences would be available to utilize the benefits of any deferred tax assets other than the losses carried forward.

Required:

a. Calculate the balance of the deferred tax liability or asset and related adjustment required for the temporary difference related to depreciation at the end of each year.
b. Calculate the current tax payable for each year.
c. Calculate the balance of the deferred tax asset related to the loss carried forward at the end of each the years 2023 to 2025.
d. Calculate the current, deferred, and total tax expense for each year.

16.11

(from Appendix) Sammon Inc. reports under ASPE and has chosen to use the future income taxes method. It has reported the following regarding its income taxes:

Accounting income for year ended December 31, 2021		$	150,000
Depreciation charged in 2021			12,000
Capital allowances deducted for tax purposes in 2021			16,000
Carrying amount of plant assets on January 1, 2021			120,000
Tax basis of plant assets on January 1, 2021			135,000
Unearned rent revenue on December 31, 2021*			96,000
Percentage of completion revenue in 2021**			90,000

* Note: The rent revenue collected in advance represents an amount prepaid by a tenant for the next two years. Rent is earned at the rate of $4,000 per month, is collected on December 31, 2021, and is taxable when collected.

** Note: The company commenced a single construction contract during the year. The contract revenue has been reported using the percentage of completion method, but the completed contract method is used for tax purposes. The company expects the project to be completed in 2022.

Also, there are no other temporary or permanent differences aside from those identified above. The current tax rate is 30%, which has been in effect for several years.

Required:

a. Calculate the current and future tax expenses for the year ended December 31, 2021.
b. Prepare the balance sheet presentation of the tax amounts on December 31, 2021.
c. Repeat parts (a) and (b) assuming that the company uses the taxes payable method instead.

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CHAPTER OVERVIEW

Chapter 17: Pensions and Other Employment Benefits

Golden Years for Bombardier Employees?

In previous generations, employees yearned for a stable job where they could work until retirement. The dream included a reasonable pension that allowed retirees the chance to enjoy a comfortable life. However, changes in demographics and economics have altered the retirement landscape. These changes not only affect the employees but also the companies for which they worked. Bombardier Inc., a Canadian manufacturer of aircraft and rail transportation systems, provides an example of the effects of these changes.

At the end of December 2014, Bombardier reported a net loss of $1.2 billion USD. Contributing to this loss was a net pension expense of $400 million, an amount that represents over 70% of the company's loss before tax and interest. But this expense only tells part of the story. Bombardier also reported pension plan assets of $8.8 billion and a pension plan obligation of $10.9 billion, leaving an unfunded obligation of approximately $2.1 billion. This unfunded obligation had increased by over $500 million from the previous year, but still represented an improvement over the company's highest unfunded obligation of $2.9 billion, reported in 2011.

Pension obligations represent the present value of future payments to be paid to retired employees. These payments are often based on the employees' highest salary during their employment and usually continue until the employees' death. Because of this, the actual amount paid out in the future can only be estimated, and this is done using an actuary. Actuaries are professionals trained in statistical sciences who use existing data and assumptions to make these predictions. With improvements in medical technologies, people are living longer than they once did, and actuarial calculations of the pension obligation reflect this. As well, investment returns on pension plan assets suffered during the 2008 financial crisis and resulting recession. Increased pension obligations and reduced returns have increased the unfunded amount of pensions for many companies, including Bombardier.

A further complicating factor is the rate used to discount the obligation. In Bombardier's case, a 1% drop in the discount rate used in 2014 resulted in an increase in the pension obligation of over $1.4 billion. This was offset, in part, by improved asset values, but this discount rate provides an example of a factor that management cannot control.

Many companies carry similar unfunded pension liabilities on their balance sheets and it is becoming increasingly challenging for managers to deal with this problem. A drastic way to address the growing liability is to stop admitting new members to the pension plan. Bombardier did this in 2013, and other companies have taken similar steps. This may limit the scale of the problem, but the managers still need to find ways to fund a liability whose amount changes in response to unpredictable factors. The managers also need to deal with the more subtle and complex problem of managing employee expectations when those employees receive differing levels of benefits. This, in fact, may prove to be a bigger challenge than finding the funds to maintain existing plans.

(Source: Bombardier, 2015)

Learning Objectives

After completing this chapter, you should be able to:

- Describe the nature of a pension plan and identify the key issues in accounting for a pension plan.
- Define and contrast *defined contribution pension plans* and *defined benefit pension plans*.
- Prepare the accounting entries for a defined contribution pension plan.
- Describe the various estimations required and elements included in the accounting for defined benefit pension plans, and evaluate the effects of these estimations on the accounting for these plans.
  - Calculate pension expense for a defined benefit pension plan and prepare the accounting entries for the plan.
  - Describe the accounting treatment of net defined benefit assets.
- Discuss the challenges in accounting for other post-employment benefits.
- Describe the accounting treatment for other employment benefits.

- Identify the presentation and disclosure requirements for defined benefit pension plans.
- Identify differences in the accounting treatment of post-employment benefits between ASPE and IFRS.

Introduction

Changing demographic patterns have recently thrust pension plans into the headlines. Many mature economies are experiencing low or non-existent growth combined with an aging population. A combination of declining birthrates and improvements in health care is shifting the overall composition of certain populations to people of retirement age. This shift creates a challenge for both public and private pension plans, many of which were established when expectations about life after retirement were quite different. As pension plans are put under increased pressure, it becomes even more important for stakeholders to have a clear understanding of the financial status of the plans and the risks they face as sponsors of the plans. This chapter will examine the accounting issues surrounding private (non-government) pension plans, as well as the treatment of other employment benefits offered by employers. This chapter only deals with the accounting issues of the employer providing the employment and post-employment benefits. The accounting for the pension plan and other benefit plans themselves (i.e., the accounting performed by the trustee of the pension plan assets) is described in IAS 26 and is not covered in this chapter.

Chapter Organization



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17.2: Types of Pension Plans
17.3: Defined Contribution Plans
17.4: Defined Benefit Plans
17.5: Other Post-Employment Benefits
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17.1: Definition

The term pension plans is not specifically used in IAS 19 (CPA Canada, 2016). Instead it refers to "post-employment benefit plans," which are simply arrangements by which employers offer benefits to employees after the completion of their employment. However, as the term pension plan is widely used and understood, this chapter will use it to distinguish such plans from other types of post-employment benefits.

A key element in the definition of employee benefits in IAS 19 is that the benefits are payable in exchange for service by the employee. This is generally how most employees understand the concept of a pension plan: each year of employment entitles the employee to a future payment that will be received after the employee retires from the job. The pension plan is designed to encourage a sense of loyalty in the employee by providing a benefit that cannot be realized until the employee has spent often many years in the job. The plan also provides a sense of security to the employee, which is provided in exchange for the employee's service to the company. From an accounting perspective, the important questions are: Who pays for the plan? How will the plan's activities be measured? How will the plan be reported?

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17.2: Types of Pension Plans

There are two general forms that pension plans can take: they can be defined contribution plans or defined benefit plans. A defined contribution plan refers to a plan where the employer pays a fixed contribution into a fund and has no further legal or constructive obligation to provide additional funds should the plan not have sufficient resources to pay the required benefits in the future. A defined benefit plan is simply any other post-employment benefit plan that does not meet this definition. Under a defined benefit plan, the employer does hold a legal or constructive obligation to provide additional funds to the plan if the resources are not sufficient to pay the required benefits. Accounting for defined contribution plans is quite straightforward, whereas accounting for defined benefit plans is more complicated. We will examine both types of plans.

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17.3: Defined Contribution Plans

With this type of plan, the amount the employer contributes is defined by the contract or relationship the employer has negotiated with its employees. This means that the employer has agreed to fund the plan at a specified amount, usually calculated as a fixed amount or as some percentage of the employee's pay. However, the employer has not agreed to provide any specific amount of pension income to the employee once he or she retires. The amount of pension income available to the employee will depend on how the pension plan assets have performed over the years. The pension plan assets are usually delivered to an independent trustee who will be given the task, and legal right, to invest the assets on behalf of the employees, and this trust is legally separate from the employer. While the trustee will prudently invest the assets in order to provide pension payments to the employees when they retire, there is no guarantee of how much retirement income an individual employee will receive as these funds are subject to investment risk. With a defined contribution plan, the employee bears all of the investment risk, as the employer has only agreed to contribute a specified amount to the plan.

Because the employer bears no investment risk, and no obligation for future pension payments, the accounting for the employer is quite simple. The amount the employer has agreed to pay on behalf of the employees is simply recorded as an expense every year, usually described as a pension or post-employment benefit expense. A liability would only be recorded if the company had not remitted the required funds to the pension plan trustee by the end of the fiscal year. It is also possible that an asset could be recorded if the employer had remitted more funds to the trustee than were required by the agreement with the employees. If either a liability or asset exists at the end of the fiscal period, it would likely be classified as current, as it would normally be expected that the amount would be settled within one year. However, there can be situations where future contributions may be required for current service under a defined contribution plan, such as a deferred contribution required under the terms of a collective agreement negotiated with an employee union. In this case, the future contributions would need to be discounted using the same interest rate as would be applied to a defined benefit plan.

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17.4: Defined Benefit Plans

Defined benefit plans are the opposite of defined contribution plans. With a defined benefit plan, the amount of pension income the employee will receive upon retirement is defined either as a pre-determined amount or by calculation using a prescribed formula. Because the ultimate payment from the plan is defined, the risks of the plan now fall upon the employer. If the plan fails to retain sufficient assets to pay out the defined pension benefits, the employer is required to make up the difference through additional contributions. As noted in the example of Bombardier, this amount can be significant.

An important concept of defined benefit plans is that of vesting. Vesting refers to the principle that employees are entitled to receive certain benefits even if they cease to be employed by the company. Non-vested benefits are those that are lost once the employee ceases to provide service to the employer. With pension plans, there is usually a minimum term of service that is required before the pension benefits will vest.

Because the employer is responsible for the defined benefit that the pension plan will ultimately pay out, the accounting becomes more complicated. This is because the existence of the defined benefit creates a liability to the company. The liability represents the present value of future cash flows related to the payment of pensions to retired employees. Offsetting this liability are the assets held by the trustee in the pension plan.



Although it is fairly easy to determine the fair value of the assets held by the trustee, it is not as simple to determine the present value of future pension payments. A number of assumptions and estimates are required to make this determination, including:

- When will the employee retire?
- How long will the employee live after retirement?
- What level of salary will the pension payments be based on?
- What return will be earned on the plan assets in the future?
- What discount rate is appropriate for the present value calculation?

Accountants generally don't have the specialized knowledge or expertise to make these kinds of estimates. However, a particular group of professionals called actuaries can help with this process. Actuaries are trained in statistical sciences and they understand how to use existing data to make these kinds of determinations. Because pension payments are often made far in the future, and are based on unknowable factors such as an employee's lifespan, there is the potential for estimation error. As such, an accountant will often review the work of the actuary to ensure it is appropriate for financial reporting purposes. Although IAS 19 does not require the use of actuaries, it is unlikely that an accountant would have sufficient technical knowledge to carry out these calculations on his or her own, except in the case of the most basic pension plan arrangements.

So what exactly does the actuary measure? The main focus of the actuary's work is called the defined benefit obligation (DBO). This represents the present value of all future pension payments for current employees, based on their expected salaries at the time they retire. This calculation takes into account all service provided by the employees up to the reporting date, but it does not include future service. However, a key assumption is that the pension plan will continue to operate and employees will continue to work until their expected retirement date. This calculation requires estimations regarding employee turnover, inflation, and other factors affecting future salaries, such as expected retirement dates and mortality. Note that this calculation also includes estimates related to unvested benefits, as it is expected that the benefits will vest to the employees in the normal course of their employment.

The balance of the defined benefit obligation will be affected by a number of factors each year:

- Current service cost
- Interest on the obligation
- Benefits paid to retirees
- Past service costs and plan amendments
- Actuarial gains and losses

Current service cost is an essential element to the pension obligation. It represents the present value of future benefits required to be paid to current employees, based on the service they have provided in the current accounting period. This amount is estimated by the actuary, taking into account the formula for calculating the pension entitlement, the expected number of years until retirement, and other actuarial factors. The amount is calculated using the projected unit credit method, which allocates the ultimate pension benefit payable in roughly equal proportions over the employee's working life. This present value technique, thus, will take into account the effect of future salary increases on the current service obligation.

The interest cost on the obligation is a basic concept that reflects the time value of money. Because the payments to retirees will be made in the future, the obligation must be discounted to its present value. As time passes, interest must be accrued on the obligation during each accounting period, increasing the obligation's carrying value each period until it reaches the ultimate amount payable to the employee on the date of retirement. Although the correct accounting treatment requires calculation of the interest cost based on actual transactions in the plan during the year, a simplifying assumption we will make is that transactions occur at the end of the year. This means that, unless otherwise stated, we will assume that the interest cost is based on the opening balance of the DBO.

The third essential element in the calculation of the DBO is the value of *benefits paid to retirees*. As these benefits are paid, the obligation is reduced because the company is fulfilling its obligation to its employees under the plan. These payments will reduce the outstanding present value otherwise calculated.

Sometimes a pension plan may be amended or additional pension entitlements granted. This could occur, for example, when a company first commences a new pension plan and wants to grant entitlement to long-serving employees for their service prior to the start of the plan. Or, with an existing plan, the company may want to grant additional pension entitlements to certain groups of employees, such as those who have joined the company through a merger. It is also possible that a company could reduce future pension benefits payable to employees, such as through a renegotiation of collective agreements with unions resulting from reorganization or other type of financial distress. Whatever the reason, the change in the future benefits resulting from *past service costs* must be adjusted and reflected in the DBO.

The last element of the DBO is perhaps the most difficult to determine. Actuaries, as noted before, are trained in analyzing and using various types of data to make their predictions and calculations of the DBO. However, predicting the future is imprecise and sometimes the actuary will need to change the projected amounts based on new calculations. These new calculations could result from observations of actual patterns that are different from what was previously predicted, or from completely new data that changes the existing assumptions. For example, if during the year there was a significant turnover of employees and the new group is significantly younger than the previous group, the calculation of the DBO would change. Similarly, if new scientific data were released showing that, on average, people are now living longer due to improved health-care services, the DBO would have to be adjusted. Changes in actuarial assumptions are a normal part of the process of estimating the DBO, resulting in *actuarial gains or losses* during the period.

Aside from the DBO, the other major element of the pension plan is the assets the pension plan holds in trust for the employees. The assets are typically held in a separate entity from the company and are usually legally restricted in a way that prevents their conversion for use in settlement of other non-pension liabilities of the company. The plan assets will usually be held in low-risk investments such as high-quality debt and equity securities, stable real estate properties, cash and other cash equivalents. The goal of the plan is to earn a reasonable return without taking too much risk. However, even a prudent investment strategy can be mismanaged, as discovered by pension fund managers after the 2008 financial crisis, who found that some of the double and triple-A securities they had invested in were not as sound as first believed.

There are three determinants of the value of the pension plan assets:

- Contributions by the employer, and in some cases, the employee
- The actual return on the assets
- Benefits paid to retirees

Contributions are payments made by the employer to the plan based on agreed upon amounts. This would typically be an amount determined by the actuary and is often based on a percentage of employee salaries. In some cases, the employees will also contribute their own money to the plan. This is referred to as a contributory plan. The amount the employee contributes will often be based on tax legislation in the relevant jurisdiction.

The return on the plan's assets consists of various types of investment returns, such as interest, dividends, and gains and losses on the disposal of plan assets (less any administration fees charged by the pension plan manager). Additionally, IAS 19 requires the plan's assets to be valued at their fair values, meaning that unrealized gains and losses will also be included in the final balance. Because certain investment markets can be volatile, the actual return earned on the assets from year to year can vary significantly. However, most plan managers will attempt to diversify their portfolios and apply prudent investment strategies to minimize this risk.

As noted previously, actual pension benefits paid to retirees reduce the obligation of the plan. However, they also reduce the assets in the plan.

Accounting for Defined Benefit Plans

Although there are a number of complex elements that comprise defined benefit pension plans, the accounting concern of the company reporting under IFRS is simpler. On the sponsoring company's accounting records, only four relevant accounts need to be considered: the pension expense that will be recorded each year, the net defined benefit asset or liability that will appear on the balance sheet, the cash that is contributed to the plan, and the company's other comprehensive income (OCI). We will examine how each of these accounts is affected by the pension plan transactions.

It is important to note that the pension plan assets and obligation are not recorded anywhere on the sponsoring company's financial statements, as these are held by the trustee in the pension plan. Changes in the pension plan's obligation and assets are, however, accounted for indirectly on the sponsoring company's financial statements. This is done in the following manner:

- Current and past service costs are reported in net income.
- Net interest is reported in net income.
- Gains and losses from re-measurements of the net asset or liability are reported in other comprehensive income.
- Cash contributions to the plan reduce the company's liability.

This treatment will result in a net defined benefit expense being reported on the income statement (an adjustment to OCI) and an amount, the net defined benefit liability, being reported on the balance sheet equal to the net difference between the DBO and the fair value of the plan assets. One important point to note in the accounting treatment is the manner in which interest is recorded. Interest on the DBO should be calculated using an appropriate interest rate, which IAS 19 suggests should be a market-based interest rate that is comparable to the current yield on high-quality debt instruments, such as corporate bonds. The rate used would normally be the rate present at the end of the reporting period. A further requirement of IAS 19 is that the interest rate used to discount the DBO should also be used to calculate the return on the plan assets. In other words, the interest cost is calculated only on the *net* balance of the obligation. The result of using the same interest rate for determining the return on plan assets is that there will likely be a difference between the calculated amount and the actual return on the assets. This difference is accounted for in OCI, much in the same manner as remeasurement gains or losses resulting from changes in actuarial assumptions.

The accounting treatment for pensions under ASPE is slightly different. These differences will be explained in 16.9 Appendix A.

The accounting treatment under IFRS is best illustrated with an example. Consider the following facts: Ballard Ltd. initiated a defined benefit pension plan in 2015. On January 1, 2020, the balance of the DBO as determined by an actuary was $535,000, and the fair value of the plan assets was $500,000.

The following information relates to the three-year period 2020 to 2022:

		2020			2021			2022	
Current service cost for the year		$	57,000		$	65,000		$	76,000
Interest rate on corporate bonds			8%			8%			9%
Actual earnings on plan assets			43,000			35,000			70,000
Employer contributions			50,000			55,000			60,000
Benefits paid to retirees			20,000			23,000			25,000
Actuarial gain due to change in assumptions			–			16,000			–
Cost of past service benefits granted on January 1, 2022			–			–			62,000

An easy way to understand the accounting for pension plan transactions is to use a worksheet. The worksheet can help organize the relevant data and provides reconciliation between the company's records and the amounts held in the pension plan. The worksheet format that we will use is comprised of two parts. The left-hand portion represents the amounts held in the pension plan. These are not accounted for directly in the company's records. The right-hand side of the worksheet represents the company's accounting records. The data on this side can be used to directly generate the journal entries required and also provides a way to compare the company's records to those of the pension plan. In our worksheet we will use Debit (DR) and Credit (CR) notations even though the company does not directly record all parts of the worksheet. The use of DR and CR will help us understand how to reconcile the pension plan and company records.

Let's start with the worksheet for 2020:

	Pension Plan		Company Accounting Records			
	DBO	Plan Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
Opening balance	535,000 CR	500,000 DR	35,000 CR			
Service cost	57,000 CR				57,000 DR	
Interest: DBO	42,800 CR				42,800 DR	
Interest: assets		40,000 DR			40,000 CR	
Contribution		50,000 DR		50,000 CR		
Benefits paid	20,000 DR	20,000 CR				
Remeasurement gain: assets		3,000 DR				3,000 CR
Journal entry			6,800 CR	50,000 CR	59,800 DR	3,000 CR
Closing balance	614,800 CR	573,000 DR	41,800 CR			

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There are a few key points to note from the worksheet:

- The net defined benefit balance at the start of the year represents the amount the company would report on its balance sheet. It also represents the difference between the opening balances of the DBO and the plan assets.
- The interest on the DBO and the plan assets is calculated by simply taking the appropriate interest rate and multiplying it by the opening balance of each item. This calculation has assumed that all pension transactions occur at the end of the year. In practice, pension transactions may occur throughout the year. In that case, interest would need to be calculated on the weighted-average balance in each account.
- Benefits paid to retirees do not affect the company's accounting records, as these transactions occur between the pension plan and the retirees directly.
- The remeasurement gain represents the difference between the interest calculated on the plan asset balance and the actual return earned by those assets during the year. This gain is taken directly to other comprehensive income.

From this worksheet, the company would make the following journal entry:

The result of this journal entry is a credit of $6,800 to the net defined benefit liability that is reported on the company's balance sheet. This agrees with the calculation on the worksheet. In practice, the part of the journal entry reflecting the cash contributions by the company would be recorded throughout the year as the company remits pension payments to the plan. On the company's balance sheet, a net defined benefit liability of $41,800 would be disclosed. This would usually be disclosed as a non-current liability, as it is not normal for a pension liability to be settled within the next year. This balance also represents the net underfunding of the plan at the end of the year. This means that the pension plan does not have sufficient assets to settle the future expected liability for pension payments. In the short term this is not really a problem, as the pension plan payments will occur over

a period of many years and it is possible to correct an underfunded plan over time. However, if a pension plan remains chronically underfunded, this may result in problems making payments to retirees. With a defined benefit plan, the sponsoring company will ultimately be responsible for making up this difference, although employees may also be asked to contribute if the plan is contributory. The plan could also be overfunded, which would mean that the fair value of the plan assets exceeds the DBO. This excess amount belongs to the sponsoring company, although legal requirements may prevent the company from withdrawing the amount from the plan. Usually, the excess would be recovered through a reduction of future contributions.

The company would also disclose a pension expense of $59,800 on the income statement and a $3,000 credit to other comprehensive income. There are further disclosure requirements, which are detailed later in this chapter.

Let's now look at the 2021 transactions:

	Pension Plan		**Company Accounting Records**			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	614,800 CR	573,000 DR	41,800 CR			
Service cost	65,000 CR				65,000 DR	
Interest: DBO	49,184 CR				49,184 DR	
Interest: assets		45,840 DR			45,840 CR	
Contribution		55,000 DR		55,000 CR		
Benefits paid	23,000 DR	23,000 CR				
Remeasurement		10,840 CR				10,840 DR
loss: assets						
Remeasurement	16,000 DR					16,000 CR
gain: DBO						
Journal entry			8,184 CR	55,000 CR	68,344 DR	5,160 CR
Closing balance	689,984 CR	640,000 DR	49,984 CR			

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The process used is the same as was applied in 2020. However, note one additional difference in 2021: the actuary revised some of the actuarial assumptions. This could result from new data regarding life expectancy, changes in assumptions about expected period of service of employees, changes in assumptions about future wage levels, and several other factors. The change in the assumptions has resulted in an actuarial gain, which means the present value of the future pension payments (and thus, also the DBO) has been reduced. This reduction to the DBO has been recorded as a credit to other comprehensive income and does not directly affect the pension expense recorded. In this example, we have assumed that the change in assumptions occurred at the end of the year. If the change occurred at some other time during the year, the interest calculation would need to be adjusted to reflect weighted average DBO balance throughout the year.

As before, the company will make the following journal entry:



As a result of this journal entry, the company will now report a net defined benefit liability of $49,984 on the balance sheet, representing a net underfunded position.

In 2022, the pension worksheet looks like this:

	Pension Plan		**Company Accounting Records**			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	689,984 CR	640,000 DR	49,984 CR			
Past service	62,000 CR				62,000 DR	
Service cost	76,000 CR				76,000 DR	
Interest: DBO	67,679 CR				67,679 DR	
Interest: assets		57,600 DR			57,600 CR	
Contribution		60,000 DR		60,000 CR		
Benefits paid	25,000 DR	25,000 CR				
Remeasurement		12,400 DR				12,400 CR
gain: assets						
Journal entry			75,679 CR	60,000 CR	148,079 DR	12,400 CR
Closing balance	870,663 CR	745,000 DR	125,663 CR			

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Note that the cost of additional pension benefits granted to employees based on their past service has been immediately expensed. This amount represents the increase in the DBO calculated by the actuary as a result of giving the employees these benefits. The granting of these entitlements is treated as a new event, so it would not be appropriate to adjust prior periods for the additional amount. It would also be inappropriate to capitalize this amount as the employee service that has generated the benefit has already occurred (i.e., there is no future benefit to the company). The result is a significantly larger pension expense in the current year. The company will also report a significantly higher liability, $125,663, on its balance sheet.

The company will make the following journal entry in 2022:



Net Defined Benefit Asset

In our examples, the net defined benefit balance was always in a credit position, meaning the plan was underfunded. However, a plan can be overfunded as well, meaning the fair value of the assets held in the plan exceeds the actuarially determined present

value of the DBO. This doesn't create any particular accounting problem, as the amount would simply be reported as an asset on the sponsoring company's balance sheet. However, IAS 19 requires that the balance of an overfunded plan be reported at the lesser of:

- The amount of the surplus (the overfunding in the plan)
- The asset ceiling

The asset ceiling is defined as the present value of "future economic benefits available to the entity in the form of a reduction in future contributions or a cash refund, either directly to the entity or indirectly to another plan in deficit" (CPA Canada, 2016, IAS 19.65.c). The present value would be determined using the same interest rate as was used in the pension expense calculations. This provision ensures that the net asset reported under the plan does not exceed the present value of the amount that is reasonably expected to be recovered from the overfunded plan.

A video is available on the Lyryx web site. Click Here to view the video.

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17.5: Other Post-Employment Benefits

In addition to pension plans, employers will often provide other types of post-employment benefits to their employees. While there are many other benefits that employers may offer to encourage long service by employees, the most common is additional health care coverage. As IAS 19 requires other post-employment benefits to be accounted for in essentially the same manner as pension plans, this can create some measurement challenges because the use of these benefits is less predictable than a regular monthly pension payment. Health care costs will be incurred when the retired employee becomes ill, and the required amounts to be paid are widely variable. However, despite these measurement challenges, the amounts must still be estimated and accounted for in order to provide a true and fair representation of the company's financial position.

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17.6: Other Employment Benefits

Employers also offer many incentives and benefits to their employees while they are still employed. Some benefits, such as vacation time, may be required by law while other benefits, such as paid sabbaticals, may not be. When determining the accounting treatment for these types of benefits, it is important to understand whether the benefits vest or not. When employment benefits vest with service, they should be accounted for in a similar manner to pension plans (i.e., the amount of the future payment should be estimated and accrued). In the case of short-term benefits, such as annual vacations, the amount is not usually discounted. These types of benefits were covered in more detail in Chapter 12: Current Liabilities. For long-term employment benefits, such as paid sabbaticals, the treatment is also similar to that of pension plans, except that remeasurement gains and losses are accounted for in net income, and not in other comprehensive income.

For employment benefits that do not vest, the accounting treatment is simpler. An example of a benefit that does not vest is a monthly sick leave allowance. An employee may be allowed a certain number of sick days every month, but these do not accumulate if they are not used. In this case, an expense is recorded when the benefit is actually used by the employee, but no accrual is made for any unused amounts. This type of benefit was covered in more detail in Chapter 13.

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17.7: Presentation and Disclosure

The complexities and estimations involved in pension plans have resulted in fairly significant disclosure requirements. Pension plans can create a significant liability to companies, so it is important that financial statement readers have a good understanding of the timing and risks related to future pension plan payments. Below is a summary of the presentation and disclosure requirements of IAS 19.

Balance Sheet

The standard doesn't specify whether the net defined benefit liability or asset should be disclosed as current or non-current. In the absence of specific guidance, reasonable judgment would suggest that these balances should usually be disclosed as non-current. This is because it is normally unlikely that the entire amount of a pension plan obligation would be settled within the next fiscal year, as the payments will be made for many years in the future.

IAS 19 does not allow the netting of a defined benefit asset and a defined benefit liability when the company has more than one pension plan, except in limited circumstances. This is because the assets of each plan are usually protected by legislation in such a way that they cannot be used to settle other obligations. Multiple plans may be presented as a single line item if they are all assets or all liabilities. However, further details will be required in the note disclosures to identify the risks of each plan.

Comprehensive Income Statement

IAS 19 does not specify how the annual pension cost should be reported on the income statement. Although a company could disclose the various components that make up the pension expense separately, it is common practice to simply include a single line item described as pension expense or similar. This amount, however, may be split between various functions consistent with reporting of other employee expenses. Remeasurement gains and losses included in other comprehensive income should be identified as such.

Note Disclosures

The three main disclosure categories identified in IAS 19 are:

- Explanations of the characteristics and risks of the plans
- Explanations of amounts in the financial statements
- Descriptions of how the defined benefit plans will affect the amount, timing, and uncertainty of future cash flow

Although these categories appear fairly simple, IAS provides a significant amount of guidance on how to meet these disclosure objectives. Some of the requirements include:

- The nature of the benefits payable under the plan
- Details of the regulatory environment under which the plan operates
- Disaggregation of financial statement amounts where risk profiles differ
- Reconciliations of opening and closing balances of plan assets and the DBO
- Disaggregation of plan assets where the risks and investment types differ
- Details of significant actuarial assumptions
- A sensitivity analysis showing the effect of changes in the actuarial assumptions
- Information about the timing of future maturities of the plan obligation

There are many other specific disclosure requirements in IAS 19 designed to help the reader understand the possible effects of these plans on future cash flow.

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17.8: IFRS/ASPE Key Differences

IFRS	ASPE
Remeasurement gains and losses on the DBO and the plan assets are reported as part of other comprehensive income.	Remeasurement gains and losses are reported as part of current pension expense.
The projected unit credit method is used to determine the amount of the DBO.	A company can choose to use the actuarial valuation used for funding purposes, or an actuarial valuation prepared specifically for accounting purposes. If the second option is chosen, then either the accumulated benefit method or projected benefit method can be used. (NOTE: a detailed discussion of different actuarial techniques is beyond the scope of this text. All of these techniques represent variations of a present value calculation.)
Net defined benefit asset positions should be reported at the lesser of the actual surplus or the asset ceiling amount.	Net defined benefit asset positions should be reported using a valuation allowance
The interest rate used for discounting should be the rate on high-quality debt investments with similar maturity patterns.	The interest rate used for discounting should be the rate on high-quality debt investments with similar maturity patterns or the rate imputed by the determination of immediate settlement amount, if available.
Provides limited guidance on defined contribution plans.	Provides more detailed guidance, including how to determine the discounted amount of future payments for current services and how to treat interest on unallocated surpluses on converted plans.
Actuarial valuations required with sufficient frequency.	Actuarial valuations required every three years, or sooner, if circumstances change.
Requires detailed disclosures.	Requires simpler disclosures.

17.8: IFRS/ASPE Key Differences is shared under a not declared license and was authored, remixed, and/or curated by LibreTexts.

17.9: Appendix A- Accounting for Post-Employ. Benefits Under ASPE

Prior to 2014, there were some significant differences between ASPE and IFRS with respect to pension plan accounting. The former ASPE standard allowed the use of a technique referred to as the deferral and amortization approach. This technique allowed the costs of past service amendments, and other actuarial gains and losses, to be deferred and recognized in expense over time. This approach was eliminated when Section 3462[1] of the ASPE standards was issued. Section 3462 is effective for all year-ends commencing on January 1, 2014, or later, and it is this standard that we will examine in this appendix.

The approach to accounting for pensions under ASPE 3462 is similar to that of IAS 19, but there are some differences in definitions and procedures. For example, one of the key differences is that ASPE allows for two different methods of valuing the DBO. The company may choose to use the actuarial valuation that has been prepared for the purposes of determining the funding levels for the plan, or the company may choose to use a separately prepared actuarial valuation for accounting purposes. It is possible that certain actuarial assumptions, and other factors, may differ between these two valuations. If the company chooses to use a valuation prepared specifically for accounting purposes, then it must choose between two approaches used for valuation of the DBO. The company may choose to use either the accumulated benefit method or the projected benefit method. The accumulated benefit method essentially calculates the present value of future pension payments for vested and non-vested employees using their current salary levels. Whereas, the projected benefit method performs this calculation using future expected salaries. Generally, the projected benefit method will result in a larger DBO. Whichever method the company chooses, it must apply the policy consistently to all of its pension plans. A detailed discussion of the different types of actuarial valuations is beyond the scope of this text. They all represent variations of a present value calculation that will normally be provided by the actuary.

Another key difference between ASPE 3462 and IAS 19 is that any remeasurement gains or losses due to changes in actuarial assumptions, or differences between the actual return on plan assets and the calculated return based on the appropriate interest rate, are charged directly to the pension expense for the year, rather than being captured by other comprehensive income.

Let's consider our previous example using the facts presented for Ballard Ltd. in 2021:

	Pension Plan		**Company Accounting Records**		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	614,800 CR	573,000 DR	41,800 CR		
Service cost	65,000 CR				65,000 DR
Interest: DBO	49,184 CR				49,184 DR
Interest: assets		45,840 DR			45,840 CR
Contribution		55,000 DR		55,000 CR	
Benefits paid	23,000 DR	23,000 CR			
Remeasurement		10,840 CR			10,840 DR
loss: assets					
Remeasurement	16,000 DR				16,000 CR
gain: DBO					
Journal entry			8,184 CR	55,000 CR	63,184 DR
Closing balance	689,984 CR	640,000 DR	49,984 CR		

Note that the remeasurement gain due to changes in actuarial assumptions, and the remeasurement loss due to the deficiency in the actual return on plan assets, are both included in pension expense for the year, rather than in other comprehensive income. This treatment will result in the following journal entry in 2021:

The absence of other comprehensive income in the adjustment means that current net income will be more volatile for companies reporting under ASPE. However, under Section 3462, companies are required to disclose the effects of any re-measurements separately, so readers will be able to clearly see the effects of these items on net income.

Another difference between Section 3462 and IAS 19 is in the treatment of net defined benefit assets. While IAS 19 requires the amount be reported at the lesser of the surplus amount or the asset ceiling, Section 3462 instead requires the use of a valuation allowance. The valuation allowance essentially represents the amount of the surplus that will not be recoverable through future reductions in contributions or withdrawals. The net effect of this approach is essentially the same as IAS 19, but Section 3462 provides more detailed guidance on how to calculate the amounts recoverable from the plan in the future.

Section 3462 also provides a choice of interest to use for discounting purposes. The first option is the same as IAS 19 (i.e., the rate on high-quality debt instruments), but the second option allowed is the imputed interest that would be determined if the plan were to be settled. This option, however, should only be used in cases where the option of immediate settlement, such as through the purchase of an annuity contract from an insurance company, is actually available.

The treatment of defined contribution plans under Section 3462 is essentially the same as IAS 19, although Section 3462 provides a more detailed description on how to determine when future payments for current services are to be discounted. Additionally, Section 3462 discusses how to treat unallocated plan surpluses that could arise when a defined benefit plan is converted to a defined contribution plan. Interest on these surpluses would be deducted from the pension expense otherwise determined.

Section 3462 requires that an actuarial valuation of the plan be carried out at least every three years, and more frequently if there have been any significant changes in the plan. IAS 19 does not specify the frequency of actuarial valuations, but suggests that they be carried out with sufficient frequency as to ensure there are no material errors in the reported balance.

A video is available on the Lyryx web site. Click Here to view the video.

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17.10: Chapter Summary

LO 1: Describe the nature of a pension plan and identify the key issues in accounting for a pension plan.

A pension plan is an arrangement by which employers offer benefits to employees after the completion of their employment. Employees earn pension benefits over the course of their employment with the company. These benefits can take many forms, but pension plans usually involve post-employment payments made to the retired employee on a periodic basis. The key accounting issues are: Who pays for the plan? How will the plan's activities be measured? How will the plan be reported?

LO 2: Define and contrast *defined contribution pension plans* and *defined benefit pension plans*.

A defined contribution pension plan is one in which the employer has agreed to contribute a specified amount on behalf of an employee, but has not guaranteed the amount of retirement income the employee will receive. In contrast, a defined benefit pension plan does specify the amount of income the employee will receive upon retirement. Under both types of plans, it is the employers' responsibility to make sufficient contributions to the plans as per the agreements made with their employees. The key accounting difference between the two plans is that a defined benefit pension plan creates a liability for the employer to cover any shortfall of funding, based on the present value of future expected payments, to ensure the agreed upon amount of retirement income is available to the employee. A defined contribution pension plan, on the other hand, only creates a liability to the extent that the company is required to make the agreed upon contributions to the plan. The employer is not responsible for the performance of a defined contribution pension plan, but is indirectly responsible for the performance of a defined benefit pension plan.

LO 3: Prepare the accounting entries for a defined contribution pension plan.

The employer records an expense every year for the amount of contributions they are required to make. They will also record a liability if the contributions are unpaid at the end of the year. However, as there is no guarantee of future retirement income, the company does not record any liability beyond the amount of contributions required.

LO 4: Describe the various estimations required and elements included in the accounting for defined benefit pension plans, and evaluate the effects of these estimations on the accounting for these plans.

The determination of the DBO requires estimation of several amounts. The expected date of the employee's retirement and the expected duration of pension payments (i.e., the amount of time between the employee's retirement and death) need to be estimated. As well, the amount of the expected pension payment will need to be predicted, as this amount may be based on future salary levels. The interest rate used to discount the obligation should be based on the yields on high-quality debt instruments, but there may be subjectivity in determining which instruments to choose. Most accountants don't have the required training to make these kinds of estimations, so they will likely have to rely on the work of an expert called an actuary. Because the estimates can change every year based on new information and assumptions, it is possible that the accounting for the pension plan may create some volatility in reported earnings, including comprehensive income.

LO 4.1: Calculate pension expense for a defined benefit pension plan and prepare the accounting entries for the plan.

The pension expense includes the cost of current service provided by employees, the net interest on the scheme, and changes due to past service adjustments and other amendments. The net interest represents the difference between interest calculated on the DBO and the interest expected to be earned on the plan assets. Both calculations use the same interest rate—the yield available on high-quality debt instruments. The pension expense should be allocated to the various components of net income in the same fashion as the underlying compensation costs.

The DBO is increased by the current service cost, the cost of any past service benefits granted during the year, and interest calculated on the balance. The DBO will be decreased by any pension payments made during the year and may be increased or decreased by any re-measurements caused by changes in actuarial assumptions. The pension plan assets will be increased by actual returns earned on the assets and contributions made by the employer. The pension plan assets will be decreased by any pension payments made during the year.

Several issues are involved in the determination of the net asset or liability to be reported on the balance sheet. First, the amount of the DBO is based on future events for which complex actuarial calculations are required. Second, the fair value of the pension plan assets must be determined. For many assets, this is quite straightforward, but if the pension plan holds real estate or other assets not

actively traded, expert consultations may be required. Once the amounts are determined, the net pension liability (asset) can be determined and reported on the balance sheet, usually as a non-current item. Other changes in value, such as changes in actuarial assumptions used to determine the DBO or differences between the expected and actual return on plan assets, are recorded as part of other comprehensive income.

LO 4.2: Describe the accounting treatment of net defined benefit assets.

A net defined benefit asset represents a situation in which the plan assets exceed the DBO. This means that the plan is overfunded. The amount of overfunding should be reported as an asset, but only to the extent that it doesn't exceed the asset ceiling, that is, the present value of the future benefits available to the plan sponsor, either through reduced contributions or cash refunds.

LO 5: Discuss the challenges in accounting for other post-employment benefits.

Other post-employment benefits, such as supplementary health coverage, are treated in a similar fashion as pension plans for accounting purposes. However, challenges can arise in estimating the future payable amounts and the amount of the obligation. Future payments for health care coverage can be very unpredictable in both the timing and the amount. A greater degree of estimation risk may exist for these kinds of benefits as compared to pension plans.

LO 6: Describe the accounting treatment for other employment benefits.

Other kinds of employment benefits may include paid vacations, sabbaticals, or sick leave. For these kinds of benefits, it is important to understand whether they vest or not. Benefits that vest, such as paid vacations, must be accrued and recorded by the company. However, these benefits are not normally discounted, and any remeasurement gains or losses that occur are recorded directly in net income instead of other comprehensive income. For benefits that do not vest, an expense is recorded when the benefit is used, but no amounts are accrued.

LO 7: Identify the presentation and disclosure requirements for defined benefit pension plans.

Accrued net defined benefit amounts are normally recorded as non-current liabilities or assets. When the company sponsors multiple pension plans, they are generally not netted on the balance sheet. Pension expense can be shown as a single item on the income statement or it can be split into component parts. Remeasurement amounts recorded in other comprehensive income should be disclosed separately. There are extensive note disclosure requirements for pension plans to help the readers understand the risks of these plans and potential effects on future cash flow.

LO 8: Identify differences in the accounting treatment of post-employment benefits between ASPE and IFRS.

The treatment under ASPE is similar to the treatment under IFRS, but there are some differences. Under APSE, remeasurement amounts are reported directly in net income, rather than in other comprehensive income. Also, companies have a choice in the method used to measure the DBO and in the interest rate chosen to discount the obligation. If a net defined benefit asset is reported, ASPE requires the use of a valuation allowance. ASPE provides more detailed guidance on how to calculate some of the amounts required to determine the DBO, but less detailed guidance on disclosure requirements. They also require actuarial valuations every three years, whereas IFRS only requirements them with sufficient frequency.

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17.11: References

Bombardier. (2015). *2014 financial report*. Retrieved from http://ir.bombardier.com/modules/misc/documents/66/00/27/88/14/Bombardier-Financial-Report-2014-en2.pdf

CPA Canada. (2016). *CPA Canada handbook*. Toronto, ON: CPA Canada.

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17.12: Exercises

17.1

Identify each statement below regarding pension plans, as being true for either defined contribution plans (DC) or defined benefit plans (DB):

	DC or DB
The employer has no obligation to the fund beyond the required payment	
Accounting for this type of plan is more complicated	
The employer bears the investment risk with this type of plan	
A liability is only recorded when the required payment is not made by year-end	
Accounting for this type of plan will likely require the use of actuarial specialists	

17.2

On January 1, 2022, Trelayne Industries Inc. established a defined contribution plan for its employees. The plan requires the employees to contribute 4% of their gross pay to the plan, with Trelayne Industries Inc. contributing an additional 6% of the gross pay. In 2022, employees covered by the pension plan earned total gross salaries of $10,500,000. Employees are paid monthly, and the contributions to the pension plan are made on the 10th of the month following the month worked. All required contributions in 2022 were paid to the pension plan, except for the December payroll, which was not remitted until January 10, 2023. Assume employees' pay is earned equally throughout the year.

Required:

a. Prepare a summary journal entry for Trelayne Industries Inc.'s pension plan transactions for 2022.
b. What is the amount of pension expense that the company will report in 2022?
c. What is the amount of pension liability that the company will report on December 31, 2022?

17.3

With respect to its pension plan, Renaldi Ltd. reported a net defined benefit balance of $750,000 CR on January 1, 2023, and $832,000 CR on December 31, 2023. During 2023, the company contributed $57,000 to the pension plan. The company reports under IFRS.

Required:

a. Assuming there were no remeasurement gains or losses in 2023, determine the pension expense that would be reported for the year.
b. Repeat part (a), assuming that the company experienced a remeasurement loss of $12,000 with respect to plan assets.

17.4

Mackaby Inc.'s defined benefit pension plan reported a current service cost of $1,600,000 in the current year. As well, the expected return on the plan assets using a market-based interest rate was $900,000, while the actual return earned on the assets was $870,000. The interest calculated on the DBO was $936,000. There were no remeasurement gains or losses related to the DBO during the year.

Required: Calculate the pension expense for the year.

17.5

Franck Ltd. initiated a defined benefit pension plan for its employees in 2012. On January 1, 2021, the plan showed a DBO balance of $6,300,000 and plan assets of $5,950,000. In 2021, the company reported a current service cost of $575,000. The current interest rate on high-quality corporate bonds is 7%. During the year, the pension plan assets earned a return of $437,000. In 2021, the company contributed $682,000 to the plan, and the plan paid out pension benefits of $186,000.

Required:

a. Complete the pension worksheet for 2021.
b. Prepare the journal entry required to report the pension transactions in 2021.
c. What is the net defined benefit balance reported on the balance sheet on December 31, 2021, and how would it be classified?

17.6

The following information regarding Mirocek Inc.'s defined benefit pension plan is available:

DBO: January 1, 2022		$	4,400,000
Plan assets: January 1, 2022		$	4,550,000
Current service cost for 2022		$	565,000
Interest rate on high-quality corporate bonds		$	8%
Actual return on plan assets in 2022		$	312,000
Remeasurement loss due to changes in actuarial		$	176,000
assumptions on the DBO			
Contributions made by the company to the plan in 2022		$	422,000
Payments made by the plan to retirees in 2022		$	166,000

Required:

a. Complete the pension worksheet for 2022.
b. Prepare the journal entry required to report the pension transactions in 2022.
c. Prepare the balance sheet excerpt showing how the pension amounts would be disclosed at 31 December 2022.

17.7

Morant Ltd. initiated a defined benefit pension plan for its employees on January 1, 2020. The plan trustee has provided the following information:

	2020		2021		2022	
Fair value of plan assets on December 31	$	350,000	$	610,000		?
DBO on December 31	$	362,000		?		?
Remeasurement loss (gain) re: DBO	$	(27,000)		0	$	42,000
Remeasurement loss (gain) re: plan assets		?		?	$	15,000
Contributions by Morant Ltd.	$	348,000	$	301,000	$	265,000

There were no balances in the plan when it was initiated on January 1, 2020. The appropriate interest rate for this plan was 7% in 2020 and 2021, and 8% in 2022. The current service cost was $389,000 in 2020, $395,000 in 2021, and $410,000 in 2022. The plan paid no benefits in 2020, but paid $50,000 in 2021 and $54,000 in 2022. Assume that all cash payments into and out of the plan were made on December 31 of each year.

Required:

a. Complete the pension worksheets for the years 2020 to 2022.
b. Prepare the journal entries required for the years 2020 to 2022.
c. Prepare the balance sheet presentation of the relevant pension accounts for each year-end from 2020 to 2022, and identify if the pension plan is overfunded or underfunded.

17.8

Weitz Inc. has provided a post-employment supplemental health care plan for its employees for many years. On January 1, 2021, the company granted past service credits with an actuarially determined value of $215,000 to a group of employees. The balance of the health benefit obligation on January 1, 2021, immediately prior to the granting of the past service credit, was $6,246,000. The appropriate discount rate during 2021 was 9%. The fair value of the plan assets on January 1, 2021 was $6,871,000. During the year, the current service cost was $510,000 and contributions to the plan were $430,000. Health benefits paid out to retired employees by the plan during 2021 totalled $850,000. Assume all cash transfers in and out of the plan occurred at the end of the year and that there were no other remeasurement gains or losses.

Required:

a. Determine the post-employment supplemental health expense for the year ending December 31, 2021.
b. Determine the net amount of the liability or asset for this plan to be reported on December 31, 2021.

17.9

Repeat the requirements of Exercise 16–5, assuming the company reports under ASPE.

17.10

Repeat the requirements of Exercise 16–6, assuming the company reports under ASPE.

1. CPA Canada (2016), Part II – Accounting, Section 3462.

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CHAPTER OVERVIEW

Chapter 18: Leases

Leasing Versus Buying Equipment: Which is the Best Choice?

The short answer to this question is "it depends." The question of leasing versus buying has always been a sticking point for business management decisions because equipment is often a high-priced item and can require the firm to pay out a lot of cash. The following are some of the advantages and disadvantages of leasing equipment.

Leasing Advantages

- **Low up-front costs and predictable payments over the lease term.** Leasing allows for a minimal initial cash payment, regular predicable payments, and a predictable interest rate over the life of the lease, making cash flow management easier. This is a significant consideration for new companies with a lot of competing cash flow needs, or existing companies expanding their business market share or product lines.
- **Protects against obsolescence.** Non-current assets such as equipment are part of the asset base from which a company generates its revenue and profits. For this reason, these assets should be monitored and kept as efficient and productive as possible. That said, many businesses treat owned equipment as a permanent fixture and often do not plan for major repairs or eventual replacement. As a result, when that time comes, there may not be enough cash set aside to address these *repair or replace* requirements adequately. Old equipment often gets stretched to the limit and beyond, increasing production downtime and negatively impacting revenue and profits. Often the additional costs to operate and repair old and outdated equipment outweighs any interest costs incurred for leasing new equipment that would maximize efficient production costs, generating more revenue and profits.
- **New technology improves productivity.** The lower entry cash requirements and the option to dispose of the equipment at the end of the lease term enable businesses to employ the most advanced technology within their industry sector. This gives them an edge over their competitors in terms of better productivity, more competitive pricing, and potentially employing fewer people. Leasing also enables businesses increased flexibility so they can change equipment quickly in response to changing environments and customer needs.
- **Tax benefits.** Operating lease payments are recorded as operating expenses, so they are tax deductible, and the lease is reported as a leased asset obligation on the balance sheet (referred to as off-balance sheet financing). This means that operating leases will usually not negatively impact the company's liquidity and solvency ratios or any restrictive covenants from other creditors.

Leasing Disadvantages

- **Higher ownership costs.** Leased equipment is generally new, which tends to depreciate the most in the early years.
- **No accumulated equity.** Depending on the type of lease, businesses will never have title or ownership, so there is no equity to accumulate.
- **Lease payments always exist.** If a business is seasonal, there may be slow cycles throughout the year where the equipment is idle. Under a lease agreement, cash payments continue, which could put a strain on a business going through a slow cycle or downturn. Also, with leasing agreements, negotiations are necessary, and businesses are subsequently tied to the specific lease term.
- **Scheduled maintenance and repair costs.** Many leasing agreements include a structured repair and maintenance schedule that must be followed by the lessee. With equipment ownership, the business can make its own decisions about when maintenance is required.

(Source: Landscape Managing Network, 2010)

Learning Objectives

After completing this chapter, you should be able to:

- Describe leases and their role in accounting and business.
- Describe the criteria used for ASPE and IFRS to classify a lease as a capital/finance lease.

- Prepare the accounting entries of a capitalized lease for both the lessee and lessor.
- Prepare the accounting entries of a capitalized sale and leaseback transaction.
- Explain how leases are disclosed in the financial statements.
- Explain the similarities and differences between ASPE and IFRS regarding capitalization criteria, interest rates, and disclosures.

Introduction

This chapter will focus on the basics of leasing agreements. Leases can be classified as either an operating lease, like a simple rental agreement, or a capital lease, where the leased item is classified as an asset with a corresponding liability (whether or not the legal title transfers to the lessee). The accounting standards focus on the economic substance rather than on the legal form. Leases will be discussed in terms of their use in business, their recognition, measurement, reporting and analysis. Leases will also be discussed and illustrated from both the viewpoint of the company leasing from another party (lessee), and the company leasing to another party (lessor).

Chapter Organization



18.1: Overview
18.2: Classification Criteria for Capitalization
18.3: Accounting Treatment For Leases, Two Accounting Standards
18.4: Sales and Leaseback Transactions
18.5: Leasing- Disclosures
18.6: IFRS/ASPE Key Differences
18.7: Chapter Summary
18.8: References
18.9: Exercises

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18.1: Overview

Businesses often need to update their existing equipment or business space, or perhaps acquire entirely new equipment or accommodation as they expand their operations. The opening story describes the pros and cons of leasing assets versus buying them. The answer isn't straightforward and requires an analysis of the business on a case-by-case basis to determine whether buying or leasing is the best option. This chapter will focus on a business's decision to lease equipment and the accounting treatment that is required as a result.

Leasing is simply defined as the right to use an asset for a specified period in exchange for cash payments or other consideration. This definition is broad and includes common transactions, such as leasing an apartment from a landlord or leasing a car from a dealership. In the case of a private individual, these types of leases are generally treated as rental agreements and a rental expense. In the case of businesses entering into leasing agreements, such as renting office space or equipment, the accounting treatment is more complex. It depends on the economic substance of the transaction and how closely the transaction meets certain prescribed criteria set out in the ASPE and IFRS accounting standards. In some cases, it will be classified as an operating lease where cash payments are recorded to rental expense. In other cases, it will be classified as a capital lease where the business would report the leased asset in the balance sheet, along with an associated lease obligation as a liability. The main focus of this chapter will be the accounting treatments for ASPE and IFRS.

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18.2: Classification Criteria for Capitalization

For all businesses to comply with the accounting standards, lease agreements must be classified as either an operating lease or as a capital (ASPE)/finance (IFRS) lease. Each accounting standard has set its own criteria to determine the classification and is based on who substantively bears the risks and rewards of ownership or the right-of-use of the asset.

Before getting into the details regarding the accounting treatment under IFRS, be aware that there is a new IFRS standard, IFRS 16 that commenced January 1, 2019. The impact of this new standard resulted in all asset-based leases being capitalized with only two exceptions; low $-value, and short-term leases of 12 months or less. These can continue to be treated as operating leases. This means that many of the leases that previously met the criteria as operating leases will now be capitalized and recorded as a right-of-use asset and a leased obligation (liability). The classification approach has changed to a contract-based one that views asset-based leases as "right-of-use" assets where the lessor gives the lessee the right to use the leased asset in exchange for periodic payments over the lease term. These payments represent a contractual obligation to the lessee. For the lessee, this means recognition of a right-of-use asset and a lease obligation, which will reduce the instances of "off-balance sheet financing" as an operating lease. For lessors, the accounting treatment has not changed from the previous IFRS standard. If the lease is classified as an operating lease under either ASPE or IFRS, the entries are straightforward. For example, if the lessee pays $12,000 per year, and the lease is classified as an operating lease under either ASPE or IFRS, the entries are as follows:

For lessee:



For lessor:



If the lease payment is made in advance, a prepaid expense account may be used and costs expensed over the fiscal period consumed. No entries are made by the lessee to classify and record a leased asset or to recognize a lease obligation (liability). No obligation means that the lessee can use the leased asset without any impact on its liquidity, coverage, or debt ratios. Classification as an operating lease is an example of *off-balance sheet financing*. The avoidance of reporting a liability can motivate manufacturers and lessee businesses to play with the numbers to stay under the ASPE capitalization criteria, enabling management to classify the lease as an operating lease and avoid reporting an additional liability for the lease obligation. This allows a business to report operations in the best light, even though from an economic standpoint the results reported to shareholders and creditors do not reflect the economic reality. Since IFRS 16 allows a lease to be classified as an operating lease only if it is a low $-value or for short-term leases of 12 months or less, it has effectively eliminated the opportunity under IFRS for management to manipulate the numbers.

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18.3: Accounting Treatment For Leases, Two Accounting Standards

The ASPE Accounting Standard for Leases[1]

Lessee Classification:

Under ASPE, the lessee evaluates a lease on a classification basis (i.e. where the risks and rewards are deemed to substantively pass to the lessee as evidenced by the criteria below). Later in this chapter, IFRS 16 will be discussed which identifies another approach for lease evaluation, called the contract basis. More on that later.

Under ASPE, the lessee is to classify the lease as a capital lease if any one or more of the following criteria is met:

1. There is either a transfer of ownership through a bargain purchase option (BPO) included in the lease agreement. If a BPO exists, it is assumed that the lessee will exercise the right to purchase the asset at the BPO price because this price is significantly lower than the asset's fair value at that time.
2. Lease term must be at least 75% of the asset's estimated economic or useful life. The lease term also includes any bargain renewal option, which is assumed the lessee will exercise, since this price will be significantly lower than market at that time.
3. The lessor will recover 90% or more of the leased asset's fair value as well as realizing a return on the investment. The lessee is in substance purchasing the asset. The threshold calculation is the present value of the sum of the present value of:
    - the lease payments (excluding any executory, maintenance, or contingent costs paid by the lessee that are included in the lease payment);
    - a guaranteed residual value
    - a bargain purchase option.

This sum is referred to as the *minimum lease payment*.

The interest rate used in the present value calculation is the *lower of* the lessor's implicit rate if known, and the lessee's incremental borrowing rate.

For points 2 and 3 above, consider that even though the leased asset's title has not legally transferred to the lessee, the risks and rewards of ownership have been substantively transferred to the lessee, hence the accounting treatment to capitalize the lease asset, recognize the lease obligation, and record the leased asset depreciation and accrued interest on the lease obligation. This is an example of a case in which the economic substance, rather than the legal form, dictates the accounting treatment.

Special Note: For ASPE, the leased asset valuation amount cannot exceed its fair value at that date.

Lessor Classification

For the lessor classification as a capital lease, ASPE requires any one of the above three criteria for the lessee to be met, **plus** two additional criteria:

1. Collectability of the lease payments is reasonably predictable.
2. There are no important uncertainties about costs that have not yet been incurred by the lessor.

If these two additional criteria are not met, it would not be appropriate for the lessor to remove the leased asset from its accounting records.

Further analysis is required to determine if the lease is a sales-type lease, indicated by the existence of a profit, or if it is a direct-financing lease, which is usually the case when lessors are finance companies or banks and not manufacturers or dealers.

If the lease is deemed to be a capital lease, the lessor removes the asset from its leased assets inventory and records a receivable amount equal to the sum of the undiscounted lease payments, plus any *guaranteed or unguaranteed* residual value, or a bargain purchase option. The lessor must also record the lease as either a sale, if the fair value of the lease is greater than the cost of goods sold (a profit), or as a financing arrangement (no profit).

Special Items

Indirect costs. Any initial direct costs of negotiating and arranging the **acquisition of** the lease are included in the lessor's investment amount to be recovered when calculating the lease payment amount because the lease payment is intended to recover these costs.

Executory costs. Lease payments often include leased asset use costs that the lessor has paid and wants to recoup from the lessee, such as insurance, maintenance, licenses, or tax costs. These executory costs are to be excluded when calculating the present value of the lease asset and obligation, and separately recorded as an expense for the lessee. This is because these costs don't arise from the acquisition of the leased asset, but rather **from its use**. For example, if the lease payment of $14,000 included $2,000 for insurance of the leased asset, the lessee's journal entry would be:



Economic life versus lease term. The economic life of an asset is usually longer than the lease term. Depreciation of a leased asset by the lessee for a capitalized lease is based on whether the title of the leased asset transfers to the lessee. If the legal title remains with the lessor, and the leased equipment is returned to the lessor at the end of the lease term, and the depreciation period of the leased asset will be the lease term. If the legal title to the leased asset transfers to the lessee at the end of the lease term, or there is a bargain purchase option (BPO) or bargain renewal option, it is assumed that the lessee will exercise this option since the price of either a BPO or a bargain renewal option is significantly lower than the market price at that time. For this reason, a leased asset under these circumstances will be depreciated over its economic or useful life instead of over the lease term. This makes intuitive sense, given that the lessee intends to continue to use the asset beyond the lease term.

Interest rates. ASPE advocates the lower of either the lessor's implicit rate (if known) or the lessee's incremental borrowing rate. This is to ensure that an artificially high interest rate is not used to lower the present value enough to result in a classification as an operating lease. Recall from previous chapters regarding long-term debt that the higher the interest rate, the lower the present value of the debt obligation. Using an unrealistically high interest rate for a lease could reduce the present value of the lease to below the capitalization threshold criterion of 90% under the ASPE standard. This would enable management to avoid the requirement to classify the lease as a capital lease and to report the leased asset and lease obligation on the balance sheet. Management might be motivated to do this because a capital lease asset and liability will change the liquidity and solvency ratios that are often monitored by creditors.

Once an interest rate is selected, the accrued interest for the lessee and interest income for the lessor are calculated using the effective interest method discussed in the long-term debt chapter.

Example 1: ASPE Sales-type Lease

The accounting treatment is best explained using a numeric example. On January 1, 2021, Tweenix Corp. (lessee) entered into an agreement to lease a piece of landscaping equipment from Morganette Ltd. (lessor). The lease details are below:

Non-cancellable lease term	8 years
Lease bargain renewal option or a bargain purchase option	None – equipment
	reverts back to lessor
Residual value (not guaranteed by lessee)	$36,000
Annual lease payment due each January 1 (annuity due)	Lessor to determine
Equipment cost to lessor	$666,000
Equipment estimated economic life	9 years
Equipment fair value on January 1, 2021	$864,000
Lessor has set the following implicit rate of return, which is known to lessee	7%
Lessee incremental borrowing rate	8%

Other information:

- Both companies' year-ends are December 31, and both follow ASPE.
- Collectability of the lease payments is reasonably predictable and there are no important uncertainties about costs that have not yet been incurred by the lessor.
- The lessee depreciates all equipment on a straight-line basis.

Accounting Treatment of a Capital Lease – Steps and Entries

Step 1. Lease variables include determining the lease payment amount, the length of the lease, the interest (discount) rate, the bargain purchase option or bargain renewal option (if any), and the residual value whether guaranteed or unguaranteed by the lessee:

In this case, the lessor wants to get a return of 7% on the investment. Other negotiated details between the lessor and lessee result in a lease term of eight years, no bargain purchase or bargain renewal options, with the leased asset reverting back to lessor at the end of the lease term. The lessee does not guarantee the residual value of $36,000 at the end of the lease term in this case. The equipment originally cost $666,000 and has a current fair value of $864,000. The lessor must now calculate the lease payment amount that the lessee will pay at the beginning of each year which will enable the lessor to recoup the investment cost plus a return on investment. Because the lease payments will be made at the beginning of each year, the payment calculation using present values and a financial calculator will be for an annuity due (AD). This means that, in this example, the lease payment is to be made at the beginning of each year instead of at the end. The annuity due concept was discussed in further detail in the chapter on long-term debt under present values and timelines.

The variables used to calculate present value of the the lease payment amount include a 7% expected rate of return (I/Y), the $864,000 fair value as the present value (PV) of the equipment, the eight years duration of the arrangement (N), and the $36,000 unguaranteed residual value (FV) that the lessor hopes to receive by reselling the used equipment in the marketplace at the end of the lease term.

Recall that when calculating the lease payment, it does not matter if the residual value is guaranteed or not guaranteed by the lessee because the residual value represents a cash flow in, no matter the source because the lease payment calculation is *from the lessor's point of view*. The present value calculation of the lease payment (annuity) using a financial calculator is:

=	

The lease payment will be $131,947 per year for eight years for the lessor to recoup the asset's fair value of $864,000, earn a 7% return, and recoup a residual value of $36,000 from the marketplace at the end of eight years. The unguaranteed residual value that the lessor expects to receive once the leased asset is sold in the marketplace at the end of the lease term causes the lease payment amount for the lessee to be reduced. Had there been no residual value, the lessee's lease payment amount would be for a higher amount of $135,226 (+/- 864,000 PV, 7 I/Y, 8 N, 0 FV).

Step 2. Analysis and classification of the lease as an operating or capital lease:

The terms of the lease agreement are now set, and it is time to determine whether the lease is to be classified as an operating or capital lease by both parties. Since these companies follow ASPE, this will be the criteria used.

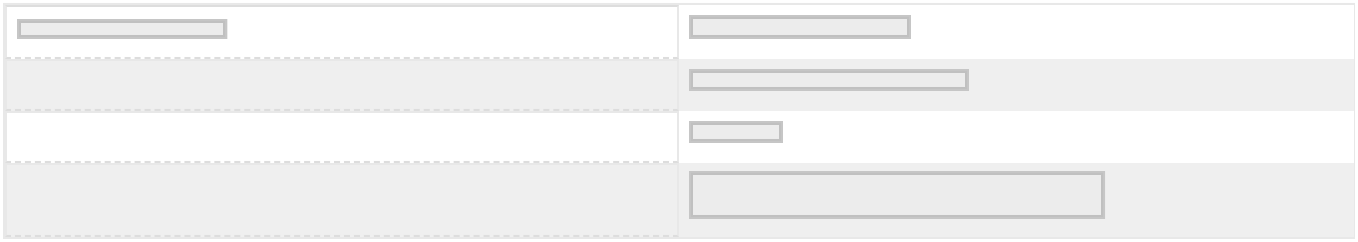
Lessee Analysis

As previously stated, at least one of the four criteria below must be met for the lease to be classified as capital, otherwise it will be classified as an operating lease. Below, highlighted in red, are the results of the analysis for this example:

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No
- Is the lease term at least 75% of the asset's estimated economic or useful life? Yes, capitalize leased asset.

Note: At this point, as one of the criteria has been met, the capitalization classification of the lease is now applicable, but the lessee analysis will continue to include the fourth criteria for illustrative purposes.

- Is the present value of the minimum lease payment (i.e. the net cash flows) at least 90% of the fair value of the leased asset? Yes, as calculated below.



The interest rate is the lower of the lessor's implicit rate (7%) which is known to the lessee or the lessee's incremental borrowing rate (8%).

Present value calculation of the minimum lease payments:



* The residual value is not guaranteed by the lessee so it is not included in the lessee's present value calculation.

The fair value of the leased asset is $864,000, so the present value of the net cash flows is 97.575% and is greater than the threshold criterion of 90%. The present value of $843,048 is lower than the fair value amount of $864,000. The leased asset and the associated lease obligation will be the amount of the present value of the lessee's minimum lease payments of $843,048. For the lessee, the analysis reveals that this lease meets two of the criteria for capitalization. Since only one needs to be met, the lessee will classify this lease as a capital lease.

Lessor Analysis

The criteria above are also used to determine if the lease is to be a capital lease for the lessor, plus two additional criteria, and both of these must be met to be a capital lease:

- Collectability of the lease payments is reasonably predictable. Yes
- There are no important uncertainties about the un-reimbursable costs yet to be incurred by the lessor. Yes

The lessor must now determine if the lease is to be treated as a sales-type lease or a direct-financing lease. In this case, the fair value of the lease of $864,000 exceeds the lessor's cost of $666,000, meaning that a profit exists which classifies this as a sales-type lease. To summarize the analyses above, if the lease meets the criteria for capitalization for the lessee, it will also be classified as a capital lease for the lessor, provided that there are no collectability issues or uncertainties about un-reimbursable costs. For the accounting treatment, in summary:

- The lessee records the capitable leased asset and the corresponding lease obligation based on ***the lower of*** the present value of the minimum lease payments and the leased asset's fair value at that time. The payments made to the lessor are recorded as a reduction in the lease obligation. At the end of each reporting period, the leased asset is depreciated and the interest on the lease obligation is accrued.
- As a sales-type lease, the lessor records the total lease receivable, the sales revenue, and the unearned interest income that will be realized over the lease term. The leased asset is also transferred from the leased assets inventory to cost of goods sold. Any lease payments received are recorded as a reduction of the lease receivable. At the end of each reporting period, the interest earned is transferred from unearned interest income to interest income.

Step 3. Record the entries for the lessee:



* PV = (131,947 PMT/AD, 7 I/Y, 8 N, 0 FV)

** 843,048 lease asset amount divided by 8 years lease term if SL depreciation policy is used.

***

Step 4. Record the entries for the lessor:



*

Since the residual value is *not guaranteed* by the lessee, its present value is excluded from both COGS and sales as shown below:

**

PV = (7 I/Y, 8 N, 36,000 FV) = 20,952

***

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Step 5. Report the results, a partial balance sheet:

Lessee – Balance Sheet						Lessor – Income Statement				
as at December 31, 2021						for the year				
						ended December 31, 2021				
Property, plant, and equipment										
Equipment under lease		$	843,048			Sales revenue			843,048	
Accumulated depreciation			(105,381)			Cost of goods sold			645,048	
			737,667			Gross profit			198,000	
Current liabilities						Other revenue				
Interest payable		$	49,777			Interest income			51,244	
Current portion of lease obligation*			82,170							
Long-term liabilities**										
Lease obligation (note X)			628,931							

*

**

Step 6. Record the final entry at the end of the lease term:

At the end of the lease term, the leased asset is returned to the lessor. The lessee's accounting records will show that the leased asset will now be fully depreciated, and the lease obligation will have a zero-balance owing. If the residual value of $36,000 is equal to the fair value at that time, the final entries for the lessee and lessor at the end of the lease term would be:

For lessee:

For lessor:

If the lessor receives the full amount of the unguaranteed residual value from the marketplace, the entry would be:

For lessor:



Guaranteed Residual Value

If the lessee guaranteed the residual value, the entries would be changed as shown below (changes for the previous entries are shown in red for comparative purposes):

For lessee:



* PV = (131,947 PMT/AD, 7 I/Y, 8 N, 36,000 FV)

** 864,000 lease asset amount minus the guaranteed residual value of 36,000 divided by an 8-year lease term

***

For lessor:



*

Since the residual value is guaranteed by the lessee, its present value is included in both COGS and sales as shown below:

**

***

At the end of the lease, the leased asset is returned to the lessor. If the lessor can sell the asset for $30,000, then the tessee will owe the lessor $6,000 for the unrecovered portion of the guaranteed residual value of $36,000. The lessee's lease amortization schedule using the effective interest method would be:

Lessee Lease Amortization Schedule

Annuity Due, Guaranteed Residual Value

Year	Payment	Interest @ 7%	Principal	Balance
2021				864,000
2021	131,947			732,053
2022	131,947	51,244	80,703	651,350
2023	131,947	45,594	86,353	564,997
2024	131,947	39,550	92,397	472,600
2025	131,947	33,082	98,865	373,735
2026	131,947	26,161	105,786	267,949
2027	131,947	18,756	113,191	154,759
2028	131,947	10,833	121,114	33,645
2029	36,000	2,355	33,645	0

Note how ASPE includes the full value of the guaranteed residual in the lease amortization schedule. This is different from IFRS which will be discussed later in the chapter. The entries for the lessee and lessor at the end of the lease term would be:

For lessee:

For lessor:

Bargain Purchase Option

What if the lessor included a bargain purchase option (BPO) instead of a guaranteed / unguaranteed residual value, which is less than its fair value at the end of the lease? It is assumed that the lessee will exercise the right to purchase the leased asset at the end of the lease term for the BPO price. The leased asset will no longer be returned to the lessor and the residual value will now apply to the lessee's depreciation calculation. Also, since the title to the asset will transfer to the lessee, the asset will be depreciated over its economic life instead of the lease term.

For simplicity, the fair value of $864,000 will remain the same. The lease payment amount calculated by the lessor will be adjusted to include a BPO of $20,000 in place of the residual value:

The lease payment will be $133,404 per year for eight years so that the lessor can recoup the asset's fair value of $864,000, earn a 7% return, and receive a BPO from the lessee of $20,000 at the end of eight years.

The entries assuming a BPO of $20,000 are shown below. Assume for purposes of depreciation that the asset will have a residual value of $31,500 at the end of its useful life.

For lessee:



* PV = (133,404 PMT/AD, 7 I/Y, 8 N, 20,000 FV)

** (864,000 lease asset amount minus a residual value of 31,500) divided by 9 years economic life

***

For lessor:



*

**

***

Note that the lessee's depreciation decreases significantly with the existence of a BPO and with changing the depreciation period to the asset's economic life instead of the lease term.

The lessee's lease amortization schedule would be:

Lessee Lease Amortization Schedule								
Annuity Due, Bargain Purchase Option								
				Interest				
Year		Payment		@ 7%		Principal		Balance
2021								864,000
2021		133,404						730,596
2022		133,404		51,142		82,262		648,334
2023		133,404		45,383		88,021		560,313
2024		133,404		39,222		94,182		466,131
2025		133,404		32,629		100,775		365,356
2026		133,404		25,575		107,829		257,527
2027		131,947		18,027		115,377		142,150
2028		133,404		9,950		123,454		18,696
2029		20,000		1,304		18,696		0

The entries for the lessee and lessor at the end of the lease term would be:

For lessee:

For lessor:

Example 2: ASPE Direct-Financing Lease

On May 31, 2021, Visuel Ltd. (lessee) leases its equipment from First Finance Corporation (lessor). The lease has the following terms:

Non-cancellable lease term	5 years
Lease bargain renewal option or a bargain purchase option	None – equipment
	reverts back to lessor
Residual value (guaranteed by lessee)	$19,652
Annual lease payment due each May 31 (annuity due)	$41,400
Equipment estimated economic life	6 years
Equipment fair value on May 31, 2021	$203,600
Lessor has set the following implicit rate of return, which is known to lessee	5%
Lessee incremental borrowing rate	6%

Other information:

- Both companies' year-ends are December 31, and both follow ASPE.
- Collectability of the lease payments is reasonably predictable and there are no important uncertainties about costs that have not yet been incurred by the lessor.
- The lessee depreciates all equipment on a straight-line basis.

Step 1. Lease terms:

In this case, the lease payment of $41,400* is already calculated. All other terms are known.

Step 2. Analysis and classification of the lease as an operating or capital lease:

Lessee Analysis

At least one of the four criteria below must be met for the lease to be classified as a capital lease, otherwise it will be classified as an operating lease:

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No.
- Is the lease term at least 75% of the asset's estimated economic or useful life? Yes, capitalize leased asset.
- Is the present value of the minimum lease payment (net cash flows) at least 90% of the fair value of the leased asset? Yes, as calculated below.

  * Recall that the ASPE standards state that the lower of the two interest rates is to be used since both are known to the lessee. In this case, 5% is the lower of the two interest rates.

  ** Residual value is guaranteed by the lessee, so it is included in the lessee's present value calculation.

  Using a financial calculator, the present value of the leased asset is calculated as:

  If the fair value of the leased asset is $203,600, the present value of the net cash flows is 100% and is, therefore, greater than the threshold of 90%.

For the lessee, this analysis reveals that the lease meets two of the criteria for capitalization. Since only one criterion needs to be met, this lease can be classified as a capital lease by the lessee.

Lessor Analysis

Based on the criteria above, the lease will also be a capital lease to the lessor provided that both criteria below are met:

- Collectability of the lease payments is reasonably predictable. Yes
- There are no important uncertainties about the un-reimbursable costs yet to be incurred by the lessor. Yes

To determine the type of lease, since the cost to the lessor is the same as the fair value (i.e., there is no profit) and the First Finance Corporation is not a manufacturer or dealer, the lease is classified as a direct-financing lease for the lessor.

Steps 3. Record the entries for the lessee:



* PV = (41,400 PMT/AD, 5 I/Y, 5 N, 19,652 FV)

** ($203,600 lease asset amount minus the guaranteed residual value of $19,652) divided by 5 years lease term for 7/12 months

***

Steps 4. Record the entries for the lessor:



*

**

***

Step 5. Report the results, a partial balance sheet:

Lessee – Balance Sheet						Lessor – Income Statement				
as at December 31, 2021						for the year				
						ended December 31, 2021				
Property, plant, and equipment										
Equipment under lease		$	203,600			Interest revenue		$	4,731	
Accumulated depreciation			(21,461)							
			182,139							
Current liabilities										
Interest payable		$	4,731							
Current portion of lease obligation*			33,290							
Long-term liabilities**										
Lease obligation (note X)			128,910							

*

**

Step 6. Record the final entry at the end of the lease term:

At the end of the lease, the leased asset is returned to the lessor. If the lessor can sell the asset for $15,000, the lessee will owe the lessor $4,652 for the unrecovered portion of the guaranteed residual value. The entries for the lessee and lessor at the end of the lease term would be:

For lessee:



For lessor:

- A video is available on the Lyryx web site. Click Here to view the video.
- A video is available on the Lyryx web site. Click Here to view the video.
- A video is available on the Lyryx web site. Click Here to view the video.

The IFRS Accounting Standard for Leases (IFRS 16, effective January 1, 2019)

Lessee – Contract Basis:

As previously stated, under ASPE the lessee evaluates a lease using a classification basis to determine if the risks and rewards substantively pass to the lessee using specific criteria such as the 75%/90% hurdle rates. Under IFRS 16, each lease must be evaluated on a ***contract basis***. The contract basis approach is to determine whether a lease contract gives the lessee right-of-use of the leased asset for a specified time period or by a specified extent of use (such as for a specific number of units, kilometers, or other unit-based measure), in exchange for some sort of consideration. The lessee can elect not to capitalize a lease if it is a short-term lease (12 months or less at the commencement date, with no purchase option) or a low-value item when new. Examples of low-value leases could be IT equipment used by employees at their desks, office furniture items, water dispensers, coffee makers, and so on. Both the lessee and the lessor need to make this assessment at the inception of the contract and this determination will remain throughout the lease unless the terms of the contract change. The key factors to consider if a right-of-use asset is to be capitalized along with the obligation for lease payments include:

1. There is a specified asset that is:
   - physically distinct or that the lessee has rights to substantially all of the capacity of that asset and
   - the lessor has no substantive substitution rights,
2. The lessee obtains substantially all the economic benefits throughout the period of use (easier to assess if the lessee has exclusive use of the asset throughout the period of use.)
3. The lessee has the right to direct the asset's use decisions (such as "how and for what purpose"). This can be evidenced by the lessee's rights to change the asset's output, rights to change when to produce the output, where to produce the output, whether or not to produce output, or how much output is produced. [These rights are not to be confused with the lessor's rights to protect the leased asset in terms of compliance with laws and regulations and for its safe use.]

In summary, IFRS 16 uses a contract basis to evaluate lease contracts and this results in virtually all lease contracts to be capitalized as finance leases, with a right-of-use asset and a lease liability recorded by the lessee (other than if deemed to be short-term or low $-value leases).

Lessor – Classification Basis:

The evaluation of a lease for the lessor uses a ***classification basis*** same as is done under ASPE. (For IFRS, only the Lessee evaluation is done on a contract basis). For the lessor, this means that IFRS requires that a lease be classified as a finance lease if it substantively transfers the risks and rewards of ownership from the lessor to the lessee. This is evidenced by the inclusion of a title transfer, a purchase option that is of lower than its fair value, or if the lease term is a substantial portion of the asset's economic life or present value in the lease agreement. Since these are not specific hurdle rates such as the ASPE 75%/90% rates criteria, professional judgement is required to determine if the IFRS substantive-based criteria is met.

If the lease is deemed to be a capital lease, the lessor removes the asset from its assets inventory and records a receivable amount equal to the sum of the lease payments, plus any *guaranteed or unguaranteed* residual value, or a bargain purchase option. The lessor must also record the lease as either a sale, if the fair value of the lease is greater than the cost of goods sold (a profit), or as a financing arrangement (no profit).

Lease Liability Details:

The lease liability is based on present values of estimated cash flows which are identified in IFRS as:

- fixed lease payments,

- variable lease payments that are determined by applying an index or rate,
- purchase option or renewals, if reasonably expected to be exercised by the lessee (usually considered likely if the option is set lower than the fair value at that time),
- the **estimated deficiency payable by lessee** regarding any guaranteed residual values,*
- any lease termination penalties that are deemed likely to occur.

* Note that ASPE includes the full amount of the guaranteed residual value in the lessee's present value calculation whereas IFRS includes only the **estimated deficiency portion** of the guaranteed residual that the lessor could not get from a third-party sale, that the lessee would be obligated to pay. Fundamentally, IFRS is providing a finer level of detail regarding the guaranteed residual value to the lessee's present value calculation. A lower amount for a residual value will result in a lower present value compared to ASPE. That said, the overall outcomes and treatments will not be significantly different between the two standards since both provide a final adjustment for the actual deficiency that the lessee must pay to the lessor as the guarantee.

The lease term generally covers the non-cancellable period of the lease and any extensions reasonably expected to be exercised by the lessee. The interest rate used for the present value calculation is the rate implicit in the lease if determinable, otherwise it is to be the lessee's incremental borrowing rate.

Example 3: IFRS Direct-Financing Lease

On January 1, 2022, Lyle Ltd. (lessee) entered into an agreement to lease equipment from Durage Ltd. (lessor). The lease details are below:

Non-cancellable lease term	5 years
Lease renewal option or a purchase option?	None – equipment
	reverts back to lessor
Residual value (not guaranteed by lessee)	$0
Annual lease payment due each January 1 (annuity due), which includes a maintenance fee of $3,000 paid by the lessee to the lessor	$26,190
Equipment estimated economic life	6 years
Equipment fair value on January 1, 2022	$100,000
Lessor has set the following implicit rate of return, which is known to lessee	8.0%
Lessee incremental borrowing rate	7.5%

Other information:

- Both companies' year-ends are December 31, and both follow IFRS.
- The contract is not deemed to be a low $-value.
- The equipment is a specified asset that is physically distinct. The lessee has rights to all of the capacity of the asset and the lessor has no substitution rights.
- The lessee obtains substantially all the economic benefits throughout the period of use.
- The lessee has the right to direct all of the asset's use and output decisions
- The lessor has the protective right to ensure that the asset is properly maintained and is safe to operate.
- The lessee depreciates all equipment on a straight-line basis.

Lessee Analysis

Using the contract basis, the non-cancellable lease term is greater than one year, the contract value is not a low $-value, and all of the right-of-use factors for the lessee have been met (i.e. specificity, economic benefits, and output decisions), meaning that this contract is to be capitalized as a right-of-use asset along with the corresponding lease liability.

The present value of the lease payments would be:

*

Present value calculation:

Note: IFRS states to use the lessor's implicit rate of 8%. Had the lessee followed ASPE, the lower of the two rates or 7.5% would have been used. This would have resulted in a slightly higher present value of $100,860 which exceeds the fair value of $100,000. The maximum valuation for the asset in this case would be limited to the fair value amount of $100,000 under ASPE.

Lessor Analysis

Using a classification basis, the lease substantively transfers the risks and rewards of ownership from the lessor to the lessee making this a capital lease for the lessor. This is evidenced by the asset's present value being a substantive (100%) portion of the assets' fair value.

There is no profit for the lessor which would be evidenced by the presence of an asset cost less than the fair value, so the lease will be treated as a financing lease with no cost of goods sold or sales to record.

To summarize the analyses above, the lease meets the criteria for capitalization as a right-of-use asset for the lessee, and as a financing lease for the lessor.

To summarize the accounting treatment:

- The lessee records the right-of-use asset and the corresponding lease liability based on ***the lower of*** the present value of the minimum lease payments of $100,000 and the leased asset's fair value at that time of $100,000. Any lease payment made at the beginning of the lease is netted with the present value of the lease liability when recorded. The payments made to the lessor *after the inception date* are recorded as a reduction in the lease liability. At the end of each reporting period, the asset is depreciated, and the lease liability's interest is accrued and recorded to the **lease liability account** (ASPE uses an interest payable account).
- As a financing lease, the lessor records the total lease receivable, the removal of the asset from the lessor's accounting records and the unearned interest income which will be realized over the lease term. The lease payments received are recorded as a reduction of the lease receivable. At the end of each reporting period, the interest earned for the reporting period is transferred from unearned interest income to interest income.

This example below uses the effective interest rate calculations instead of completing an amortization schedule as was shown under ASPE. Either method is acceptable, but the mathematical calculation will likely take less time.

Record the entries for the lessee: (with corresponding ASPE entries for comparative purposes)

IFRS:

ASPE:



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Note how the IFRS standard combines the first two entries recorded separately under ASPE. The net result is identical, since both entries occurred on Jan 1 and therefore can be netted together into one entry as is shown under IFRS. The lease obligation/liability is $76,810 for both ASPE and IFRS immediately after the January 1 entry which also includes the first cash payment of $23,190 net of executory costs and paid in advance. However, one other notable difference is the debit account used to record the accrued interest. For IFRS the **lease liability** account is used compared to ASPE which records the accrued interest to **interest payable**. So, what difference does this make on the statement of financial position (balance sheet)? There is no difference because total current liabilities amount is the same amount in total for both. ASPE simply splits it into two current liability accounts while IFRS does not.

Record the entries for the lessor:



*

**

Report the results, a partial statement of financial position:

Lessee – Statement of Financial Position						Lessor – Income Statement				
as at December 31, 2022						for the year				
						ended December 31, 2022				
Property, plant, and equipment										
Equipment under lease		$	100,000							
Accumulated depreciation			(20,000)							
			80,000							
Current liabilities						Other revenue				
Lease liability		$	23,190			Interest income			6,145	
						Executory costs reimbursed			3,000	
Long-term liabilities**										
Lease obligation (note X)			52,620							

*

**

Record the final entry at the end of the lease term:

At the end of the lease term, the right-of-use asset is returned to the lessor. The lessee's accounting records will show that the leased asset will now be fully depreciated and the lease liability will have a zero-balance owing.

For lessee:

For lessor:

No entry since the asset has no residual value and is likely to be disposed of as a zero value, unusable asset. A notation may be made in an asset subledger that the asset was returned and disposed of by the lessor.

Guaranteed Residual Value

If the lessee guaranteed some sort of residual value, the present value calculations would follow the same methodology as was shown under the ASPE for the example of a guaranteed residual. However, the entries recorded would follow the format and accounts shown above since the accrued interest is recorded to a different account than is used for ASPE companies (lease liability

instead of interest payable). Assuming a guaranteed residual value deficiency of $10,000 and a fair value of $100,000, below are some of the lessee calculations:

Lessor's lease payment calculation: (+/-100000, 8 I/Y, 5 N, 10000FV) = $21,612

Lessee's present value calculation: (21612 PMT/AD, 8 I/Y, 5N, 10000 FV) = $100,000

Depreciation:

Interest:

Lessor's lease receivable:

A Low Purchase Option

What if the lessor included a significantly low purchase option (PO) of $10,000, instead of a residual value? If the residual value is now estimated to be $15,000, the lessee will likely exercise the right to purchase the right-of-use asset at the end of the lease term for the lower than market PO price of $10,000. The leased asset title will now pass to the lessee due to the existence of the PO likely to be exercised. This will require that the asset be depreciated over its economic life of 6 years instead of the 5-year lease term. Note that the lessee's depreciation expense has decreased significantly due to changing to the asset's longer economic life.

Lessor's lease payment calculation: same as above, $21,612

Lessee's present value calculation: same as above, $100,000

Depreciation:

Interest: same as above, $6,271

Lessor's lease receivable: same as above, $118,060

Example 4: IFRS Sales-Type Lease

On January 1, 2021, ABC Corp. (lessee) entered into an agreement to lease a boat from XYZ Ltd. (lessor). The lease details are below:

Non-cancellable lease term	6 years
Lease bargain renewal option or a bargain purchase option	None – equipment
	reverts back to lessor
Residual value (not guaranteed by lessee)	$100,000
Annual lease payment due each January 1 (annuity due)	Lessor to determine
Equipment cost to lessor	$500,000
Equipment estimated economic life	10 years
Equipment fair value on January 1, 2021	$900,000
Lessor has set the following implicit rate of return, which is known to lessee	4%
Lessee incremental borrowing rate	5%

Other information:

- Both companies' year-ends are December 31, and both follow IFRS.
- The contract is not deemed to be a low $-value.
- The equipment is a specified asset that is physically distinct. The lessee has rights to all of the capacity of the asset and the lessor has no substitution rights.
- The lessee obtains substantially all the economic benefits throughout the period of use.

- The lessee has the right to direct all of the asset's use and output decisions.
- The lessor has the protective right to ensure that the asset is properly maintained and is safe to operate.
- The lessee depreciates all equipment on a straight-line basis.

Lessor calculation of the lease payment:

The method that the lessor uses to calculate the lease payment amount was already discussed in the ASPE section of this chapter. The calculation detail is shown below for review purposes.

Analysis and classification of the lease as an operating or capital lease:

Lessee Analysis

Using the contract basis, the non-cancellable lease term is greater than one year, the contract value is not a low $-value, and all of the right-of-use factors for the lessee have been met (i.e. specificity, economic benefits, and output decisions), meaning that this contract is to be capitalized as a right-of-use asset along with the corresponding lease liability.

Using the lessor's implicit rate (4%), below is the present value calculation.

The present value of $820,968 is the valuation amount because it does not exceed the fair value of the leased asset of $900,000.

Lessor Analysis

On a classification basis, the lease substantively transfers the risks and rewards of ownership from the lessor to the lessee making this a capital lease for the lessor. This is evidenced by the asset's present value being a substantive portion (91%) of the asset's fair value ( ).

The fair value of the lease of $900,000 exceeds the lessor's cost of $500,000, which classifies it as a manufacturing/dealer lease because a profit exists.

Record the entries for the lessee:



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Record the entries for the lessor:



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Since the residual value is *not guaranteed* by the lessee, its present value is excluded from both COGS and sales as shown below:

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Record the final entry at the end of the lease term:

At the end of the lease term, the leased asset is returned to the lessor. The lessee's accounting records will show that the right-of-use asset will now be fully depreciated, and the lease liability will have a zero-balance owing. If the residual value of $100,000 is equal to the fair value at that time, the final entries for the lessee and lessor at the end of the lease term would be:

For the lessee:



For the lessor:



If the lessor receives the full amount of the unguaranteed residual value from the marketplace, the entry would be:

For the lessor:



Comparison Between ASPE and IFRS

Comparing the IFRS 16 entries above with those from ASPE, the differences in the journal entries for a capital lease (ASPE) compared to a right-of-use lease (IFRS) are:

- The lease evaluation uses a classification basis for the lessee regarding if the risks and rewards using specific hurdle rates were transferred to the lessee (ASPE) and a contract basis for the lessee regarding if right-of-use asset exists using qualitative criteria (IFRS). For IFRS 16, this results in virtually all leases being capitalized other than low $-value or lease terms of twelve months or less. The lease evaluation for the lessor uses a classification basis for both ASPE and IFRS, so the standards are the same in this instance.
- Use of the full estimated residual value (ASPE) and the estimated deficiency portion of the residual value (IFRS) are used in determining the lessee's minimum lease payments (a present value calculation).
- Terminology differences such as "leased asset" and "lease obligation" (ASPE) compared to "right-of-use asset" and "lease liability" (IFRS)

- the account used to record the accrued interest credit entry is "interest payable" for ASPE and "lease liability" for IFRS
- the interest rate used for the lessee's minimum lease payments is to be the lower of the lessor's implicit rate if known, and the lessee's incremental borrowing rate (ASPE) compared to using the lessor's implicit rate if determinable, otherwise the lessee's incremental borrowing rate (IFRS).

Note that none of these differences above appear to significantly change the impact of a capitalized lease on the statement of financial position/balance sheet under either ASPE or IFRS, assuming that the two interest rates are not significantly different from each other.

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18.4: Sales and Leaseback Transactions

A sales and leaseback transaction occurs when an asset is sold to the buyer, and is immediately leased back from the buyer. The seller becomes the lessee, and the buyer becomes the lessor. This is common in situations where the seller/lessee needs to generate cash. They can obtain the cash they need through the sale of the asset, but, as they need to continue using it, they lease it back right away. This represents a bundled transaction (sale/lease) between two parties.

The ASPE Accounting Standard

Under ASPE, typically, gains on sale and leaseback transactions that are classified as a finance lease are to be deferred and amortized. For a finance lease, the amortization of the deferred gain/loss uses the same basis as the depreciation policy of the lessee. For example, on January 1, Langmeyer Ltd. owns an office building, which it sells to Bagel Ltd. for $20 million, which is the fair value on that date. It is immediately leased back to Langmeyer Ltd. for a 25-year term, which is equal to the office's remaining useful life. At the time of the sale, the asset had a cost of $5 million and accumulated depreciation of $4 million. The purchaser/lessor wants to obtain an 8% return on the lease, so the lease payments would be:

Since the lease term is 25 years, which is equal to the remaining useful life of the asset, it meets the criteria necessary to be classified as a finance lease for the lessee. The year-end for both companies is December 31, and both follow IFRS (IAS 17).

The first entry for this transaction will be for the sale, where the removal of the asset and its related accumulated depreciation is recorded along with a deferred gain/loss. For the buyer, it is simply a purchase of an asset for cash. The remaining entries will be for the lease agreement, as previously illustrated earlier in this chapter. The only change is that, for the lessee, there will be an additional entry for the amortization of a portion of the deferred gain.

For seller/lessee:

For buyer/lessor:



Recall that the amortization for the deferred gain used the same basis (25 years) as the depreciation policy of the company. Also, note that the realized gain of $760,000 is credited to depreciation expense as a reduction to this operating expense.

The IFRS Accounting Standard

Under IFRS, to determine the accounting treatment of a SALT and whether it is a sale, the transaction must be evaluated in terms of IFRS 15 (Revenue) requirements to see if it qualifies to be a sale. If the transaction qualifies as a sale, the seller/lessee will derecognize the carrying amount of the asset and record a right-of-use (ROU) asset on a proportionate basis as shown in the examples below. Note that if the sales price is less than the fair value of the asset, this difference is accounted for as a prepayment of lease payments and so it is recorded to the right-of-use asset (IFRS 16). If there is a gain, the gain is treated as additional financing as a financial liability to the seller/lessee with a corresponding financial asset to the buyer/lessor. If the transaction is not a sale, the treatment will follow IFRS 9, Financial Instruments, where the seller/lessee will not derecognize the asset and will record a financial liability equal to the proceeds. The buyer-lessee will not recognize the asset and will record a financial asset equal to the proceeds.

Below are three scenarios that illustrate a SALT transaction meeting the requirements for a sale (IFRS 15), with and without a gain/loss. The present value of the total payments is $6M and the payments are made at the end of each year. The buyer/lessor classified the lease as an operating lease.

	Selling price = FV	Selling price < FV	Selling price > FV
	of asset	of asset	of asset
Selling price	$10M	$9M	$12M
FV of asset	$10M	$10M	$10M
Difference	$0	($1M)	$2M
Lease term	6 years	6 years	6 years
Implicit interest rate	4.5%	4.5%	4.5%
Carrying value of asset	$8M	$8M	$8M
PV of lease*	$6M	$6M	$6M
			($4M lease &
			$2M add'l financing)
			See below
Right-of-use asset	$4.8M	$5.8M	$3.2M
valuation**			
Entry – seller/lessee:	DR.....CR	DR.....CR	DR.....CR
Cash	$10 M	$9 M	$12 M
ROU asset	$4.8 M	$5.8 M	$3.2 M
Asset (carrying value)	$8 M	$8 M	$8 M
SALT liability	$6 M	$6 M	$6 M
Gain on sale of asset	$0.8 M	$0.8 M	$1.2 M
Entry – buyer/lessor:			
ROU Asset	$10 M	$10 M	$10 M
Financial asset	$0	$1 M	$2 M
Cash	$10 M	$9 M	$12 M

* PV lease = (1163270 PMT, 4.5 I/Y, 6 N, 0 FV) = $6M

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Example 1: ROU asset	
	(there is no difference, so PV lease is for $6M)
Example 2: ROU asset	
	(PV lease is for $6M and difference of ($1M))
	is considered as a prepayment of lease payments
	and therefore included in ROU asset)
Example 3: ROU asset	

*

- A video is available on the Lyryx web site. Click Here to view the video.
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18.5: Leasing- Disclosures

As leases tend to be long-term commitments, it is important to disclose information about the leased asset, lease obligation, and leased receivables. Below is a summary of some of the main IFRS 16 disclosures. Note that ASPE disclosures are similar but more simplified.

Operating Leases:		**Finance Leases:**	
Disclosures are basically the same as		Disclosures are basically the same as	
those required for any assets, liabilities,		those required for any assets, liabilities,	
and financial instruments.		and financial instruments.	
Lessee	Lessor	Lessee	Lessor
A description of any significant leases, including contingent amounts, renewal options, purchase options, and any restrictions to company operations and activities.	Same	A description of any significant leases, including contingent amounts, renewal options, purchase options, and any restrictions to company operations and activities.	Same
Minimum lease payments within the next fiscal year, between the second and fifth future years (inclusive), and after the fifth future year. (Note: For ASPE, the aggregate lease payments for the next 5 years are to be reported.)	Same	Minimum lease payments within the next fiscal year, between the second and fifth future years (inclusive), and after the fifth future year. (Note: for ASPE, the aggregate lease payments for the next 5 years are to be reported.)	Same
		The net carrying amount of each class of leased asset.	The allowance of uncollectible amounts relating to lease receivables.
		A reconciliation between the undiscounted total future minimum lease payments and their present value at each reporting date. This will report how much interest cost is included in the minimum lease payments.	A reconciliation between the gross lease receivable and their present value at each reporting date. This will report how much interest revenue is included in the minimum lease payments.
		Lease obligation is to be separated into current and long-term liability portions.	Lease receivable is to be separated into current and long-term portions.

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18.6: IFRS/ASPE Key Differences

Item	ASPE	IFRS 16
Lessee – capitalization criteria	The criteria are much more prescriptive using numerical thresholds. Refer to details in section 17.2. A lease can be classified as an operating or a capital lease for the lessee.	Evaluation uses a contract basis and criteria based on if right-of-use exists. More professional judgment is needed since the criteria are qualitative and do not include numeric thresholds. Virutally all leases are now capital leases except if it is deemed a low $-value or a duration of twelve months or less.
Lessor – capitalization criteria	The same criteria are used as for the lessee, but two more criteria must be met to be capitalized by the lessor. Any capitalized leases are further broken down into either a sales-type lease or a direct-financing lease, depending on whether a profit exists.	The same as ASPE except capitalized leases for the lessor are classified as a finance lease, with manufacturer/dealer leases being further distinguished from other finance leases.
Lessee's interest rate	Use the lower of the lessee's incremental borrowing rate or the lessor's implicit rate of return.	Use the implicit rate, if known, otherwise use the incremental borrowing rate.
Disclosure	Similar to the disclosures required for other assets, liabilities, or financial instruments.	Additional disclosures are required as noted above under disclosures.

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18.7: Chapter Summary

LO 1: Describe leases and their role in accounting and business.

A lease is one method of financing the use of an asset. For example, when businesses want to update their equipment or expand their operations, they might lease rather than buy. A lease will provide the company with a temporary right to use an asset, over a specified period of time, in exchange for some other consideration, usually cash. Leases can be classified as either an operating lease or capitalized as a capital/finance lease, depending on whether the transaction meets the ASPE or IFRS 16 criteria, which look at the economic substance of a lease rather than its legal form. An operating lease is recorded to rental expense for the lessee and recorded to rental income for the lessor. A capitalized lease is recorded to an asset and a related obligation for the lessee, and to lease receivable as either a sale or as a financing agreement like an instalment loan for the lessor.

LO 2: Describe the criteria used for ASPE and IFRS (IAS 17) to classify a lease as a capital/finance lease.

While ASPE criteria are more prescriptive and contain specific numeric thresholds, IFRS 16 criteria are more qualitative and require more professional judgment. For ASPE, three criteria are required for capitalization classification for the lessee to occur. If any one of the following are met, classification as a capital lease is required. First, if legal ownership passes, or substantively passes, through the existence of a bargain purchase option or bargain renewal option. Second, if the lease term is at least 75% of the asset's estimated economic or useful life. Third, if the present value of the minimum lease payments is equal to 90% or more of the fair value of the asset at that time. In the case of the lessor, the same three criteria are considered, plus two additional criteria involving collectability of lease payments and no uncertainties regarding lessor costs. If any one of the three criteria and both of the additional uncertainty and collectability criteria are met, the lessor is required to classify the lease as a capital lease. Additional analysis is required to determine if the capital lease for the lessor is a sales-type lease, where there is a profit, or a direct-financing lease for banks or finance companies.

Under IFRS 16, the lessee analysis uses a contract basis and qualitative definitions to determine if a right-of-use asset and lease liability exists. The lessor evaluation follows a classification "risks and rewards" basis the same as ASPE, but with more qualitative criteria that require professional judgement. The key criteria to consider if a right-of-use asset is to be capitalized along with the obligation for lease payments include that a specified asset exists that is physically distinct. Also, that the lessee has rights to substantially all of the capacity of that asset and its benefits and its use decision, and that the lessor has no substantive substitution rights. In summary, the impact of IFRS 16 is that virtually all lease contracts to be capitalized as finance leases, with a right-of-use asset and a lease liability recorded by the lessee (other than if deemed to be short-term or low $-value leases). If the lessor is a dealer or manufacturer, the entries will include sales and cost of goods sold, otherwise the lease will be treated as a financing lease if the lessor is a bank or financing company.

If the lease does not meet the criteria for capitalization, it is treated as an operating lease with lease payments recorded as rent expense for the lessee and rent revenue for the lessor.

LO 3: Prepare the accounting entries of a capitalized lease for both the lessee and lessor.

The accounting treatment for capitalized leases follows certain steps. These steps dictate the types and timing of the entries throughout the lease term for both the lessee and lessor. If the lease is capitalized under either ASPE or IFRS, the lessee records a leased asset and a related lease obligation, including lease payments, depreciation, and accrued interest on the debt. The lessor removes the asset from their inventory and records either a sale or a financing lease. Additionally, lease payments reduce the amount of the lessor's lease receivable and interest is earned over the lease term. The effective interest method is applied to calculate the interest component of the lease obligation. Special items, such as economic life versus the lease term, and the lessor's implicit interest rate versus the lessee's incremental borrowing rate, can affect some of the lessee and lessor accounting entries. This chapter presents several examples from the perspectives of the lessee and the lessor, including unguaranteed and guaranteed residual values, a bargain purchase option, and a finance lease.

Comparing the IFRS 16 with ASPE, the differences in the journal entries for a capital lease (ASPE) compared to a right-of-use lease (IFRS) are that ASPE uses the classification basis to evaluate if the risks and rewards using specific hurdle rates has been met to require capitalization, and IFRS 16 uses a contract basis for the lessee regarding if right-of-use asset exists using qualitative criteria to capitalize. For ASPE, the results can be a mix of both operating and capital leases whereas for IFRS 16, it results in

virtually all leases being capitalized other than low $-value or lease terms of twelve months or less. Another difference involves one of the amounts used in calculating the lessee's present value of the minimum lease payments. ASPE uses of the full estimated residual value, and IFRS uses only the estimated deficiency portion of the residual value that the lessee must pay to the lessor. Some terminology is different such as "leased asset" and "lease obligation" for ASPE compared to a "right-of-use asset" and "lease liability" for IFRS. Accounts used to record the accrued interest credit entry for ASPE is the "interest payable" and for IFRS it is the "lease liability". These differences are minor in terms of their impact on the accounting treatment. The different with the greatest potential impact would be the interest rate used for the minimum lease payments as the lower of the lessor's implicit rate if known, and the lessee's incremental borrowing rate for ASPE compared to using the lessor's implicit rate if determinable, otherwise the lessee's incremental borrowing rate (IFRS). This could result in two significantly different interest rates used to calculate the lessee's present value of minimum lease payments.

LO 4: Prepare the accounting entries of a capitalized sale and leaseback transaction.

Another form of financing involves a sale and a leaseback. This is when a seller sells an asset and immediately leases it back from the buyer. The seller becomes the lessee and the buyer becomes the lessor. Since this transaction is in reality a bundled sale/lease transaction, care must be taken to ensure that both parties do not try to manipulate the numbers unrealistically. For this reason, capitalized sale and leaseback transactions under ASPE typically defer and amortize the gains/losses, usually on the same basis as the depreciation policy. IFRS 16 approaches this type of transaction quite differently. First, the transaction must determine if it meets the definition of a sale, which is identified in IFRS 15 (Revenue). If it is deemed a sale, the seller/lessee will derecognize the asset sold, and record a right-of-use (ROU) asset on a proportionate basis depending on how much of the asset was leased back (i.e. a building is sold but certain floors are leased back). The transaction can also result in scenarios where the sales price is less than, equal to, or greater than the fair value of the asset, each of which requires a slightly different accounting treatment. If the transaction is not a sale, the treatment will follow IFRS 9, Financial Instruments, where the seller/lessee will not derecognize the asset and will record a financial liability and the buyer-lessee will record a corresponding financial asset.

LO 5: Explain how leases are disclosed in the financial statements.

As leases are usually long-term commitments, disclosures must be in-depth enough to provide shareholders and creditors with adequate information to assess liquidity and solvency. The disclosures for ASPE and IFRS are similar, although IFRS 16 also requires additional disclosures for various classes of leases and reconciliations that assist financial statement readers to assess the amount of interest cost included in the minimum lease payments. As is the case with other long-term financial instruments, both the lease obligation and the lease receivable are separated into current and long-term balances in the balance sheet/SFP.

LO 6: Explain the similarities and differences between ASPE and IFRS 16

ASPE capitalization criteria contain numeric thresholds, making it much more prescriptive than IFRS 16. As IFRS 16 does not have the numeric thresholds, professional judgment is needed to determine if capitalization is required. For the lessor, both ASPE and IFRS have similar accounting treatments for either a lease that includes a profit element (sales, cost of goods sold, and an interest component), or as a finance lease (an interest component only). In some cases, the interest rate used when calculating the present value of the minimum lease payments can differ between ASPE and IFRS 16. While the disclosures for both standards are similar, IFRS 16 does require some additional disclosures to be made.

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18.8: References

Landscape Managing Network (LMN). (2010, November 10). *The great equipment debate part I: Leasing vs. buying*. Retrieved from http://www.golmn.com/the-great-equipment-debate-part-i-leasing-vs-buying/

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18.9: Exercises

18.1

Below is information about a lease agreement signed by Oakland Ltd. (lessee) and Hartford Corp. (lessor). Both follow ASPE.

Type of lease	non-cancellable
Lease date	July 1, 2021
Annual lease payment amount in advance	$25,100
Bargain purchase option at the end of the lease term	$3,000
Lease term	6 years
Estimated economic life of the leased asset	10 years
Residual value after 10 years	$1,500
Lessor's cost	$90,000
Leased asset fair value, July 1, 2021	$130,000
Executory costs	paid directly by lessee
Lessee's incremental borrowing rate	8%
Lessor's implicit rate (known to lessee)	7%
Collectability of lease payments	no uncertainties
Costs not yet incurred by the lessor	no uncertainties
Year-end for lessee and lessor	December 31

Required:

a. Analyze and classify the lease for both the lessee and lessor using data to support the classification.
b. Calculate the gross and net investment amount as at July 1, 2021, for the lessor.
c. Prepare a lease amortization schedule for the lessee and lessor over the term of the lease.
d. Record the journal entries for 2021 and 2022 for the lessee.
e. Record the journal entries for 2021 and 2022 for the lessor.
f. Explain the differences, if any, to both the lessee and lessor if they followed IFRS (IAS 17).
g. How might the depreciation differ had the lease included a guaranteed residual instead of a bargain purchase option?

18.2

On January 1, 2021, Mercy Ltd. (lessee) signed an 8-year, non-cancellable lease agreement to lease a highly specialized landscaping machine from Bergess Corp. (lessor). The agreement is non-renewable and requires a cash payment of $46,754 each January 1, commencing in 2021. The yearly cash payment includes $2,000 of executory costs related to insurance on the machine. At the end of the lease term, the machine reverts to the lessor. The machine has an estimated economic life of 10 years and an unguaranteed residual value of $10,000. The fair value of the machine on January 1, 2021, was $270,000. Mercy Ltd. follows IFRS (IAS 17) and its year-end is December 31. Mercy Ltd. also uses the straight-line method for depreciation, and its incremental borrowing rate is 9% per year. Bergess Corp.'s rate, implicit in the lease, is not known to Mercy Ltd.

Required:

a. Analyze and classify the lease for the lessee and the lessor.
b. Prepare an amortization schedule for the term of the lease to be used by Mercy Ltd.
c. Prepare all related journal entries for 2021 and 2022 for Mercy Ltd.
d. Prepare Mercy Ltd.'s balance sheet and required disclosures for the lease for the fiscal year ending December 31, 2022.

18.3

On January 1, 2021, Cappic Ltd. signed an 8-year, non-cancellable lease agreement to lease a highly specialized landscaping machine from Jedii Corp. The agreement is non-renewable and requires the payment of $50,397 every January 1, starting in 2021. The yearly rental payment includes $2,500 of executory costs related to a maintenance contract on the machine, and at the end of the lease term, the machine reverts to the lessor. The machine has an estimated economic life of 12 years, with an unguaranteed residual value of $22,000. Cappic Ltd. uses the straight-line method for depreciation, and the fair value of the machine on January 1, 2021, was $300,000. Cappic Ltd. follows IFRS (IAS 17) and its year-end is June 30. Additionally, its incremental borrowing rate is 8% per year. Jedii Corp.'s implicit rate is 9%, which is known to Cappic Ltd.

Required: Prepare all related journal entries for 2021 and 2022 for the lessee.

18.4

On January 1, 2021, Oberton Ltd. entered into an agreement to lease a truck from Black Ltd. The details of the agreement are as follows:

Carrying value of asset for Black Ltd.		$	18,000
Fair value of truck		$	18,000
Economic life of truck			6 years
Lease term			4 year
Rental payments, annually, starting January 1, 2021		$	4,333
Executory costs included in each rental payment for insurance		$	20
Incremental borrowing rate for Oberton Ltd.			6%
Lessor's effective interest rate			8%
Guaranteed residual value		$	3,500

Additional information:

1. There are no uncertainties regarding lease payments or additional un-reimbursable costs.
2. At the end of the lease term, Black Ltd. sold the truck to a third party for $3,200, which was the truck's fair value on January 1, 2025. Oberton Ltd. paid Black Ltd. the difference between the guaranteed residual value of $3,500 and the proceeds obtained on the resale.
3. Oberton Ltd. knows the interest rate that is implicit in the lease.
4. Oberton Ltd. knows the amount of executory costs included in the minimum lease payments.
5. Oberton Ltd. uses straight-line depreciation for its assets.
6. Both Oberton Ltd. and Black Ltd. use IFRS (IAS 17) and their year-ends are both December 31.

Required:

a. Discuss the nature of this lease for both Oberton Ltd. (the lessee) and Black Ltd. (the lessor).
b. Prove the effective interest rate of 8% using a financial calculator.
c. Prepare a lease amortization schedule for the full term of the lease.
d. Prepare all related journal entries for Oberton Ltd. over the period from January 1, 2021, to January 1, 2022, including any year-end adjusting journal entries. Assume that Oberton Ltd. does not use reversing entries.

e. Prepare Oberton Ltd.'s partial classified statement of financial position at December 31, 2021, along with relevant note disclosures and the income statement for the fiscal year ending December 31, 2021.
f. Prepare the journal entry for Oberton Ltd.'s payment on January 1, 2025, to Black Ltd. to settle the guaranteed residual value deficiency. Assume that the year-end depreciation has been already recorded but that no accruals for interest have been recorded as yet during 2024.
g. Prepare all relevant journal entries that Black Ltd. would record from January 1 to December 31, 2021.
h. Prepare a partial income statement for Black Ltd. for the year ended December 31, 2021.

18.5

Helmac Ltd. manufactures equipment and leased it to Tolmin Ltd. for a period of ten years beginning on January 1, 2021. The equipment has an estimated economic life of twelve years. The equipment's normal selling price is $299,122, and its unguaranteed residual value at the end of the lease term is estimated to be $25,000. Tolmin Ltd. will pay annual payments of $35,000 at the beginning of each year, as well as all maintenance and insurance costs over the lease term. The cost to manufacture the equipment was $100,000. Helmac Ltd. also incurred $10,000 in closing lease costs. Helmac Ltd. has determined that there is no uncertainty with regard to the collectability of the lease payments or additional costs. The lessee's incremental borrowing rate is 6% and the lessor's effective interest rate is 5%, which is known to the lessee. Both Helmac Ltd. and Tolmin Ltd. follow ASPE.

Required:

a. Discuss the nature of this lease in relation to the lessor.
b. Prepare all of the lessor's journal entries for the first year of the lease, assuming the lessor's fiscal year-end is five months into the lease. Reversing entries are not used.
c. How would the initial entry to record the lease change if $25,000 residual value was guaranteed by the lessee?
d. Assume now that the lease term is for 12 years. How much would Helmac Ltd. charge the lessee annually for a 12-year lease, if the sales price and interest rate remains unchanged, but the residual value was $40,000 and unguaranteed by the lessee?

18.6

On January 1, 2021, Kimble Ltd. sells specialty equipment to Quick Finance Corp. for $432,000 and immediately leases the equipment back from them. Other relevant information is as follows:

1. The equipment has a fair value of $432,000 on January 1, 2021, and an estimated economic life of 10 years, with no residual value.
2. The equipment's carrying value on Kimble Ltd.'s books on January 1, 2021, is $385,000.
3. The term of the non-cancellable lease is 10 years and the title (legal title for ownership) will transfer to Kimble Ltd. at the end of the lease due to its specialty.
4. The lease agreement requires equal payments of $61,507 at the end of each year.
5. The incremental borrowing rate of Kimble Ltd. is 8%. The effective interest rate for Quick Finance Corp. is set to return 7% and is known by Kimble Ltd.
6. Kimble Ltd. pays executory costs of $7,200 per year directly to appropriate third parties.
7. Both Kimble Ltd. and Quick Finance Corp. use ASPE. No uncertainties exist regarding future unrecoverable costs and collectability is reasonably certain.

Required:

a. Demonstrate how this lease meets the criteria for classification as a capitalized lease.
b. Prepare the journal entries for both the lessee and the lessor for 2021 to reflect the sale and leaseback agreement.

1. CPA Canada Handbook, Part II, Section 3065

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CHAPTER OVERVIEW

Chapter 19: Shareholders' Equity

Google This!

On April 2, 2014, Google Inc. paid its shareholders a share dividend, an event that was later described as the "1,998 for 1,000 stock split." For every 1,000 shares that were held prior to the split, an additional 998 shares were issued. This essentially doubled the number of outstanding shares and caused the share price to fall to approximately half of its pre-split price, which had been hovering above $1,000 per share. This technique is called a stock split and is commonly used by companies to lower a share price when it starts rising to levels that are unaffordable for the average investor.

Although Google's share price certainly justified a stock split, the unique structure of this split suggests other motivations as well. Prior to the split, Google Inc. had two classes of shares: Class A, which carried one vote each and were publicly traded, and Class B, which carried ten votes each and were not publicly traded (held mostly by the company's founders, Larry Page and Sergey Brin). Because of the super-voting rights of their Class B shares, the founders were able to maintain control of the company. However, as many Class A shares were issued over the years to acquire new businesses or to reward employee performance, the founders' share of the ownership became diluted.

When the split occurred, in 2014, Google took the unusual step of creating a new class of shares, Class C, to distribute to existing Class A shareholders. However, the new Class C shares did not carry any voting rights. The Class A shareholders immediately objected to this arrangement, as they felt that these new shares would not be as valuable as the existing shares because they lacked voting rights. The company argued that, because the founders already controlled the majority of the shares, the voting rights of the Class A shares were of no significant value. In response, the shareholders launched a class action lawsuit, which was eventually settled when the company agreed to pay compensation to the existing Class A shareholders if, after one year, the Class C shares were trading at a discount of more than 1%, as compared to the Class A shares. On April 3, 2015, the Class A shares were trading at $542.08 per share and the Class C shares were trading at $535.76, a difference of 1.2%. Apparently, the market did attach some value to minority voting rights. Google agreed to pay an "adjustment payment" of $522 million to Class A shareholders in May 2015.

As demonstrated in this example, the rights of shareholders can create complicated legal issues. The right to vote and the right to receive dividends are the two essential elements that shareholders have in order to protect their investment. Proper and detailed disclosure in the shareholders' equity section of the balance sheet can help shareholders better understand their relationship with the company and the risks that they face.

(Sources: Alphabet Investor Relations, 2015; Liedtke, 2014)

Learning Objectives

After completing this chapter, you should be able to:

- Describe the different forms of equity and identify the key features that are important for accounting purposes.
- Explain and apply accounting standards for different types of share issues.
- Explain and apply accounting standards for different situations that can occur when shares are reacquired.
- Describe the accounting treatments for different types of dividends and calculate divided allocations when preferred shares exist.
- Describe the presentation and disclosure requirements for shareholders' equity accounts.
- Identify differences in the accounting treatment of shareholders' equity between IFRS and ASPE.

Introduction

The *Conceptual Framework* provides a deceptively simple definition for equity: "the residual interest in the assets of the entity after deducting all its liabilities" (CPA Canada, 2016, Part I, The Conceptual Framework for Financial Reporting, 4.4 (c)). This definition confirms the most elementary principle in accounting, which is embodied in the accounting equation: Assets = Liabilities

+ Equity. This apparent conceptual simplicity is further confirmed by the fact that IFRS does not actually contain a separate handbook section devoted to shareholders' equity. However, despite this lack of structured guidance, we should not define equity as a simple concept that doesn't require much attention. On the contrary, there are a number of ways in which the accounting, presentation, and disclosure of equity transactions can be quite complex. Although equity is the residual interest of the business's owners, it is not simply a plug figure used to balance the accounting equation. In this chapter, we will discuss some of the complexities in accounting for equity transactions and we will look at the presentation and disclosure requirements for what can be legally complicated instruments.

Chapter Organization



19.1: What is Equity?
19.2: Issuing Shares
19.3: Reacquiring Shares
19.4: Dividends
19.5: Presentation and Disclosure
19.6: IFRS/ASPE Key Differences
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19.1: What is Equity?

Despite the simple definition initially provided, the *Conceptual Framework* does expand on the concept of equity by explaining that funds contributed by shareholders, retained earnings, and other reserves may require separate disclosures. The reasons given for a more detailed disclosure include the objective of providing information about legal restrictions on the distribution of equity that may be useful to investors for decision-making purposes, and the need to disclose the different legal rights that may attach to the various types of equity interests. The *Conceptual Framework* also notes that although, by definition, equity is affected by the measurement of assets and liabilities, the amount of equity reported would only coincidentally be equal to the current market value of a company. This is an important point, as it highlights one of the limitations of financial reporting: that financial statements by themselves cannot tell an investor what a company is worth.

The components of equity will vary from business to business and will be affected by the type of legal structure adopted by the business. This chapter will focus on the accounting used in the most common type of business organization – the corporation. Accounting and disclosure for other types of entities, such as proprietorships and partnerships, will be different. However, the same basic principles apply to those types of entities as well.

Let's now look at the various components of equity, using the classification from the *Conceptual Framework*: funds contributed by shareholders, retained earnings, and reserves.

Funds Contributed by Shareholders

The funds contributed by shareholders are often the initial capital used to start a business. These funds are often referred to as contributed capital. In a corporate structure, contributed capital will take the form of shares, which can be classified into several different types. Shares, themselves, are legal instruments that provide certain rights to the holder and indicate a residual interest in the corporation's assets. When a company is created, its incorporating documents will specify the maximum number of shares that can be issued. In some cases, this amount, referred to as authorized shares, may be specified as unlimited, meaning the company can issue as many shares as it wants. From an accounting perspective, the number of authorized shares is not relevant but the number of issued shares is. Issued shares are shares that have been issued to shareholders, usually in exchange for money, services, or other assets. Sometimes, a company may repurchase its own shares and keep them in *treasury*, in which case the number of issued shares will be greater than the number of outstanding shares (those shares held by parties outside of the company). In some jurisdictions, shares can be issued with a par value. This is the stated value of the share and will be directly indicated on the share certificate. Where par value shares exist, the actual issue price may differ from the par value. Amounts received by the corporation in excess of the par value represent another form of contributed capital. This amount will be reported separately from the par value of the shares and is often described as either contributed surplus or share premium. Note that many jurisdictions do not allow par value shares, meaning the issue price would simply be reported as the share capital amount. Shares can be stratified into different classes, based on the different rights and characteristics. We will discuss some of these different characteristics below.

Common Shares

Common shares, also referred to as ordinary shares, represent the final residual interest in a company's assets after all other claims, including other equity interests, have been satisfied. In some companies, these are the only types of shares issued. These shares represent the greatest level of risk to an investor should the company fail, as all other claims against the company's assets would need to be paid first. On the other hand, these shares also represent potentially the greatest rewards, as all the profits not otherwise allocated to debt and equity holders would belong to the common shareholders. All companies must have at least one class of common shares, although they are not always described this way. If a company issues more than one class of shares, and the other classes have additional rights over the common shares, then those classes are not common shares. Rather, they would be described as preferred shares.

Preferred Shares

Preferred shares, also known as preference shares, have special rights and privileges that give them priority over the common shares. These special privileges are often included to make the shares more attractive to investors. As well, the special rights can allow for complex ownership structures where certain groups or individuals want to maintain a degree of control. Because the preferred shares have special rights over the common shares, they are not considered a residual interest. In the event of a business's

liquidation, the preferred shareholders would rank ahead of the common shareholders in the priority of payment, but they would still be subordinated to the debt holders.

Preferred shares have many different features that can be combined in multiple configurations to provide many classes of shares for investors to choose from. However, to gain these special features, preferred shareholders often give up certain rights as well, most commonly, the right to vote on the company's management. In many corporate structures, only the common shareholders have the right to vote for the board of directors, even though there may be several classes of shares. It is also important to note that the classes of shares may not always be described as common or preferred in the incorporation documents. The accountant must always be careful to closely examine the economic substance of the share features, and not just rely on the descriptions used by the company.

Let's now look at some of the features of preferred shares.

- **Fixed Dividend**: Preferred shares often have a fixed dividend amount, usually expressed as a numerical amount per share or sometimes as a percentage of the par value of the share. For example, a preferred share could be entitled to a dividend of 5% of the par value, or $5 per share. These dividends would be equivalent if the share were issued at, or had a par value of, $100. Although the dividend amount is stated, this does not guarantee that the preferred shareholder will receive the dividend in any given year. Dividends must always be declared by the board of directors, and the directors have the discretion not to pay a dividend. However, when dividends are declared the holders of the preferred shares must be paid their stated dividends first before any distributions can be made to the common shareholders.
- **Cumulative Dividend**: If the directors do not declare a dividend in a current year, the holders of cumulative preferred shares would be entitled to payment of the dividend in a future year. For this type of share, undeclared dividends will accumulate at the stated rate for each year and must all be paid before any dividends can be paid to the common shareholders. These unpaid dividends do not represent a liability until the directors declare a dividend. Preferred shares can also specify a non-cumulative dividend, which means any undeclared dividends in a given year are simply lost and are not required to be paid in future years.
- **Participating Dividend**: When a preferred share is described as participating, it retains the right to receive not only the stated amount of dividends, but also additional dividends based on certain criteria. A typical participation calculation would involve first determining the fixed dividend on the preferred shares, and then allocating a similar proportion to the common shares. Then, additional dividends beyond these two amounts would be shared between the preferred and common shares on a pro-rata basis. There are other, more complex, ways in which participation can be calculated. The specific features of the preferred share would need to be examined to determine the method of calculation. The participation feature can make a preferred share more attractive to investors, as it provides the stability of the fixed dividend, plus the ability to receive further dividends if the company is successful.
- **Redemption**: A preferred share may be described as being redeemable. This means the company has the right to *call* the shares and repurchase them at a specified price during a specified time period. When the shares are redeemed, any dividends in arrears must be paid.
- **Retraction**: This feature is attractive to shareholders, as it allows them the right to require the company to repurchase the shares at a set price. Usually, time limits are set for the retraction period.
- **Convertibility**: Some preferred shares retain the right to be converted into common shares. The holder may choose to do this if the company has been successful and if common dividends exceed the amount that can be earned by the fixed, preferred dividend. The amount of common shares that can be obtained on conversion will be specified as a ratio, such as two common shares for each preferred share held.

Any or all of these features can be attached to classes of preferred shares. Many companies will report multiple share classes, each with different features. In some cases, the features included in a preferred share may suggest that its economic substance is more akin to debt rather than equity. These types of shares should be classified as liabilities, and their dividends would be classified as financing costs on the income statement. Shares with these features are discussed further in Chapter 14: Complex Financial Instruments.

Retained Earnings

The retained earnings account is a separate category of equity that represents the cumulative amount of profit earned by the company since its inception, less the cumulative amount of dividends declared. Sometimes, either as a management choice or as a

legal requirement, certain portions of the retained earnings are set aside or appropriated. Appropriations of retained earnings are created to ensure that dividends are not paid from these balances, and these appropriations need to be reported separately. When the retained earnings account falls into a negative (debit) balance, it is usually referred to as a deficit, or retained losses. Retained earnings are sometimes subject to other types of accounting adjustments, such as accounting policy changes and error corrections, which are discussed in other chapters.

Reserves

The term reserves can refer to a number of different accounts. The previously noted appropriations of retained earnings are normally described as reserves. Another type of reserve is accumulated other comprehensive income (AOCI). As discussed in other chapters, comprehensive income results from recognition of income or expense items that are not included in the calculation of net income. There are only a few items that fall into this category, the most common of which are gains resulting from the application of the revaluation method for property, plant, and equipment, and intangibles; re-measurements of defined benefit plans; and gains resulting from remeasurement of available-for-sale financial instruments. These transactions create reserves that must be reported separately on the balance sheet. However, they may not always be described as accumulated other comprehensive income. For example, the term revaluation surplus is often used instead. Regardless of the name, the reserves must clearly identify the source of the surplus, and separate reserves are required for each type of item.

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19.2: Issuing Shares

When a company is first incorporated, it will be authorized to issue a certain number of shares. This authorization does not, in and of itself, create any accounting transaction that needs to be recorded. However, after the shares are authorized they can be issued, which creates an accounting transaction. We will look at several examples of different types of share issuances.

Shares Issued for Cash

This is the simplest scenario: shares will be issued to the holder in exchange for a cash payment. For example, if 10,000 common shares are issued at a price of $10 each, the journal entry would be:



Note: Each class of shares should be recorded in a different account, as the disclosure of the amounts of different classes of shares is required. Also, when brokerage houses, agents, lawyers, and other professionals are involved in issuing the shares, any fees or commissions charged by these parties should be directly deducted from the share capital amount.

Par Value Shares Issued for Cash

In the example above, the net amount of cash received simply becomes the stated capital amount of the shares. In some jurisdictions, shares are authorized with a par value, which is a value that will be directly stated on the share certificate. However, as market conditions will dictate the actual issue price of the shares, it is possible that an amount greater than the par value will be received when the shares are issued. The excess amount over the par value still represents contributed capital, but it must be recorded separately. If, for example, 5,000 shares with a par value of $2 per share are issued for $8, the journal entry would be:



The contributed surplus amount will be reported as part of the contributed capital on the balance sheet. This account is sometimes described as *share premium* or *additional paid-in capital*.

Subscribed Shares

Sometimes a company may offer shares on a subscription basis, allowing the holder to pay for the shares in a series of payments. The accounting for these types of transactions will depend on local legislation, the terms of the subscription contract, and corporate policy. We will look at a few different examples of these types of transactions.

Scenario 1

A company offers to issue its shares in blocks of 20 at a price $60 per share. The contract requires a 25% down payment with the remaining 75% payable in six months, and 100 individuals accept the offer. Local legislation does not allow shares to be issued until they are fully paid. The following journal entries are required:



The share subscription receivable conceptually does not represent a receivable in the conventional sense, as it represents a capital and not an income transaction. As such, the most appropriate treatment would be to show it as a contra-equity account. However, some argue that because it does represent a future benefit to the company, it should be reported as an asset. Both presentations can be found in practice. The common shares subscribed account should be shown as part of the contributed capital section, but it should be segregated from the issued share capital.

In six months' time, the following journal entry is required:



Note: If a dividend is declared between the subscription date and the final payment date, the treatment of that dividend will depend on local legislation. Although it is likely that the shares will not be eligible for dividends, as they have not yet been issued, some jurisdictions allow the distribution of a pro-rata dividend based on the amount of cash received to date. In our example, the subscribers would be eligible for 25% of the regular dividend amount declared. Similarly, if a shareholders' meeting is held during this interim period, the subscribers may be eligible for a pro-rata share of votes at the meeting.

Scenario 2

Let's assume the same set of facts as Scenario 1, except that 10 of the subscribers default on their final payments. At the time of the initial subscription, the journal entry will be identical to the one used in Scenario 1. However, at the time of final payment, the journal entry will depend on local legislation, the subscription contract, and corporate policy. If we assume that legislation requires a refund of the initial deposit to the defaulting subscribers, then the journal entry would look like this:



Scenario 3

Let's assume the same set of facts as Scenario 2, except that local legislation allows shares to be issued to defaulting subscribers pro-rata, based on the amounts of their deposits. The journal entry on issuance would look like this:



In some cases, the company may charge a fee to the defaulting subscribers, which would be allocated to contributed surplus, rather than to common share capital.

Scenario 4

Let's assume the same set of facts as Scenario 2, except that local legislation allows the company to keep the defaulting subscribers' deposits. In this case, the following journal entry is recorded at issuance:



Shares Issued for Goods or Services

Sometimes a company may issue shares in exchange for assets other than cash, or in exchange for services provided. These situations may occur when a company is in the start-up phase of its life cycle and wishes to preserve scarce cash resources. In these cases, the shares should be recorded at the fair value of the asset acquired or service received. Note that this treatment is different than the treatment of non-monetary exchanges of assets, where the fair value of the asset given up is normally used as the transaction amount. This difference results because fair values of assets or services are usually more reliable than fair values of

shares. In the rare circumstance that the fair values of the assets or services cannot be determined, the fair value of the shares issued should then be used. This value is obviously easier to determine for a publicly traded company. In all cases, non-monetary exchanges for shares will involve the exercise of good judgment on the part of the accountant.

A company may also issue its shares in exchange for shares of another company. This type of business combination is an advanced financial accounting concept that is not covered in this text.

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19.3: Reacquiring Shares

Companies will sometimes buy back their own shares, often done to try to stabilize their share price or improve certain financial ratios, such as earnings per share. A share may also be repurchased as a way to return excess cash to shareholders without having to pay a dividend. Additionally, there may also be certain strategic benefits in repurchasing shares. Whatever the reason, the result is the same: the shares are no longer outstanding. After repurchase, the shares may continue to be held by the company as issued shares, which are referred to as treasury shares, or they may be cancelled. If they are held as treasury shares, they may be resold at a later date to new shareholders. However, if the shares are cancelled, then they must be completely removed from the accounting records. Note that some jurisdictions do not allow treasury shares, meaning that any repurchased shares must be immediately cancelled. We will examine the re-acquisition of shares for both cancellation and non-cancellation situations below.

Shares Repurchased and Cancelled

The IFRS does not provide any specific guidance on how to account for the repurchase of shares. However, ASPE does provide a set of steps to apply when shares are either repurchased or cancelled. These procedures contemplate two possible situations:

a. The shares' acquisition cost is greater than, or equal to, the assigned value.

   In this situation, the acquisition cost is allocated in the following sequence:

   - First to share capital in an amount equal to the par, stated, or assigned value
   - Any excess to contributed surplus, to the extent that the balance of contributed surplus was created by a previous cancellation of the same class of shares
   - Any further excess to contributed surplus in an amount equal to the pro-rata share of the contributed surplus that arose from transactions, other than those above, in the same class of shares (for example, a share premium from a previous issue of par value shares)
   - Any remaining excess to retained earnings.

b. The shares acquisition cost is less than, or equal to, the assigned value.

   In this situation, the acquisition cost is allocated in the following sequence:

   - First to share capital in an amount equal to the par, stated, or assigned value
   - Any excess to contributed surplus (CPA Canada, 2016, Accounting, ASPE 3240.11 and 3240.13).

   In part (b), the balance is included as an increase to contributed surplus because it wouldn't be appropriate to report income from a share capital transaction. Also, note that where the shares are not par value shares, the assigned value indicated above is calculated as the weighted average cost of the shares at the transaction date.

The following illustration demonstrates the above rules:

On January 1, 2021, a company had 100,000, no-par value common shares outstanding that were issued for total proceeds of $1,060,000. There was no contributed surplus associated with these shares on that date. On March 1, 2021, the company repurchased and cancelled 8,000 of these shares at a cost of $8 per share. The journal entry would be:



Note: The common shares are eliminated at their average cost.



The contributed surplus is calculated as 

On October 1, 2021, the company repurchased and cancelled a further 11,000 shares at a cost of $14 per share. The journal entry would be:



The common shares are again eliminated at their new average cost: . The previous contributed surplus is fully utilized, with an additional excess amount being charged to retained earnings.

In some jurisdictions, such as the United Kingdom, there may be additional legal restrictions that influence the accounting for share repurchases and cancellations. For example, on a share repurchase a company may be required to reallocate part of the retained earnings balance to a capital redemption reserve. This is done to provide a level of protection to the company's creditors, as the capital redemption reserve is generally not available for use in subsequent dividend payments.

Shares Repurchased and Not Cancelled

When a company repurchases its own shares, but doesn't cancel them, the returned shares are referred to as *treasury shares*. These shares are essentially held by the company to be issued at a later date. ASPE indicates a preference for what is known as the single-transaction method, which considers the repurchase, and subsequent re-issuance of the shares, as a single transaction. In this case, treasury shares held at the balance sheet date that have not yet been re-issued or cancelled are reported as a deduction from the total shareholders' equity. They cannot be considered an asset as the company is merely holding shares of itself. When the treasury shares are first acquired, the journal entry would simply require a debit to the treasury shares account and a credit to cash. If the shares are subsequently re-issued, then the treasury shares account will be credited and cash will be debited. Any difference will be allocated to contributed surplus or retained earnings in a process that is essentially the inverse of the cancellation journal entries shown previously. If the shares are subsequently cancelled, rather than being reissued, then cancellation procedures outlined previously are followed.

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19.4: Dividends

Cash Dividends

For investors, receiving dividends represents one of the essential motivations for holding shares. Although many established companies may have a policy of paying regular and predictable dividends, shareholders understand that there is no automatic right to dividends. The payment of dividends is decided by the board of directors and is based on several relevant criteria. First, the dividend must be legal. The rules for dividends vary by jurisdiction, but essentially the company must have sufficient *distributable profits* to pay the dividend. Some jurisdictions have complex methods of calculating this amount, but it can often be approximated using the balance in the retained earnings account. The purpose of limiting the dividends is to ensure that the company is not left in a position where it cannot pay its liabilities. Directors need to be aware of the legal requirements for dividend payments, as the payment of an illegal dividend could result in personal liability to the director if the company cannot, subsequently, pay its creditors. Second, the company must have sufficient cash to pay the dividend. Cash flow planning is important to the management of a business, and although the company may have sufficient retained earnings to declare a dividend, it may not have the cash readily available. Remember that the retained earnings balance does not equal cash, as companies will invest in many different types of assets. Third, the dividend must fit with the company's strategic priorities. A company that is able to pay dividends may choose not to in order to preserve cash for various future uses, such as reinvestment in capital assets, funding strategic acquisitions, entrance into new markets, funding share buybacks, and committing to research and development. As well, a company may not want to pay the maximum dividend it is legally entitled to because it does not want to create unrealistic expectations among shareholders for future dividends.

Once the directors have decided to declare a dividend, three significant dates need to be considered. First, the date of declaration is the date the board of directors meets to approve the dividend payment. This will be formally documented as a directors' resolution, and it is on this date that a liability is created, for both legal and accounting purposes. Second, in the directors' resolution, the date of record will be specified, which is the date on which a list of the shareholders who will receive dividends is compiled. Obviously, between the date of declaration and the date of record, shares will trade at a price based on the understanding that whoever holds the shares on the date of record is eligible for the dividend. Note, for many public stock exchanges, an ex-dividend date may also be relevant. This is a date several days before the date of record, which allows a period of time for share transactions to be processed. Third, sometime after the date of record is the date of payment. It is on this day that dividend payments are distributed to the shareholders of record.

Consider the following example. A company with 500,000 outstanding common shares declares a dividend of $0.75 per share on January 20. The resolution indicates a record date of January 31 and a payment date of February 15. The following journal entries would be made on each date:

Declaration date:



Note: The debit can either be made to a temporary account called Dividends declared, which will be closed to retained earnings at year-end, or it can be made directly to retained earnings.

Date of record:



No entry is made here, as the date of record does not represent an accounting event.

Date of payment:



Note: The dividends can be expressed as a per share amount, or they may be described as a percentage of the share's par value. Also, no dividends are paid on treasury shares as the company cannot pay itself.

Property Dividends

In certain instances, a company may choose to pay a dividend with assets other than cash. This could include shares of other companies held as investments, property, plant and equipment, inventory, or any other asset held. These types of transactions are rare for three obvious reasons: 1) the asset must be equally divisible among all holders of a particular class of shares, 2) the fair value of the asset needs to be determined, and 3) the asset must be able to be physically distributed to the shareholders. When the company can overcome these restrictions, the property dividend will be recorded in a manner similar to the journal entries previously identified. There will be an additional step, however, in that the asset must first be revalued to its fair value before the dividend is distributed. This will usually result in a gain or loss being recorded, which is appropriate as the asset is being disposed of to settle a liability.

Share Dividends

One way that a company can distribute a dividend to shareholders without depleting its cash resources is to pay a share (stock) dividend. This dividend distributes additional shares of the company to the shareholders proportional to their current holdings. For example, if a company declares a 5% share dividend, a shareholder who currently holds 100 shares would receive an additional five shares. Although there may be some complicated jurisdictional legal requirements regarding share dividends, the general principle is that they should be recorded at the fair value of the shares issued.

Consider the following example. A company currently has 100,000 shares outstanding that are trading at $5.25 per share. The company decides to declare a 5% share dividend, which means an additional 5,000 shares will be issued to existing shareholders ( ). Immediately prior to the dividend declaration, the implied value of the company is $525,000 ( ). Because a share dividend does not have any effect on the assets or liabilities of the company, we would expect the total value of the company to remain the same after the dividend. However, we would expect the market price per share to drop to $5.00 per share ( ), as the value is now spread among more shares.

The journal entries to record this transaction, assuming the share price drops to $5 as expected, would be as follows:

Declaration date:



Payment date:



Note: The fair value we use to determine the amount is the post-dividend (sometimes referred to as ex-dividend) value of . Also, if the company's year-end were to fall between the declaration date and the payment date, then the share dividends distributable balance would be reported in the equity section of the balance sheet, as it does not represent a liability like a cash dividend payable.

Declaring a share dividend causes part of the company's retained earnings to become capitalized as contributed capital (common shares). By doing so, the company has removed this portion of retained earnings from the pool of distributable earnings that can be later used to pay cash dividends.

Share Splits

Share splits, also known as stock splits, scrip issues, or bonus issues, are similar to share dividends except they have a different accounting treatment. Generally, the motivation for a share split is to reduce the market price of the share. For example, if the share price has risen to a point where it is no longer affordable, this makes it difficult for the company to sell shares to the public. A share split will be expressed as a proportion, such as a 2-for-1 split. This means that for every share held an additional share will be

issued. Thus, after the 2-for-1 split, the number of outstanding shares will be twice the previous number. This will normally have the effect of reducing the market price of the share by half, so that the total market capitalization remains unchanged.

Because there is no change in the economic resources or position of the company, no journal entry is required to record a share split. However, a memorandum entry should be made, noting the new number of shares. This will be important in the future for the purposes of calculating dividend payments and earnings per share amounts.

In some cases, it may be difficult to distinguish between a share split and a large share dividend. For example, the effects of a 100% share dividend and a 2-for-1 share split are essentially the same. As IFRS does not provide any specific guidance on this issue, professional judgment and consideration of the relevant legal framework will be required in determining how to record large share dividends.

A company may also engage in a reverse share split, sometimes referred to as a share consolidation. This will reduce the number of outstanding shares by a certain proportion. This type of transaction is usually motivated by the need to increase the market price of a share.

18.4.1. Preferred Share Dividends

As noted previously, a feature of preferred shares is that they often receive preferential treatment when dividends are declared. We will now look at some examples of how dividends are calculated when preferred shares are outstanding.

Assume a company has two classes of shares: 1) common shares, of which 100,000 are outstanding with a carrying amount of $480,000, and 2) preferred shares with a fixed dividend of $2 per share, of which 20,000 are outstanding with a carrying amount of $320,000. In the current year, the company has declared total dividends of $120,000. Dividends will be allocated to each class of shares as follows:

a. Preferred shares are non-cumulative and non-participating:

Calculation	**Preferred**			**Common**			**Total**	
Current year:	$	40,000					$	40,000
Balance of dividends ( )		-		$	80,000			80,000
	$	40,000		$	80,000		$	120,000

b. Preferred shares are cumulative and non-participating, and dividends were not paid last year:

Calculation	**Preferred**			**Common**			**Total**	
Arrears:	$	40,000					$	40,000
Current year:		40,000						40,000
Balance of dividends ( )		-		$	40,000			40,000
	$	80,000		$	40,000		$	120,000

c. Preferred shares are cumulative and non-participating, and dividends were not paid for the last two years:

Calculation	Preferred			Common			Total	
Arrears:	$	80,000					$	80,000
Current year:		40,000						40,000
Balance of dividends ( )		-			-			-
	$	120,000			-		$	120,000

d. Preferred shares are non-cumulative and fully participating:

Calculation	Preferred			Common			Total	
Current year basic dividend	$	40,000		$	60,000		$	100,000
Current year participating dividend		8,000			12,000			20,000
	$	48,000		$	72,000		$	120,000

Note: The basic preferred dividend is calculated as before. Then, a like amount is allocated to the common shares. The preferred dividend can be expressed as a percentage: . Therefore, the common shares are also allocated a basic dividend of . This leaves a remaining dividend of $20,000, which is available for participation. The participation is allocated on a pro-rata basis as follows:

Carrying amounts of each class:

Preferred	$	320,000		40%
Common		480,000		60%
Total	$	800,000		100%

The participating dividend is therefore:

Preferred		=	$	8,000
Common		=	$	12,000

If the preferred shares were cumulative and fully participating, the process followed is the same as above, except the dividends available for participation must be reduced by any preferred dividends in arrears, as these must be paid first before any dividends can be paid to common shareholders.

The pro-rata allocation of the participating dividend, shown above, is one way to determine the rate of participation. However, if a company's articles of incorporation specify other methods of participation for different classes of shares, then these calculations must be applied instead.

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- A video is available on the Lyryx web site. Click Here to view the video.

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19.5: Presentation and Disclosure

Previously, we have examined the statement of changes of equity, which is one of the required financial statements under IFRS. Recall that this statement is usually presented in a worksheet format and can contain substantial detail of the various classes of

equity accounts. Consider, for example, this excerpt from the 2021 financial statements of a multinational energy company:

Group statement of changes in equity														
($ million)														
		Share capital and reserves		Treasury shares		Foreign currency translation reserves		Fair value and other reserves		Profit and loss account		Total controlling interests		Non-controlling interests		Total equity
Balance 1 January 2021		40,567		(15,978)		3,111		(525)		108,421		135,596		1,259		136,855
Profit for the year										4,257		4,257		226		4,483
Other comprehensive income						(6,264)		(197)		2,699		(3,762)		(21)		(3,783)
Total comprehensive income						(6,264)		(197)		6,956		495		205		700
Dividends										(3,655)		(3,655)		(166)		(3,821)
Repurchases of ordinary shares										(3,187)		(3,187)				(3,187)
Share-based payments, net of tax		241		268						(297)		212				212
Share of equity-accounted entities' change										67		67				67

s in equity, net of tax																
Transactions involving non-controlling interests														112		112
Balance 31 December 2021		40,808		(15,710)		(3,153)		(722)		108,305		129,528		1,410		130,938

Note that a number of contributed capital accounts are included, such as the share capital and the capital reserves, along with a deduction for treasury shares. Other reserve accounts with specific purposes, such as fair value reserves (i.e., accumulated other comprehensive income), are also identified and segregated based on their purpose. The company also separately identifies an account for retained earnings, using the title Profit and Loss account. IAS 1: 106 specifies the disclosure requirements of the statement of changes in equity. Key disclosures include total comprehensive income for the period, a reconciliation of the opening and closing balances of each component of equity, including changes due to other comprehensive income and profit or loss, dividends, transactions with owners, and changes due to retrospective adjustments due to error corrections or accounting policy changes. As long as the meaning and purpose of the accounts are clear, companies may use terminology that is not precisely the same as suggested in the *Conceptual Framework*. Additionally, companies may choose to provide subtotals for certain types of account categories, such as contributed capital or reserves. Contributed capital represents amounts contributed by shareholders, including share capital, share premiums, and contributed surplus balances related to share transactions.

In addition to the statement of changes in equity, the financial statements of this energy company contain a further five pages of explanatory notes, which provide more details of the equity accounts. Some of these details include a breakdown of the features and rights of different classes of share capital, a reconciliation of the six reserve accounts, and details of treasury share transactions. IAS 1 specifically requires the following disclosures either in the statement of changes in equity or in the notes:

a. For each class of share capital:
   i. The number of shares authorized
   ii. The number of shares issued and fully paid, and issued but not fully paid
   iii. Par value per share, or that the shares have no par value
   iv. A reconciliation of the number of shares outstanding at the beginning and at the end of the period
   v. The rights, preferences, and restrictions attaching to that class including restrictions on the distribution of dividends and the repayment of capital
   vi. Shares in the entity held by the entity or by its subsidiaries or associates and
   vii. Shares reserved for issue under options and contracts for the sale of shares, including terms and amounts

b. A description of the nature and purpose of each reserve within equity (CPA Canada, 2016, Accounting, IAS 1: 79).

Disclosure must also be made of the amount of dividends declared during the year, both in total and per share. Paragraphs 134 to 138 of IAS 1 also contain detailed requirements of information to be disclosed regarding the company's objectives, policies, and processes for managing capital.

The substantial disclosure requirements for equity accounts result from the need to serve one of the primary user groups of financial statements: the investors. When investing in a company, one needs a clear understanding of how capital is structured, the various rights and restrictions of different equity categories, and the impact of dividend payments. The need for this type of

information, combined with the complex legal nature of equity instruments, creates substantial disclosure requirements that the professional accountant needs to be aware of when drafting financial statements.

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19.6: IFRS/ASPE Key Differences

IFRS	ASPE
No specific guidance for treasury shares.	Treasury shares can be accounted for as either a single transaction or as two transactions, although ASPE expresses a preference for the single-transaction method.
No specific guidance for re-acquisition of shares.	Guidance provided that shows the order in which proceeds paid should be applied (share capital, contributed surplus, retained earnings).
Accumulated other comprehensive income is included as a component of equity, usually disclosed as part the balance of reserves.	There is no concept of other comprehensive income in ASPE.
Balances and transactions for all equity accounts are presented in the statement of changes in equity.	The retained earnings statement presents changes in retained earnings, while other equity transactions are usually presented in the notes.
Disclosure of the objectives, polices, processes for managing capital are required.	No such disclosures are required.

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19.7: Chapter Summary

LO 1: Describe the different forms of equity and identify the key features that are important for accounting purposes.

Equity represents the residual interest in a business held by the owners, or the difference between assets and liabilities. Equity can take the form of funds contributed by shareholders (common and preferred shares and contributed surplus), retained earnings, and other reserves. Preferred shares will have legal features that give them preference when dividends are distributed, and may have other features that will affect their classification as a liability or equity. Retained earnings represent the accumulated profits of a business, less any dividend distributions made. Reserves can take a number of forms, but are often the result of retained earnings appropriations or the application of several accounting standards that result in re-measurements that lead to revaluation surpluses.

LO 2: Explain and apply accounting standards for different types of share issues.

When shares are issued for cash, the par value (or full amount of proceeds if there is no par value) is credited to common share capital. The balance of proceeds in excess of the par value is credited to contributed surplus. When shares are issued by subscription, a receivable is created and an interim share capital account (shares subscribed) is created, as unpaid shares normally cannot be issued. The interim share account is eliminated when the final payment is received and shares are actually issued. If a subscriber defaults, the accounting treatment will depend on legal requirements, the subscription contract, and corporate policy. When shares are issued in exchange for goods or services, the shares should be recorded at the fair value of the goods or services received.

LO 3: Explain and apply accounting standards for different situations that can occur when shares are reacquired.

When shares are reacquired, they may either be cancelled or retained as treasury shares. When they are cancelled, the proceeds paid should first be allocated to share capital at the average issue cost, then to contributed surplus that relates to the class of shares, and finally to retained earnings, if necessary. When shares are retained as treasury shares, the amount of the proceeds is a debit to a treasury share account until the shares are either reissued or cancelled. The treasury share account is reported as a contra-equity amount.

LO 4: Describe the accounting treatments for different types of dividends and calculate divided allocations when preferred shares exist.

Dividends represent distributions of earnings to shareholders and may take several forms. The most common form is dividends paid in cash. When dividends are declared, a journal entry is required to establish the liability. No journal entry is required on the date of record, but a journal entry will be required to record the actual payment of dividends. Property dividends require the asset being distributed to be revalued to its fair value immediately prior to the distribution. Share dividends should be reported at the share's fair value immediately after the distribution (ex-dividend amount). Share dividends essentially capitalize part of the company's retained earnings and remove them from future dividend distributions. Share splits do not require any journal entries, and are usually motivated by a desire to lower the company's share price. When preferred shares are outstanding, the declared dividends must first be allocated to the preferred shares, based on the stated rate and the cumulative and participating features that may be present in those shares.

LO 5: Describe the presentation and disclosure requirements for shareholders' equity accounts.

IFRS requires presentation of a statement of changes in equity that details the opening and closing balances of all equity accounts, along with details of changes during the year. As well, significant disclosures of the legal requirements and features of different classes of shares are required, along with descriptions of the purposes of the different reserve accounts. Dividends declared during the year must also be disclosed, along with a discussion of the company's capital management activities.

LO 6: Identify differences in the accounting treatment of shareholders' equity between IFRS and ASPE.

ASPE provides specific guidance for treasury shares and the re-acquisition of shares, whereas IFRS does not. Accumulated other comprehensive income is a category of equity that exists in IFRS but not ASPE. A statement of changes in equity is required by IFRS, but ASPE usually presents a retained earnings statement and note disclosures. Capital management disclosures are required under IFRS but not ASPE.

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19.8: References

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19.9: Exercises

19.1

Identify if the following transactions will increase (I), decrease (D), or have no effect (NE) on retained earnings:

Transaction	Effect
Issuance of common shares	
Share split	
A revaluation of surplus resulting from a remeasurement of an	
available-for-sale asset	
Declaration of a cash dividend	
Net income earned during the year	
Declaration of a share dividend	
Payment of a cash dividend	
Issuance of preferred shares	
Re-acquisition of common shares	
Appropriation of retained earnings for a reserve	
A cumulative, preferred dividend that is unpaid at the end of the year	

19.2

Lainez Ltd. was incorporated on January 1, 2021. During its first year of operations, the following share transactions occurred:

January 1:	Issued 20,000 common shares for cash at a price of $15 per share.
February 1:	Issued 500 common shares to settle an invoice from the law firm that handled the incorporation of the company. The invoice amount was $9,000.
March 15:	Issued 10,000 preferred shares for cash at a price of $50 per share.
April 30:	Issued 2,500 common shares in exchange for a piece of specialized manufacturing equipment. The carrying value of the equipment on the seller's books was $40,000, but the asking price was $55,000. An independent engineering report estimated the value in use for this equipment at $50,000.
June 15:	Issued 5,000 common shares for cash at a price of $25 per share.

Required: Prepare the journal entries for the share transactions.

19.3

Papini Inc. decides to issue its common shares on a subscription basis. Each share can be purchased for $15 per share, with a deposit of $5 per share due at the time of subscription, and the remaining $10 per share due after three months. A total of 100,000 shares was subscribed at the time of the initial offering.

Required:

a. Prepare the journal entries to record the initial subscription and the receipt of the deposits.
b. Prepare the journal entries to record the collection of the balance owed and the issuance of the shares, assuming all subscribers complete the transaction.
c. Repeat part (b) assuming that 10% of the subscribers default on the final payment and the company refunds the deposits.
d. Repeat part (b) assuming that 10% of the subscribers default on the final payment and the company keeps the deposits.
e. Repeat part (b) assuming that 10% of the subscribers default on the final payment and the company issues pro-rata shares to the defaulting subscribers.

19.4

Pinera Ltd. reacquired 5,000 of its no-par common shares at a price of $11 per share. It subsequently resold the shares at $16 per share.

Required: Using the single-transaction method, record the above treasury share transactions.

19.5

On January 1, 2021, Alarcon Inc. issued 20,000, $5 par value shares at $17 each. On June 30, 2021, 10,000 of the shares were reacquired at $19 each and subsequently cancelled.

Required: Prepare the journal entries to record the issuance and re-acquisition of the above shares.

19.6

Tanizaki Enterprises Ltd. reported the following share transactions during 2021, its first year of operations:

January 15:	Issued 150,000 no-par common shares at $25 each.
March 30:	Reacquired and cancelled 10,000 shares at $20 each.
July 31:	Issued 20,000 shares at $22 each.
October 31:	Reacquired and cancelled 15,000 shares at $29 each.

Required: Prepare the journal entries to record the above transactions.

19.7

On January 1, 2022, Belloc Limited, a toy manufacturer, had outstanding share capital of 100,000 common shares. During 2022, the following dividend transactions occurred:

May 5:	A 10% share dividend was declared and distributed. On this date, the ex-dividend price was $25 per share.
May 15:	A cash dividend of $0.80 per share was declared for shareholders of record on May 20, to be distributed on May 25.
May 25:	The cash dividend was distributed.
May 27:	In order to reduce some excess inventory levels, the company declared a property dividend. Each share was to receive eight units of the Atomic Accountant action figure. Due to declining sales levels, the inventory carrying amount had previously been written down to its estimated realizable value of $0.75 per unit. The record date for this dividend was May 30, and the distribution date was May 31.
May 31:	The property dividend was distributed.

Required: Prepare all the journal entries necessary to record the above dividend transactions.

19.8

Ayme Inc. had the following share capital outstanding on January 1, 2022:

Class A common shares, unlimited authorized, 250,000 issued		$	8,000,000
Class B preferred shares, $100 par value, $3 dividend,			
100,000 authorized, 50,000 issued			5,000,000

At the end of 2022, the company declared total dividends of $1,200,000. No dividends had been paid in either 2020 or 2021.

Required:

Determine the amount of dividends paid to each class of share under each of the following independent conditions:

a. The Class B preferred shares are non-cumulative and non-participating.
b. The Class B preferred shares are cumulative and non-participating.
c. The Class B preferred shares are cumulative and fully participating.

19.9

You have been asked to provide advice to the board of directors of Denevi Ltd., a publicly traded company. The company's shares are currently trading at $12 per share, and the board is considering whether to issue a 50% share dividend or a 3-for-2 share split, which means that for every two shares held, an additional share will be issued. The company currently has 5,000,000 common

shares outstanding at a total carrying amount of $12,500,000 and retained earnings of $42,000,000. There are no other equity accounts reported.

Required:

a. Calculate the price the shares are expected to trade at after each of the proposed transactions.
b. Determine the balances to be reported in the shareholders' equity section after each of the proposed transactions.
c. Provide a recommendation to the board of directors as to which action they should take.

19.10

Ocampo Inc. reported the following amounts in the shareholders' equity section of its December 31, 2021, balance sheet:

Preferred shares, $2 dividend, 10,000 shares authorized, 4,500 issued		$	225,000
Common shares, 100,000 shares authorized, 35,000 issued			280,000
Contributed surplus			7,000
Retained earnings			590,000
Accumulated other comprehensive income			115,000

The contributed surplus arose from past re-acquisitions of common shares.

During 2022, the following transactions occurred in the order listed below:

i. Issued 5,000 common shares at $9 per share.
ii. Reacquired 10,000 of the outstanding common shares for $14 per share and cancelled them.
iii. Declared a 10% share dividend on the outstanding common shares. The ex-dividend price of the shares was $16.
iv. Issued the share dividend.
v. Exchanged 1,000 preferred shares for a piece of vacant land. The land's fair value, as determined by a qualified appraiser, was $19,000 and the shares were actively traded on this day for $21 per share.
vi. Declared and paid the preferred share dividend and a $1 per share dividend on the common shares.

Required:

a. Prepare the journal entries to record the 2022 equity transactions.
b. Prepare the Statement of Changes in Shareholders' Equity for the year ended December 31, 2022. Net income for the year was $120,000 and other comprehensive income resulting from a revaluation of property, plant, and equipment was $23,000.

19.11

Manguel Merchandising Ltd. reported the following amounts in the shareholders' equity section of its December 31, 2020, balance sheet:

Preferred shares, $1 cumulative dividend, 100,000 shares authorized, 75,000 issued		$	1,875,000
Common shares, unlimited shares authorized, 250,000 issued,			
210,000 outstanding			3,800,000
Contributed surplus			58,000
Treasury shares (40,000 common shares)			(440,000)
Retained earnings			4,260,000
Total shareholders' equity		$	9,553,000

The contributed surplus arose from past re-acquisitions of common shares. On December 31, 2020, two years of preferred dividends were in arrears, that is, preferred dividends were not paid in 2019 or 2020.

The following transactions occurred in 2021:

i. January 15: 10,000 of the shares held in treasury were resold at a price of $13 per share.
ii. February 28: 50,000 common shares were reacquired and immediately cancelled for total cash proceeds of $705,000.
iii. June 30: 25,000 preferred shares were reacquired and immediately cancelled at a price of $31 per share.
iv. December 31: A 5% share dividend was declared and distributed on the common shares. The ex-dividend price of the share was $17. Preferred dividends were also declared and paid in cash, as they needed to be declared before the common share dividend could be declared.

Required: Prepare the journal entries to record 2021 equity transactions.

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CHAPTER OVERVIEW

Chapter 20: Earnings per Share

Facebook and Twitter: Same Industry, But Two Different Stories

Facebook and Twitter reported very different earnings performance in Q2 of 2015. Facebook stocks increased by nearly 30% in the previous year while Twitter struggled. Twitter's stock had lost more than 7% from 2014 and more than 33% from its high in April 2015. Since both are social media companies, why such a difference?

Twitter was in transition while it searched for a new CEO, resulting in a company operating without a leader or a strategic plan. Moreover, plans to make the software app more user-friendly had been delayed. Some increases in earnings per share were anticipated by the market, but this was overshadowed by the key performance metric of growth for this industry, the Average Monthly Active Users (MAUs), which fell short of analysts' expectations.

Facebook on the other hand had 4.7 times Twitter's user base and had been increasing its earnings per share by giant leaps, making this company the eighth largest company in America by the market. Growth is expected to continue, even if at a slower rate typical of companies that reach giant-size proportions. Moreover, Bank of America has added Facebook to its list of top investment ideas due to the firm's improved advertising targeting through Instagram, its video campaigns, and its growth of new software platforms such as Messenger. Facebook has also leveraged its investments in ramping up sharing instant news articles and following public figures campaigns (areas that were once dominated by Twitter). Both developments have resulted in increased followers and have been very successful.

Time will tell if Twitter can make up for its lost market position.

(Source: Boorstin, 2015)

Learning Objectives

After completing this chapter, you should be able to:

- Describe earnings per share (EPS) and their role in accounting and business.
- Describe basic and diluted earnings per share in terms of an overview.
  - Calculate basic earnings per share.
  - Calculate diluted earnings per share and report the final results.
- Describe the issues that can affect both basic and diluted earnings per share.
- Calculate basic and diluted earnings per share in terms of a comprehensive illustration.
- Identify and explain how earnings per share and price-earnings ratio are used to analyze company performance from an investor perspective.
- Explain the difference between ASPE and IFRS regarding earnings per share.

Introduction

This chapter will focus on the basics of calculating, reporting, and interpreting earnings per share (EPS) as an important shareholder and potential investor evaluation metric. The chapter will discuss two primary types of EPS, namely basic and diluted earnings per share.

Chapter Organization



20.1: Overview
20.2: Basic and Diluted Earnings per Share- A Review
20.3: Other Issues
20.4: Comprehensive Illustration
20.5: Earnings per Share Analysis
20.6: IFRS/ASPE Key Differences
20.7: Chapter Summary
20.8: References
20.9: Exercises

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20.1: Overview

Just how important are earnings per share? Before that question can be answered, it is important to understand what this metric is. Earnings are simply a company's net income or net profit. As every company has a different number of shares owned by its shareholders, comparing only their earnings figures is like comparing apples to oranges. It does not indicate how much income each company earned for each of its common shareholders. So, earnings per share (EPS) becomes a *per share* way of describing net income, making EPS a good metric for shareholders and potential investors.

Earnings season is the stock market's equivalent to a school report card. It happens four times per year in many countries where publicly traded companies report their financial results. Although it is important to remember that investors look at all financial information, EPS is the most important number released during an earnings season and it attracts the most attention and media coverage. Before earnings reports come out, stock market analysts issue earnings estimates in terms of what they think earnings will be. Research firms subsequently compile these forecasts into a consensus earnings estimate. When a company is able to beat this estimate, it is called an earnings surprise, and the stock market price usually moves higher. Conversely, if a company releases earnings below these estimates, it is said to *disappoint*, and the market price for the stock typically moves lower. It is difficult to guess how a stock will move during an earnings season as it is based on expectations, which supports the efficient market hypothesis. Shareholders and potential investors care about EPS because it ultimately drives stock prices.

Sometimes a company with a sky-rocketing stock price might not be making the earnings to support the rise, but the rising price means that investors are hoping – the expectation factor – that the company will be profitable in the future. But, there are no guarantees that the company will fulfill investors' current expectations.

When a company is making net income and has a positive EPS, it has two options. First, it can retain its net income to improve its products and develop new ones. Second, it can either pay a dividend as a return on investment, or offer a share buyback at a higher price. In the first instance, management reinvests profits in the hope of making more profits. In the second instance, the investor receives a more immediate return on investment via the dividend and capital appreciation of the share market price. Typically, smaller companies attempt to create shareholder value by reinvesting profits, while more mature companies pay out dividends. Neither method is necessarily better, but both rely on the same idea: in the long run, earnings provide a return on shareholders' investments, and EPS is the metric used to determine the magnitude of this return.

To summarize, earnings means profit, and is often evaluated in terms of earnings per share. Existing and potential shareholders and analysts use EPS to evaluate a company's performance, to predict future earnings, and to estimate the value of a company's shares.

In terms of the stock market, EPS is the most important indicator of a company's financial health. Earnings reports are released quarterly and are followed very closely by the stock market, news media, and company shareholders. It is little wonder that EPS has become such a deeply entrenched metric to evaluate company performance for common shareholders and potential investors (Investopedia, n.d.).

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20.2: Basic and Diluted Earnings per Share- A Review

Basic earnings per share (EPS) is simply:

Basic EPS quantifies the amount of earnings attributable to each common share issued.

If a company's capital is composed of common shares and preferred shares or debt that has no conversion rights, this is referred to as a company with a simple capital structure. Capital structures that include securities that have conversion rights such as convertible preferred shares, convertible bonds payable, and stock options are known as companies with complex capital structures. Complex capital structures for publicly traded companies require another indicator to be calculated and reported, which is called diluted EPS. Dilution occurs when additional common shares are issued without a proportionate increase in the level of earnings or resources that generate those earnings. For example, shares issued for cash will increase both the number of shares and the resources (cash as an asset) so they are not dilutive. Shares issued to holders of convertible securities increases the number of shares and not necessarily with a corresponding increase in company resources. They are, therefore, potentially dilutive. Diluted EPS is often referred to as a worst-case scenario measurement, where the effect on earnings per share is measured assuming that all potential additional common shares for convertible securities, options, and warrants have *already* been issued since the beginning of the year.

In terms of reporting requirements, ASPE companies are not required to report EPS statistics, which makes intuitive sense given that these companies are privately owned, with an often closely held stockholder base. On the other hand, an IFRS company that is publicly traded is required to disclose basic EPS and diluted EPS on the face of its income statement. Moreover, if a company reports discontinued operations, EPS disclosures must also further break down EPS into income from continuing operations, discontinued operations, and net income. An example of basic and diluted EPS with discontinued operations is shown below:

Earnings per share	**Basic**			**Diluted**	
Income from continuing operations	$	1.25		$	1.10
Loss from discontinued operations, net of tax*		(0.15)			(0.08)
Net income	$	1.10		$	1.02

* EPS for discontinued operations disclosures is a required disclosure, but it may be included in the notes to financial statements.

Recall the importance of being able to differentiate between what earnings from ongoing, or continuing, operations from those that will not continue. This was discussed in the chapter regarding the statement of net income.

The components of the basic EPS numerator and denominator are discussed next.

19.2.1. Basic Earnings per Share

Numerator: Net Income Available to Common Shareholders

Two things to keep in mind regarding determining the net income numerator amount:

1. Net income is relevant to this calculation but other comprehensive income (OCI) is not. OCI includes items such as unrealized gains or losses for securities that management does not intend to actively trade, hence these types of gains and losses are not deemed to be part of the company's current period performance.
2. If preferred shares exist, then net income (or loss) available to common shareholders must be adjusted by the preferred shares dividends. This is because preferred shares rank in seniority over common shares regarding dividends, therefore, if necessary, a

portion of net income has to be set aside to cover these dividends. The adjustment amount to deduct from net income will differ if the preferred shares are cumulative or non-cumulative:

- If cumulative, deduct the dividend amount from net income according to the preferred share's entitlement, which is the stated dividend rate regardless of whether they were declared or paid. If dividends are in arrears, only the current year's dividend is to be deducted from net income since the EPS figures reported in previous years already included the dividend for that year.
- If non-cumulative, deduct the dividend amount from net income only if it has been declared, regardless of their stated dividend rate or if they were paid or not. Non-cumulative preferred shares are only entitled to a dividend if the board of directors declares one. The amount of the dividend declared can be based on their stated dividend rate or it can be less. There are no dividends in arrears for non-cumulative preferred shares in cases where the board does not declare one.

For example, Ogdell Co. has a net income of $350,000 and has two classes of preferred shares as follows:

- Class A: $3 cumulative preferred shares. Authorized 20,000; issued and outstanding, 10,000 shares.
- Class B: $4 non-cumulative preferred shares. Authorized 30,000; issued and outstanding, 15,000 shares.
- No dividends have been declared or paid in the current year. The income available to common shareholders would be calculated as follows:



Assume now that Ogdell Co. has a net loss of $125,000 and that the Class A preferred shares have dividends in arrears from the previous year of $15,000. In the current year, the board of directors declared a total dividend to both classes of preferred shareholders of $50,000. The income available to common shareholders would be calculated as follows:



* The total dividend of $50,000 declared will first be applied to the Class A preferred shares dividends in arrears of $15,000 and next to the Class A current year dividends of $30,000, leaving a declared dividend for the Class B, non-cumulative shares of $5,000.

Denominator: Weighted Average Number of Common Shares Outstanding (WACS)

Two types of events can affect the WACS calculation:

1. If common shares have been issued or purchased for consideration, that is, cash in exchange for assets or other consideration, the average must be weighted by the number of months these have been outstanding during the current fiscal year.
2. If stock dividends or stock splits (or reverse stock splits) occur, the number of shares outstanding must be restated on a retroactive basis as though the stock dividend or split had occurred at the beginning of the year. (These may also be referred to as share dividends and share splits.) The shares issued before the stock dividend or split will now be restated on the same basis as shares issued after the stock dividend or split. If the stock dividend or split occurs after the year-end, but before the financial statements are issued, the WACS are to be restated for the year just ended. Additionally, any previous year's EPS included in the comparative financial statements are also to be restated. The restatement ensures that the EPS is prepared on a consistent basis over the reporting period to enhance comparability and minimize potential manipulation of the EPS amounts because of performance benchmarks or restrictive debt covenants.

To ensure that the WACS are calculated correctly, there are three steps in the preparation of the WACS schedule:

- **Step 1:** Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting period. An event is when the outstanding number of shares changes, such as when shares are issued or repurchased for either cash, as stock dividends, or for stock splits. Complete the total shares outstanding for each row. If shares are issued on December 31, 2020, they are ignored for the purposes of calculating the WACS because they have not been outstanding during the year.
- **Step 2:** For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event date when it initially occurs, and backwards to the beginning of the fiscal year.
- **Step 3:** For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS total amount.

Continuing with our example for Ogdell Co., assume that the company had 130,000 common shares outstanding on January 1, 2020. The following events occurred during the year:

- On February 1, 2020, an additional 20,000 shares were issued.
- On May 1, 2020, the company repurchased 1,000 shares.
- On July 1, 2020, the company declared and issued a 10% stock dividend.
- On September 1, 2020, the company issued another 15,000 shares.
- On November 1, 2020, the company declared and issued a two-for-one stock split.

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting period. An event is where the outstanding number of shares changes such as when shares are issued or re-purchased for either cash, as stock dividends or for stock splits. Complete the total shares outstanding for each row. If shares are issued on December 31, 2020, they are ignored for the purposes of calculating the WACS because they have not been outstanding during the year.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding of the Year
1	January 1	Opening balance	130,000			
2	February 1	Issued shares	20,000			
			150,000			
3	May 1	Repurchased shares	(1,000)			
			149,000			
4	July 1	10% stock dividend				
			163,900			
5	September 1	Issued shares	15,000			
			178,900			
6	November 1	2-for-1 stock split				
			357,800			

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event date it initially occurs and backwards to the beginning of the fiscal year.



Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

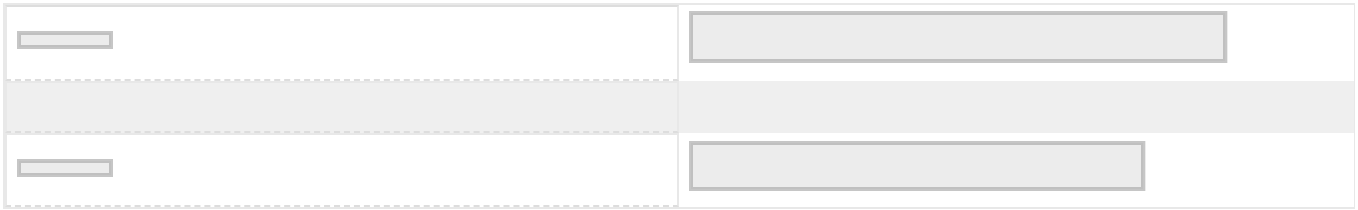


*

Note: Under the fraction of year column the total should always sum to 12/12. Going back to the earlier calculation regarding income available to common shareholders, Ogdell Co.'s net income was $350,000, and the company had two classes of preferred shares as follows:

- Class A: $3 cumulative preferred shares, authorized 20,000, issued and outstanding, 10,000 shares.
- Class B: $4 non-cumulative preferred shares, authorized 30,000, issued and outstanding, 15,000 shares.
- No dividends have been declared or paid in the current year. The income available to common shareholders was calculated earlier to be $320,000 ( ).

The numerator and denominator are now both calculated, so the basic earnings per share calculation can now be completed as follows:



If Ogdell Co. also had a discontinued operations loss of $20,000 net of tax, the basic EPS would be calculated as follows:

	Income			WACS			Basic EPS	
Net Income (from continuing operations								
available to common shareholders)	$	320,000		334,865		$		0.9556
Loss from discontinued operations								
net of tax*		(20,000)		334,865				(0.0597)
Net income available to common								
shareholders	$	300,000		334,865		$		0.8959

* Discontinued operations:

The reporting disclosures for basic earnings per share are shown below:

Earnings per share:			
Income from continuing operations		$	0.96
Loss from discontinued operations, net of tax*			(0.06)
Net income		$	0.90

* EPS for discontinued operations disclosures may be included in the notes to financial statements.

19.2.2. Diluted Earnings per Share

As previously stated, any publicly traded company with a complex capital structure is to also disclose diluted EPS, separated into continuing operations and non-continuing operations, like basic EPS illustrated above. This indicator assumes that all dilutive securities are converted to common shares, which give shareholders a worst-case scenario of the lowest possible EPS about company performance. The dilutive calculation also assumes that, since the conversion to common shares has fully taken place, the convertible securities themselves will be extinguished and the company will no longer be obligated to pay interest or dividends on the original security. In other words, the dilutive calculation will affect both the income available to shareholders (numerator) and the weighted average number of common shares outstanding (denominator) in the original equation:



Below are three steps that, if followed carefully, will make the diluted EPS calculation easier:

Step 1: Identify all potentially dilutive securities. These can be convertible bonds or convertible preferred shares, both exchangeable into common shares or stock options and warrants that entitle the holder to buy common shares at a specified price. The conversion feature details will be itemized in the documentation for each convertible security and will include information regarding the conversion time frame, the rate of conversion to common shares, and the specified price to purchase common shares, if applicable.

Step 2: Calculate the individual effect of each potentially dilutive security and rank them from most to least dilutive. Some of these securities will only affect the number of shares (denominator) such as stock options, warrants, and contingent commitments for shares, while others such as convertible bonds and convertible preferred shares will affect both the income available to common shareholders (numerator) and number of shares (denominator).

Step 3: Complete a diluted EPS schedule and report the results, starting with the basic EPS numerator and denominator amounts. Transfer the numerator and denominator amounts from the individual effects calculated in Step 2 above for each convertible security identified as dilutive, in ranked order, and calculate a diluted EPS subtotal after each. Remove any securities whose subtotal indicates that an increase in diluted EPS has occurred. Complete the EPS disclosures resulting from the analyses.

Diluted EPS Example

Using the steps outlined above, and continuing with the example for Ogdell Co., the basic EPS before discontinued operations is:

	Income	WACS	Basic EPS
Income from continuing operations			
available to common shareholders	$320,000	334,865	$0.9556

Step 1: Identify and calculate the individual effects for all potentially dilutive options, warrants, and other contingent commitments.

Stock options allow the option holder either to buy shares (call options) or sell shares (put options) for a specified price (exercise price) within a time limit as defined by the option document. If the options are in the money (i.e., the specified price compared to the current market price will result in a benefit to the holder), and the holder proceeds to exercise the options, the company is obligated to sell (write) or to buy (purchase) the shares as set out in the options agreement. Conversely, if the options are not in the money, the option holder will not exercise them, and the options will eventually expire. Therefore, it follows that only options that are in the money will be dilutive as they are the only ones that will be exercised.

For example, if the option holder purchased call options that entitles her or him to purchase common shares for $30 each, at a time when the current market price for the shares has risen to $36 each, it is likely that the option holder will exercise the right to purchase as the shares are in the money. Issuing more shares to the option holder increases the total number of shares issued (denominator); as such, the options must be included in the diluted EPS calculations. However, as the effect on net income from the exercise of options is not easy to estimate, the treasury stock method is chosen to calculate the dilutive effect of options and warrants, which limits the calculation to the number of shares denominator value. It also assumes that the company would use the monies received from the option holders to repurchase common shares from the market and subsequently retire them. This would lessen the dilutive impact on EPS. Put another way, shares would be issued to the holders and the resulting proceeds would be used to repurchase its own shares from the market. Since the exercise price is less than the current market price, more shares would be issued than could be repurchased from the market. This difference is the additional number of shares to be included in the diluted EPS calculation using the treasury stock method.

For example, Ogdell Co. has (call) options outstanding that entitle the option holder to purchase 1,000 common shares for an exercise, or strike, price of $30 per share. The company has performed well lately, and the average market price per share has risen to $50.[1] Option holders will benefit from purchasing the shares for $30, so these options are in the money and are dilutive under

the treasury stock method. The difference between the 1,000 shares issued to the option holders and the number of shares that the company could repurchase with the proceeds, given a market price of $50, is as follows:

Treasury Stock Method			
Proceeds received from exercise of options			
( )		1,000	shares
Proceeds used to purchase common shares from the market			
		(600)	shares
Incremental shares issued		400	shares

If Ogdell has (put) options outstanding that entitle the option holder to sell 1,000 common shares back to the company at an exercise price of $40 per share, when the current average market price is $35, these would also be considered in the money and dilutive. In this case, the reverse treasury stock method would be used, which assumes that the company would issue enough shares for cash in the market at the beginning of the year to cover their obligation to buy back the put options. As option holders will benefit from selling the shares at $40 each, the options are considered in the money and dilutive under the reverse treasury stock method. The proceeds required by the company to meet their obligations to the option holders would be $40,000 ( ). If the current market price is currently $35 per share, the company would have to ensure that it issued an additional 1,143 shares ( ) at the beginning of the year in order to have enough proceeds available to meet their obligation to buy back the 1,000 shares from the option holders. The difference between the 1,143 shares issued for cash at the beginning of the year and the subsequent buy-back of 1,000 shares from the options holders, or 143 shares, would be included in the diluted EPS calculation in the same way as is shown for the (call) options illustrated above.

Contingently issuable shares can also be considered dilutive if they meet the criteria at any point during the reporting period. For example, if shares are issuable to key executive when earnings reach a certain level, and this level had already been achieved by the beginning of the reporting period, the diluted earnings per share calculation would include these contingent shares in the denominator since the beginning of the reporting period. If Ogdell Co. had agreed to issue 50 shares to any division manager who was able to increase their respective divisional earnings by 10% in the current year, and three such managers did in fact achieve the 10% increase, the diluted EPS calculation would include 150 ( ) additional shares.

The incremental shares for the options and the contingently issuable shares will be included in the diluted EPS schedule as denominator values as shown below:

Diluted EPS Calculation Schedule					
	Income		# of shares		EPS
	(numerator)		(denominator)		
Basic EPS	$320,000		334,865		$0.9556
Call options:					
Shares issued @ $30 per share			1,000		
Shares repurchased			(600)		
	-		400		
Contingently issuable shares:					
( )			150		
	-		150		
Put options:					
Shares issued ( )			1,143		
Share repurchased (1,000 @ $40)			(1,000)		
	-		143		
Diluted EPS	$320,000		335,558		$0.9536

As seen above, the net additional 693 shares ( ) have resulted in a diluted EPS of $0.95, or $0.01 less per share than the basic EPS of $0.96 (rounded). The dilutive effect of the options and contingently issuable shares makes sense as only the number of shares has increased with no effect on the income numerator. Mathematically, an increasing denominator with an unchanged numerator will be the most dilutive and will be listed first in the diluted EPS calculation, which is illustrated later in Step 3.

Step 2: Calculate the individual effect of each potentially dilutive convertible security and rank them from most to least dilutive.

Convertible debts, such as bonds and cumulative preferred shares that are convertible into common shares, are potentially dilutive convertible securities. Unlike options, both securities will affect not only the number of shares but also the net income. For example, if bonds are converted into common shares, the number of shares will increase (denominator), and the interest expense saved due to the conversion of the debt to common shares will increase the amount of income available to common shareholders (numerator).

If cumulative preferred shares are converted to common shares, the number of shares will increase (denominator) and the dividends for the preferred shares saved, due to the conversion to common shares, will increase the income available to the common shareholders (numerator). Again, the assumption is that these outstanding convertible securities would have converted to common shares since the beginning of the period, using the *if-converted method*. For both types of securities, the income (numerator) and number of shares (denominator) are affected, but are they dilutive? Two steps are needed to determine this:

a. First, calculate the individual EPS effect on income (numerator) and number of shares (denominator) for each type of convertible security. If the individual EPS effect is less than the basic EPS calculated earlier, it is dilutive. If the individual EPS effect is more than the basic EPS, it is anti-dilutive and can be excluded from the subsequent calculations.
b. Second, rank the dilutive securities from most to least dilutive and complete the diluted EPS calculation as shown in the example below.

For example, Ogdell Co. has the following convertible debt and equity securities:

Bonds payable, 3.2% annually, 20-year amortization, due 2035,	
issued at par, each $1,000 bond is convertible into 30 common shares	400,000
Bonds payable, 2.5% annually, 15-year amortization, due 2030,	
issued at par, each $1,000 bond is convertible into 23 common shares	300,000
Class A: $3 cumulative, convertible, preferred shares; authorized, 20,000	
issued and outstanding, 10,000 shares, each share is convertible	
into three common shares	800,000

Ogdell Co.'s income tax rate is 27%. Preferred dividends were not declared in the current year.

Solution:

Calculate the individual EPS effect on income (numerator) and number of shares (denominator) for each type of convertible security and compare each to the basic EPS amount. If the individual EPS effect for each security is *less than* the basic EPS, it is dilutive. If the individual EPS is *more than* the basic EPS, it is anti-dilutive and can be excluded from the subsequent calculations.



For the 3.2% convertible bonds, the calculation above assumes that interest will no longer be paid if the bond is converted to common shares. The effect of the interest expense savings on net income would be:



The increase in common shares if converted would be:



The individual EPS effect compared to basic EPS would be:

compared to basic EPS of $0.9556 and is, therefore, dilutive. This security will be included in the overall diluted EPS calculation illustrated in Step 3 below.

The same calculation is done for the 2.5% convertible bonds. The individual EPS effect is $0.7935, which is less than the basic EPS of $0.9556, and is, therefore, dilutive.

For the convertible preferred shares, the calculation above assumes that the dividends will no longer be paid if the preferred shares are converted into common shares. The effect of the dividends saved will increase the net income available to common shareholders because that portion of net income no longer has to be set aside, as done in the basic EPS calculation illustrated earlier. Below is the calculation of the individual effects of the preferred shares using the if-converted method:

, resulting in additional income available to common shareholders. Note that there is no tax effect on dividends.

The increase in common shares if converted would be:

The individual EPS effect compared to basic EPS would be:

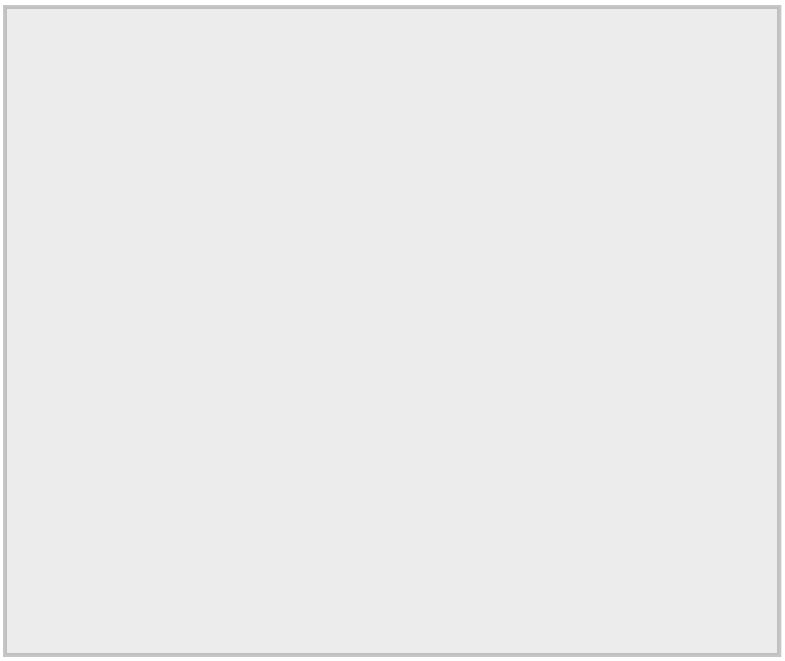
which is more than the basic EPS of $0.9556 and is, therefore, anti-dilutive. This security will be excluded from the diluted EPS calculation illustrated in Step 3 below.

Both convertible bonds are dilutive and are ranked from most to lease dilutive as follows:

3.2% bonds	$0.7787	#2, ranked most dilutive after options and contingent shares
2.5% bonds	$0.7935	#3, ranked next most dilutive after options and contingent shares

Step 3: Consolidating the results – complete a diluted EPS schedule and report the results.

Starting with basic EPS, input each of the dilutive securities in ranked order starting with options, warrants, and contingently issuable securities (which are the most dilutive). Subtotal the diluted EPS calculation for each type of security to ensure that each continues to be dilutive when included in the overall diluted EPS calculation. Any securities that are no longer contributing to the dilutive EPS are removed, and the remaining securities are dilutive. This process is shown in the dilutive EPS schedule below:



Note that the dilutive EPS starts at $0.9536 because of the options and contingently issuable shares. It subsequently decreases to $0.9476 for the next most dilutive 3.2% convertible bonds, and finally it decreases once more to $0.9446 for the third-ranked 2.5% convertible bond. This means that each of the securities continues to contribute to the dilutive EPS and should be kept in the schedule. As previously stated, and important to remember, if any of the securities cause the diluted EPS subtotal to increase, it must be removed from the calculation as it is no longer dilutive.

Carrying out these steps in the correct sequence is critical to ensure that the securities reported as dilutive continue to have a dilutive effect throughout the entire diluted EPS calculation.

The final diluted EPS amounts are disclosed on the face of the income statement and rounded to the nearest two decimals:

Earnings per share:	**Basic**			**Diluted**	
Income from continuing operations	$	0.96		$	0.94
Loss from discontinued operations, net of tax*		(0.06)			(0.06)
Net income	$	0.90		$	0.88

* Basic – Discontinued operations:

Diluted – Discontinued operations:

Companies can choose to disclose EPS – discontinued operations in the notes to the financial statements.

20.2: Basic and Diluted Earnings per Share- A Review is shared under a not declared license and was authored, remixed, and/or curated by LibreTexts.

20.3: Other Issues

Convertible securities and other dilutive instruments are not always outstanding throughout the entire current reporting period. They can also be issued or converted during the current reporting period. These transactions can affect both basic and diluted EPS. Below are some different examples of convertible securities and other issues that can have an impact on the calculations for basic EPS or diluted EPS.

Type of Security and Description of Transaction	**Effect on EPS**
Convertible security or option is issued during the reporting period.	Basic EPS: If the security is preferred shares, the dividend entitlement (cumulative) or dividend declared (non-cumulative) will be subtracted from net income. Diluted EPS: Income and shares effects are prorated to reflect the duration from the issuance date of the convertible security to the end of the reporting period.
Convertible security or option is converted to common shares during the reporting period.	Basic EPS: The common shares issued will be included in the WACS calculation from the date of conversion to the end of the reporting period. Diluted EPS: Income and shares effects are prorated from the date that the security was converted backwards to the beginning of the reporting period. The shares issued for the actual conversion are already included in the basic EPS calculation.
Convertible security or option is either redeemed or its conversion rights expire during the reporting period.	Basic EPS: There is no effect regarding the redemption or expiration of conversion rights. Diluted EPS: If dilutive, the income and shares effects are prorated to reflect the duration from the beginning of the reporting period to the redemption or expiry date. For options, the shares effect would be prorated for any period during the current reporting period that they were in the money.
Convertible security has more than one conversion point in time.	Diluted EPS will be included in the diluted EPS calculation using the most dilutive alternative.
Convertible security cannot be converted until some future point in time.	Diluted EPS will be included in the diluted EPS calculations, if dilutive.
Convertible debt such as bonds issued at a discount or premium.	Diluted EPS will use the effective interest method to determine the income effect regarding the income expense saved.
Options that are repurchased from option holders by the company (of its own shares).	Diluted EPS will be excluded from the diluted EPS because the company would not purchase the options if it were not favourable for them to do so.
A company with a net loss from continuing operations.	Diluted EPS will be equal to basic EPS because the individual income and shares effects for the diluted calculations will result in a reduction in the net loss from continuing operations and will, hence, be anti-dilutive.

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20.4: Comprehensive Illustration

Yondif Ltd. is a publicly traded corporation that follows IFRS. It has a complex capital structure with convertible debt and equity securities. Below is selected information about long-term debt and equity instruments as at December 31, 2020:

Long-term debt:	
7% bonds, at face value, due April 1, 2033	$780,000
10-year, 8% convertible bonds, at face value	350,000
(Each $1,000 bond is convertible into 50 Class A Common shares, commencing	
August 1, 2020)	
Share capital:	
$8, convertible, cumulative, preferred shares; each preferred share	250,000
is convertible into 1 Class A common share, issued and outstanding, 12,500 shares	
Class A common shares, issued and outstanding, 122,500 shares	2,450,000
Options:	
1,000 employee stock options, issued on December 31, 2017, each	
exchangeable for 1 Class A common shares at a price of $18 per share any	
time prior to December 31, 2023.	
500 executive stock options, issued on December 31, 2017, each exchangeable	
for 1 Class A common share as follows:	
$20 per share prior to January 1, 2021	
$25 per share from January 1, 2021 to December 31, 2021	
$27 per share from January 1, 2022 to December 31, 2023	
Options expire on January 1, 2024	
Contingent shares:	
The company has an agreement with each of its five divisional managers to	
issue 500 Class A common shares on January 1, 2022, if the manager's	
respective division before-tax earnings for 2020 increases by more than 10%	
compared to the 2019 year-end reported before-tax earnings. To date,	
divisional earnings for three managers have met and surpassed the	
10% increase.	

Additional information:

1. Earnings (net income) for the year ended December 31, 2020, were $690,000. Included were discontinued operations of $210,000 loss, net of tax. Income tax rate was 20%.
2. The average market price for Class A common shares was $21.
3. Dividends were paid on the preferred shares annually and no dividends were in arrears.
4. On July 1, 2020, a 10% stock dividend was declared and issued to the Class A common shareholders. At the beginning of the year, the total number of common shares outstanding was 100,000.
5. On June 1, 2020, ten-year, 8% bonds, were issued at par for $600,000. Each $1,000 bond is convertible into 50 Class A common shares commencing August 1, 2020. Using the residual value method, the liability component's present value of cash flows for interest and principal at a market rate of 9% for non-convertible bonds was $561,494. The equity component was for the remainder of $38,506.
6. On August 1, 2020, $250,000 of the 8% convertible bonds were converted.

Basic Earnings per Share Calculation:

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting. An event is where the outstanding number of shares changes.

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event point where it initially occurs and backwards to the beginning of the fiscal year.

Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding of the Year	
1	January 1	Opening balance	100,000	1.1	6/12		55,000
	Jan 1 – Jul 1						
2	July 1	10% stock dividend					
	Jul 1 – Aug 1		110,000		1/12		9,167
3	August 1	12,500 shares issued					
	Aug 1 –						
	Dec 31		12,500				
			122,500		5/12		51,042
	Total WACS				12/12		115,209

	Income		WACS	Basic EPS
Net income from continuing operations				
( )	900,000			
Less preferred dividends				
( )	(100,000)			
Net income available to common shareholders	800,000		115,209	$6.94

Note that income from continuing operations of $900,000, as shown above, was not given in the question data. The amount must be derived by working backwards from the net income amount of $690,000, after discontinued operations and net of tax, for $210,000. If the discontinued operations had been stated in before-tax dollars, an additional calculation would be required to determine the net of tax amount, which is the amount deducted from income from continuing operations to arrive at net income. There were no shares issued in 2020 due to contingent shares. However, the contingent shares disclosed by the company may be dilutive, which will be tested in the diluted EPS calculations in the next section.

Diluted Earnings per Share Calculation:

Step 1: Identify and calculate the individual effects for all potentially dilutive options, warrants, and other contingent commitments.

	Income (Numerator)		Number of Shares (Denominator)		Individual EPS Effect
Basic EPS (from continuing operations)	$800,000		115,209		$6.94
Options:					
Employee stock options:					
Shares issued @ $18 per share			1,000		
Shares repurchased			(857)		
			143		
Executive stock options:					
Shares issued @ $20 per share			500		
Shares repurchased (			(476)		
			24		
Contingent shares:					
			1,500		
Subtotal	$800,000		116,876		$6.84

The employee stock options have an exercise price of $18 per share, compared to the average market price of $21 per share. The options are in the money because the exercise price is less than the average market price and option holders will be motivated to exercise the options and purchase the common shares. As discussed previously, if the options were not in the money, they would be excluded from the dilutive calculation.

The executive stock options are in the money at the exercise price of $20 per share, so these will be included in the diluted EPS calculation as shown above.

Also, a portion of the contingently issuable shares is to be included in the dilutive calculation because three of the managers have already met the 10% increase.

Together, the options and contingently issuable shares are ranked number one, as the most dilutive securities as a group.

Step 2: Calculate the individual effect of each potentially dilutive convertible security and rank them from most to least dilutive.



Note that the 7% bond is not convertible, so it is not dilutive. Also, a portion of the 8% convertible bonds was converted on August 1. Note that the basic EPS included the 12,500 converted shares from August 1 to December 31, or for the five months remaining after conversion. The diluted calculation for the interest saved and the additional shares calculates the effect from the August 1 conversion date backwards to June 1 purchase date, or for two months. The remainder of the 8% convertible bonds is calculated backwards from the purchase date of June 1 to year-end, since they have not been converted.

Ranking the securities above from most to least dilutive results in the 8% converted bonds being ranked as the second most dilutive after options and contingently issuable shares. The preferred shares are not dilutive at an individual EPS amount of $8.00 per share, compared to the basic EPS of $6.94.

Step 3: Consolidating the results – complete a diluted EPS schedule and report the results.

	Income (Numerator)		Number of Shares (Denominator)		Individual EPS Effect
Basic EPS (from continuing operations)	$800,000		115,209		$6.94
Options:					
Employee stock options:					
Shares issued @ $18 per share			1,000		
Shares repurchased			(857)		
			143		
Executive stock options:					
Shares issued @ $20 per share			500		
Shares repurchased			(476)		
			24		
Contingent shares:					
			1,500		
Subtotal	$800,000		116,876		$6.84
8% bonds converted August 1	2,807				
Additional shares			2,083		
Subtotal	802,807		118,959		6.75
8% bonds - remaining	13,757				
Additional shares			10,208		
Diluted EPS	$816,564		129,167		$6.32

The dilutive securities are input into the schedule in ranked order from most to least dilutive. A subtotal diluted EPS is calculated between each entry to ensure that each security continues to contribute to the dilutive EPS. If any of the securities caused the diluted EPS subtotal to increase, it must be removed from the calculation, as it is no longer dilutive.

The final diluted EPS amounts are to be disclosed on the face of the income statement and rounded to the nearest two decimals. However, as stated previously, companies can choose to disclose the EPS for discontinued operations in the notes to the financial statements. Below is an example of the disclosure on the face of the income statement:

Earnings per share:	**Basic**			**Diluted**	
Income from continuing operations	$	6.94		$	6.32
Loss from discontinued operations, net of tax*		(1.82)			(1.63)
Net income	$	5.12		$	4.69

* Basic – Discontinued operations:

Diluted – Discontinued operations:

Restatement of EPS

Examples of when EPS is to be retrospectively restated include when a prior period error is discovered, when there is a change in accounting policy (voluntarily or in response to a change in accounting standard), when a stock dividend/split is declared, or when a subsequent event occurs. Subsequent events can occur after the fiscal year, but before the financial statement have been issued. Examples include an issuance, conversion or redemption of convertible securities, options or warrants, or a stock dividend or split declared after the fiscal year but before the financial statements have been issued. Restatements require extensive disclosures, which are discussed in a later chapter.

A video is available on the Lyryx web site. Click Here to view the video.

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20.5: Earnings per Share Analysis

Basic EPS is an indicator that uses historic financial data, such as net income, and an average based on actual shares outstanding from the reporting period just ended. Over time, EPS trends can help shareholders and potential investors to determine if performance is on an upward or a downward swing. These trends can assist in forecasting future performance based on what happened historically.

Diluted EPS is an indicator that is forward-looking. It quantifies the impact that exercising options, and potentially convertible securities, will have on current earnings available to common shareholders.

Price-earnings ratio (P/E) is an important measure of company's performance. It measures how investors evaluate a company's future performance and is calculated as:



If the market price for ABC Ltd. as at December 31, 2018, and 2019, was $43.29 and $45.86, respectively. Using the EPS of $2.98 from the company's financial statements, the price-earnings ratios, using the market prices as high and low figures, are calculated as follows:

Low: 		High: 

The P/E ratio indicates the dollar amount an investor can expect to invest in a company to receive one dollar of that company's earnings. Therefore, the P/E is sometimes referred to as the multiple, because it shows how much investors are willing to pay per dollar of earnings. Using the figures from the calculations above, if a company was currently trading at a multiple (P/E) of between 14.5 and 15.4, the interpretation is that an investor would be willing to pay between $14 and $15 for $1 of current earnings.

In general, a high P/E ratio suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E. It could also mean that the company is currently overvalued by the market, which may lead to a market correction of the stock price in the future. Conversely, a low P/E ratio can indicate that a company may currently be undervalued.

Like any other ratios or analytical tools, basic and diluted EPS and the price-earnings ratio are not meaningful unless compared with something else, such as a company's historical trend. Also, EPS based on income from continuing operations is a more relevant performance indicator and forecasting tool than EPS on net income, which may include discontinued operations.

EPS as a single measure obscures important information about the company's selection of accounting policies, estimates, and valuations. As illustrated in the diluted EPS calculation above, the calculations for EPS are complex and can be manipulated like any other analytical tool. For this reason, EPS should be only one assessment tool of many that would comprise an informed analysis of a company's performance and overall health.

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20.6: IFRS/ASPE Key Differences

Item	ASPE	IFRS
		IAS 33
Reporting requirement for basic and diluted earnings per share.	Not required	Publicly traded companies are to present basic and diluted earnings per share. Privately held companies choosing to follow IFRS are not required to report earnings per share unless they are in the process of going public.

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20.7: Chapter Summary

LO 1: Describe earnings per share (EPS) and their role in accounting and business.

Earnings per share measure how much income individual companies earn for each of its common shareholders. EPS is a per share method of describing net income (earnings), making EPS a good metric for investors. EPS is also a key metric used by stock market analysts to measure if the reported EPS is higher or lower than the analysts' forecasted EPS. This movement affects the market price per share for this stock. Management can reinvest profits in hopes of making more profits or they can pay a dividend or a share buy-back to the investors to provide a return on the shareholders' investment. EPS is the metric used to determine the magnitude of this return.

LO 2: Describe basic and diluted earnings per share in terms of an overview.

Basic EPS is a ratio that is calculated as net income available to common shareholders after preferred shares dividends, if applicable, divided by the weighted average number of common shares outstanding. A simple capital structure means that there are no debt or equity securities convertible into common shares. If there are, the company is said to have a complex capital structure. Diluted EPS is a worst-case scenario measurement where the effect on earnings per share is measured assuming that all potential additional common shares for convertible securities and options have already been issued. Publicly traded companies must report earnings per share while companies that follow ASPE, or companies that follow IFRS but are not publicly traded, do not. If the publicly traded company has a complex capital structure, they must report both basic and diluted EPS on the face of the income statement. EPS must also be broken down further to report EPS, discontinued operations, net of tax, if applicable.

LO 2.1: Calculate basic earnings per share.

To calculate basic EPS, net income available to common shareholders after preferred shares dividends is calculated for the numerator, and a weighted average number of common shares outstanding is calculated for the denominator. For the numerator, only net income, and not OCI, is relevant. The preferred shares dividends amount is subtracted from net income to determine the income available to common shareholders. The cumulative preferred shares dividend amount is based on dividend entitlement while the non-cumulative preferred shares dividends amount is based on dividend declared in the current reporting period. For the denominator, the weighted average common shares outstanding (WACS) is affected by common shares issued or repurchased as well as any stock dividends and stock splits, both of which are restated retroactively back to the beginning of the year. All these are further prorated by the number of months that they have been outstanding during the year. There are three steps that, if followed, will simplify this calculation.

LO 2.2: Calculate diluted earnings per share and report the final results.

Diluted EPS starts with the basic EPS numerator, denominator, and ratio. There are four steps that, if followed, will simplify this calculation. In basic terms, options, warrants, and contingent shares use the treasury stock method to determine their respective denominator amounts. For convertible securities such as convertible bonds and convertible preferred shares, the if-converted method is used to determine both the income effect (numerator) and the shares effect (denominator). All dilutive securities are, at this point, ranked from most to least dilutive and the diluted EPS is calculated using a subtotal between each security to ensure that each one continues to contribute a dilutive factor. Any that do not are removed.

The final results of the basic and diluted EPS from continuing operations, discontinued operations, and net income are disclosed. Basic and diluted EPS from continuing operations and net income must be disclosed on the face of the income statement while EPS for discontinued operations can be disclosed in the notes to the financial statements.

LO 3: Describe the issues that can affect both basic and diluted earnings per share.

There are several issues with regard to EPS. For example, convertible securities, options, and warrants can be issued, converted, redeemed, or can expire during the reporting period. Convertible securities can also have more than one conversion point, or may not be convertible until sometime in the future. Also, convertible bonds can be issued at a discount or at a premium, options can be repurchased from shareholders, or a company may experience a net loss. All these factors may affect basic and diluted EPS.

LO 4: Calculate basic and diluted earnings per share in terms of a comprehensive illustration.

A comprehensive step-by-step illustration is presented which applies the concepts as summarized above.

LO 5: Identify and explain how earnings per share and price-earnings ratio are used to analyze company performance from an investor perspective.

Basic EPS uses historical data to be useful and relevant while diluted EPS is more forward-looking and quantifies the impact that exercising options and potentially convertible securities has on current earnings available to common shareholders. Price-earnings ratio is a percentage-based measure of company performance and is an indicator of the share price that an investor can expect to pay to invest in the company. Ratios must be comparable to something, such as historical trends or industry standards, to be meaningful. As EPS is expressed as a single ratio figure it can obscure important information about a company's selection of accounting policies, estimates, and valuations. Like any other ratio, EPS can be subject to manipulation and, therefore, should only be one of a more comprehensive set of ratios and other types of analysis techniques used to evaluate company performance.

LO 6: Explain the difference between ASPE and IFRS regarding earnings per share.

ASPE companies and non-publicly traded IFRS companies are not required to report EPS figures. However, publicly traded companies must report basic EPS and diluted EPS, if applicable.

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20.8: References

Boorstin, J. (2015, July 27). *Facebook vs. Twitter: A tale of two very different social stocks*. CNBC. Retrieved from http://www.cnbc.com/2015/07/27/facebook-vs-twitter-a-tale-of-two-very-different-social-stocks.html

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20.9: Exercises

20.1

Everest Corp. had 100,000 common shares outstanding on December 31, 2020. During 2021 the company:

- issued 6,000 shares on March 1
- retired 2,000 shares on July 1
- distributed a 15% stock dividend on October 1
- issued 10,000 shares on December 1

For 2021, the company reported net income of $310,000 after a loss from discontinued operations, before tax, of $35,000. The tax rate is 25%. The company also issued a 2-for-1 stock split on February 1, 2022. The company issued its 2021 financial statements on February 28, 2022.

Required:

a. Calculate earnings per share for 2021.
b. Explain why Everest Corp.'s reporting of EPS is useful to company shareholders.
c. Explain the effect that a stock dividend or split has on the price-earnings ratio.

20.2

Mame Ltd. had 475,000 common shares outstanding on January 1, 2021. During 2021 the company:

- issued 25,000 common shares on May 1
- declared and distributed a 10% stock dividend on July 1
- repurchased 15,000 of its own shares on October 1

Required:

a. Calculate the WACS outstanding as at December 31, 2021.
b. Assume that the company had a 1-for-5 reverse stock split instead of the 10% stock dividend on July 1. Calculate the WACS as at December 31, 2021.

20.3

Calvert Corp. had 500,000 common shares outstanding on January 1, 2021. During 2021 the company:

- issued 180,000 common shares on February 1
- declared and distributed a 10% stock dividend on March 1
- repurchased 200,000 of its own shares and retired them on May 1
- issued a 3-for-1 stock split on June 1
- issued 60,000 common shares on October 1

The company's year-end is December 31.

Required:

a. Calculate the WACS outstanding as at December 31, 2021.
b. Assume that the company had net income of $3,500,000 during 2021. In addition, it had 100,000 of 8%, $100 par, non-convertible, non-cumulative preferred shares outstanding the entire year. No dividend was declared or paid for the preferred shares in 2021. Calculate EPS using the WACS from part (a).
c. Assume now that the preferred shares were cumulative. Calculate EPS for 2021.
d. Assume the data from part (b), except that net income included a loss from discontinued operations, net of tax, of $432,000. Calculate EPS for 2021.
e. Why does the basic EPS denominator use the weighted average number of shares instead of just the ending balance of shares?

20.4

Switzer Ltd. reported net income of $385,000 for the year ended December 31, 2020, and had 700,000 common shares outstanding throughout the fiscal year. On July 1, 2020, the company issued 3-year, 4% convertible bonds at par for $800,000. Each $1,000

bond is convertible into 100 common shares. Using the residual value method, the liability component's present value of cash flows for interest and principal at a market rate 6% for non-convertible bonds was $757,232. The equity component was for the remainder of $42,768. Switzer Ltd.'s tax rate is 25%.

Required:

a. Calculate the 2020 earnings per share and complete the required disclosures, if any.
b. Calculate the earnings per share with required disclosures, if net income was $280,000 in 2020.

20.5

Below is data for Hurrington Inc.:

Net income		$	4,500,000
$6, cumulative preferred shares, issued and			4,000,000
outstanding 40,000 shares		$	4,000,000
Common shares activity for 2021:			
Common shares, January 1, 2021			550,000
Mar 1 – issued			50,000
Jun 1 – repurchased			100,000
Aug 1 – 2-for-1 stock split			

Additional information:

All dividends were paid, and no dividends were in arrears as at December 31, 2021. Year-end is December 31.

Required:

a. Calculate EPS for 2021.
b. Assume that dividends on preferred shares were two years in arrears, and that dividends were not declared or paid in 2021. Calculate the EPS for 2021.
c. Assume that preferred shares are non-cumulative, and all dividends paid are up to date. Calculate the EPS for 2021.
d. Assume that preferred shares are non-cumulative, and dividends were not paid in 2021. Calculate the EPS for 2021.
e. Discuss the effect that a stock split would have on the company's market price per share.
f. Discuss why the weighted average number of common shares must be adjusted for stock dividends and stock splits.

20.6

Somos Novios Co. reported net income of $350,000 in 2021 and had 200,000 common shares outstanding throughout the year. Also outstanding throughout the year were 45,000 options for option holders to purchase common shares at $10 per share at any time. The average market price for the common shares during 2021 was $11 per share.

Required:

a. What type of capital structure does Somos Novios Co. have and why? What would be the required EPS disclosures for this company?
b. Calculate EPS for 2021, including the required disclosures.
c. Assume that the average market price for the common shares during 2021 was $9. Calculate EPS for 2021, including the required disclosures.

20.7

Diamante Inc. purchased 20,000 call options during the year. The options give the company the right to buy back its own common shares for $10 each. The average market price was $13 per share.

Required:

a. Calculate the incremental shares outstanding for Diamante Inc.
b. Assume, instead, that Diamante Inc. wrote 20,000 put options that allow the option holder to sell common shares back to the company for $14 per share. Market price per share is $13. Calculate the incremental shares outstanding for Diamante Inc. How would the answer change if the exercise price was $12 instead of $14?
c. Assume that Diamante Inc. purchased 20,000 put options that allow the company to sell its own common shares for $11 each. Market price per share is $13. How should the options be treated when calculating diluted EPS?

20.8

Etnik Ltd. reported net income for the year ended December 31, 2021, of $400,000 and there were 60,000 common shares outstanding during the entire year. Etnik also has two securities outstanding during 2021:

- 4%, convertible bonds, purchased at par for $100,000. Each $1,000 bond is convertible into 25 common shares.
- $20, cumulative, convertible $100 par value preferred shares; each preferred share is convertible into 10 common shares. Total paid: $50,000.

Both convertible securities were issued in 2017 and there were no conversions during 2021. Using the residual value method, the liability component's present value of cash flows for interest and principal at a market rate 5% for non-convertible bonds was $97,277. The equity component was for the remainder of $2,723. Etnik Ltd.'s tax rate is 24%.

Required:

a. Calculate EPS, including required disclosures, for 2021.
b. Assume that Etnik Ltd. also reported a discontinued operations gain before tax of $20,000. Calculate EPS, including required disclosures for 2021.

20.9

Renato Inc. has the following information available as at December 31, 2021:

Net income		$	350,000
Average market price of common shares during 2021			
(adjusted for the stock dividend)		$	18
Income tax rate for 2021			25%
6%, convertible bonds, issued at par on May 1, 2021,			
convertible into a total of 8,000 common shares		$	80,000
Stock options for 10,000 shares, exercisable at the option			
price of $16 (adjusted for the stock dividend)			
$2, cumulative convertible preferred shares, 1,000 shares,			
convertible in 2023 into a total of 10,000 common			
shares (adjusted for the stock dividend)			
Common shares transactions for 2021:			
January 1	Common shares outstanding		70,000
March 1	Issuance of common shares		30,000
June 1	10% stock dividend		10,000
November 1	Repurchase of common shares		(20,000)

Additional information:

Options and preferred shares were outstanding throughout all of 2021.

Required:

Calculate and disclose earnings per share for 2021. No dividends were in arrears and preferred dividends were paid in 2021. For simplicity, assume that the number of shares for the convertible bonds have already been adjusted for the stock dividend and ignore the requirement to record the debt and equity components of the bonds separately.

1. IAS 33.45 (CPA Canada, 2016) states that the average market price is to be used in the following manner: "For the purpose of calculating diluted earnings per share, an entity shall assume the exercise of dilutive options and warrants of the entity. The assumed proceeds from these instruments shall be regarded as having been received from the issue of ordinary shares at the average market price of ordinary shares during the period. The difference between the number of ordinary shares issued and the number of ordinary shares that would have been issued at the average market price of ordinary shares during the period shall be treated as an issue of ordinary shares for no consideration" (CPA Canada, 2016, Accounting, IAS 33.45).

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CHAPTER OVERVIEW

Chapter 21: Statement of Cash Flows

The Importance of Cash Flow – For Better, For Worse, For Richer, For Poorer...

A business is a lot like a marriage. It takes work to make it succeed. One of the keys to business success is managing and maintaining adequate cash flows. In the field of financial management, there is an old saying that *revenue is vanity, profits are sanity, but cash is king*. In other words, a firm's revenues and profits may look spectacular, but this does not guarantee there will be cash in the bank. Without cash, a business cannot pay its bills and it will ultimately not survive.

Let's take a look at the distinctions between revenue and profits, and cash, using a numeric example for a new business:

Income Statement				Cash Flows		
Revenue*	$	1,000,000		Revenue (cash received)	$	400,000
Cost of goods sold**		(500,000)		Cost of goods sold (paid in cash)		(300,000)
Gross profit		500,000		Net cash		100,000
Operating expenses***		200,000		Operating expenses (paid in cash)		90,000
Net income/net profit	$	300,000		Net cash	$	10,000

* Sales of $400,000 were paid in cash

** Purchases of $300,000 were paid in cash

*** Operating expenses of $90,000 were cash paid

Revenue is reported in the income statement as $1 million which is a sizeable amount, but only $400,000 was cash paid by customers. (The rest is reported as accounts receivable.) Gross profit is reported in the income statement as $500,000. This is also a respectable number, but only $100,000 translates into a positive cash flow, because some of the inventory purchases were paid in cash. (The rest of the inventory is reported as accounts payable.) The company must still pay some of its operating expenses, leaving only $10,000 cash in the bank.

When investors and creditors review the income statement, they will see $1 million in revenue with gross profits of one-half million or 50%, and a respectable net income of $300,000 or 30% of revenue. They could conclude that this looks pretty good for the first year of operations and incorrectly assume that the company now has $300,000 available to spend.

However, lurking deeper in the financial statements is the cash position of the company–the amount of cash left over from this operating cycle. Sadly, there is only $10,000 cash in the bank, so the company cannot even pay its remaining accounts payable in the short term. So, how can management keep track of its cash?

The statement of cash flows is the definitive financial statement to bridge the gaps between revenues and profits, and cash. Therefore, it is vital to understand the statement of cash flows.

Learning Objectives

After completing this chapter, you should be able to:

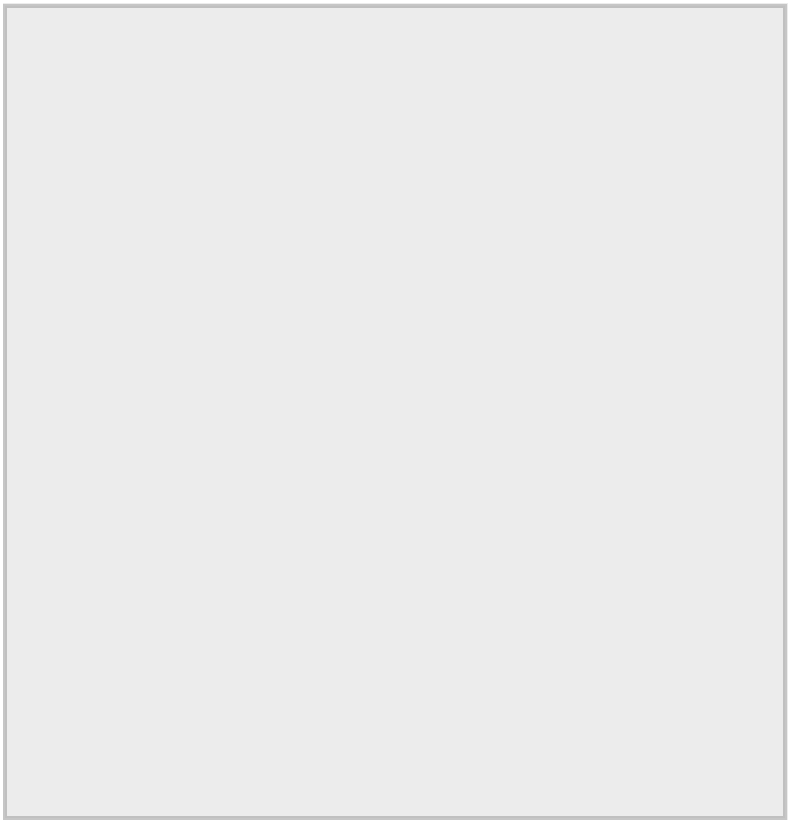
- Describe the statement of cash flows (SCF) in accounting and business.
- Explain the purpose of the statement of cash flows and the two methods used.
- Describe the statement of cash flows using the *direct method* and explain the difference in format from the *indirect method*.
- Describe how the results from the statement of cash flows are interpreted.
- Describe the required disclosures for the statement of cash flows.

- Describe the types of analysis techniques used for the statement of cash flows.
- Review and understand a comprehensive example of an indirect and direct statement of cash flows that includes complex transactions from intermediate accounting courses.
- Discuss specific items that affect the statement of cash flows.
- Summarize the differences between ASPE and IFRS regarding reporting and disclosure requirements of the statement of cash flows.

Introduction

The statement of cash flows is a critical financial report used to assess a company's financial status and its current cash position, as uniquely demonstrated in the opening story about revenue and profits versus cash. As cash is generally viewed by many as the most critical asset to success, this chapter will focus on how to correctly prepare and interpret the statement of cash flows.

Chapter Organization



21.1: Overview
21.2: Indirect Method Review
21.3: Direct Method
21.4: Interpreting the Results
21.5: Disclosures
21.6: Analysis
21.7: Comprehensive Example- Both Methods
21.8: Specific Items
21.9: IFRS/ASPE Key Differences

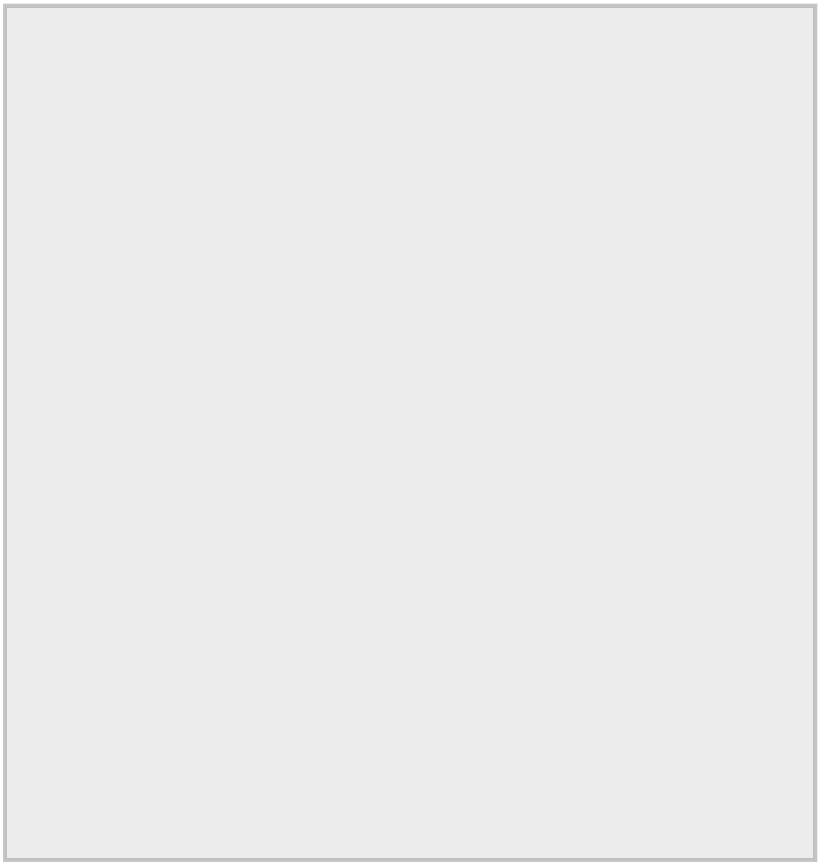
21.10: Chapter Summary
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21.1: Overview

As discussed in previous chapters, shareholders, potential investors, and creditors use published financial statements to assess a company's overall financial health. Recall how the five core financial statements link together into a cohesive network of financial information. One of these links is the match between the ending cash balance reported in the statement of cash flows (SCF) and the ending cash balance in the statement of financial position (IFRS), or balance sheet (ASPE).

For example, below is the statement of cash flows for the year ended December 31, 2020, and the statement of financial position (SFP) for Wellbourn Services Ltd. at December 31, 2020.



Note how Wellbourn's ending cash balance of $135,500, from the statement of cash flows for the year ended December 31, matches the ending cash balance in the SFP on that date. This is a critical relationship between these two financial statements. The SFP provides information about a company's resources (assets) *at a specific point in time*, and whether these resources are financed mainly by debt (current and long-term liabilities) or equity (shareholders' equity). The statement of cash flows identifies how the company utilized its cash inflows and outflows *over the reporting period* and, ultimately, ends with its current cash and cash equivalents position at the statement of financial position date. As well, since the statement of cash flows is prepared on a cash basis, it excludes non-cash accruals like depreciation and interest, making the statement of cash flows harder to manipulate than the other financial statements.

Since the statement of cash flows separates cash flows into those resulting from ongoing operating activities versus investing and financing activities, investors and creditors can quickly see where the main sources of cash originate. If cash inflows are originating mainly from operating activities, then this provides insight into a company's ability to generate sufficient cash to maintain its operations, pay its debts, and make new investments without the need for external financing. If cash sources originate more from investing activities, then this means that the company is likely selling off some of its assets to cover its obligations. This may be appropriate if these assets are idle and are no longer generating profit; otherwise it may suggest a downward spiral resulting in plummeting profits. If cash sources are originating mainly from financing activities, then the company is likely sourcing more cash from debt or from issuing shares (equity). Higher debt means that more cash reserves are needed to make the principal and interest

payments. Higher equity means more shares issued and more dividends to be paid out, not to mention the dilution of existing shareholders investments. Either scenario is cause for concern for both shareholders and creditors.

Even if the majority of cash inflows are mainly from operating activities, if there is a large difference between net income and the total cash inflows from operating activities then that is a warning sign that shareholders and creditors should be digging deeper. This is because a company's quality of earnings, and hence its reliability, relates to how closely reported net income corresponds to net cash flows. For example, if reported net income is consistently close to, or less than, net cash operating activities, the company's earnings are considered to be high quality and, therefore, reliable. Conversely, if reported net income is significantly more than net cash flows from operating activities, then reported net income is not matched by a corresponding increase in cash, creating a need to investigate the cause. After reviewing the statement of cash flows and the balance sheet, the bottom line is: if debt is high and cash balances are low, the greater the risk of business failure.

This chapter will explain how to prepare the statement of cash flows using either the direct or indirect method, and how to interpret the results.

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21.2: Indirect Method Review

The statement of cash flows using the indirect method has been discussed in most introductory accounting courses. Since the statement of cash flows can be challenging, a review of the basic concepts is presented below.

The purpose of the statement of cash flows is to provide a means "to assess the enterprise's capacity to generate cash and cash equivalents, and to enable users to compare cash flows of different entities" (CPA Canada, 2016, Accounting, Part II, Section 1540.01 and IAS 7.4). This statement is an integral part of the financial statements for three reasons. First, this statement helps readers to understand where these cash flows in (out) originated from during the current year. This helps management, shareholders, and creditors to assess a company's liquidity, solvency, and financial flexibility. Second, these historic cash flows in (out) can be used to predict future company performance. Third, the statement of cash flows can shed light on a company's quality of earnings and if there may be a disconnect between reported earnings and net cash flows from operating activities, as explained earlier.

Two methods are used to prepare a statement of cash flows, namely the indirect method and the direct method. The indirect method was discussed in previous accounting courses and will be reviewed again in this chapter. The direct method introduced in this chapter may be new for many students. Both methods organize the reported cash flows into three activities: operating, investing, and financing. As discussed next, the difference between the two methods occurs only in the first section for operating activities.

The indirect method reports cash flows from operating activities into categories such as:

- Net income/loss is reported.
- A series of adjustments to net income/loss for non-cash items are reported in the income statement.
- Changes in each non-cash working capital account. The current portion of long-term debt, including lease obligations and dividends payable, are not considered to be working capital accounts. They are included with their respective account to which they relate. For example, the current portion of long-term debt or lease is included with its related long-term liability account. Dividends payable is included with its related retained earnings account.

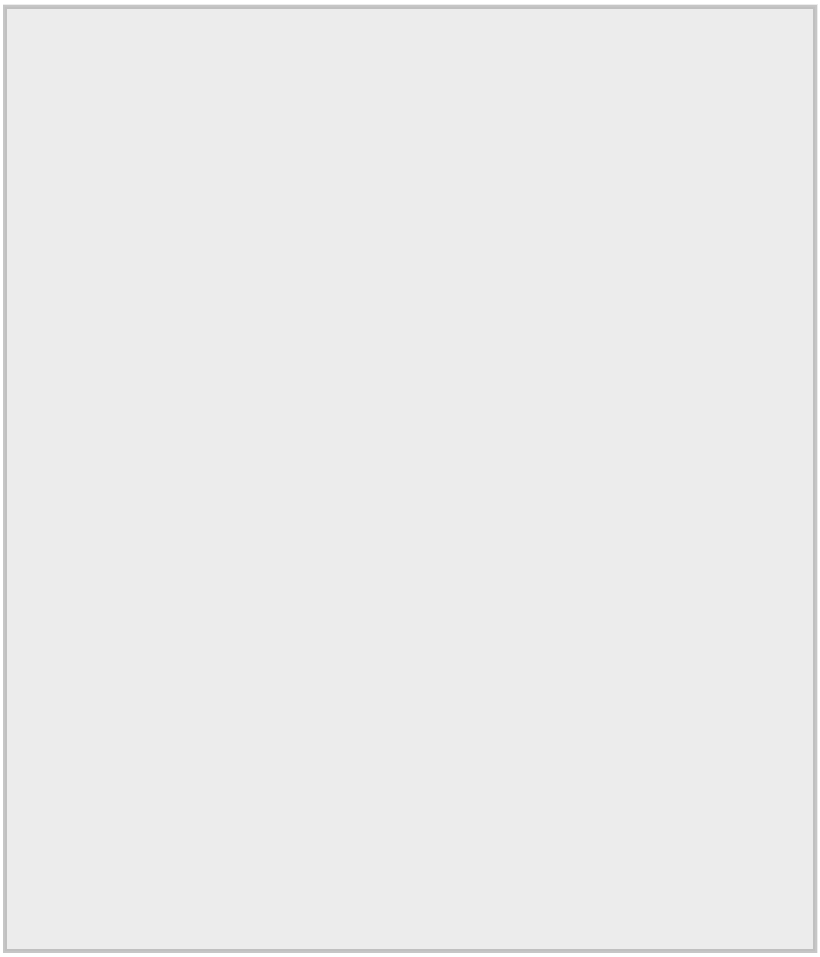
The direct method reports cash flows from operating activities into categories based on the nature of the cash flows, such as:

- cash received for sales
- cash paid for goods and services
- cash paid to or on behalf of employees
- cash received and paid for interest
- cash received and paid for dividends
- cash paid for income taxes

The statement of cash flows above for Wellbourn Services Ltd. is an example of a statement using the direct method. Note that the operating section line items using the direct method are based on the nature of the cash flows, whereas the indirect method line items are based on their connections with the income statement and working capital accounts.

There are some similarities between the two methods. For instance, the net cash flows from operating activities is the same for both methods, and the investing and financing activities are identical for both methods as well.

Below is an example of the format using the indirect method. Note the connections to the other financial statements.



20.2.1. Differences Between IFRS and ASPE

There are differences in some of the reporting items between IFRS and ASPE. For example, ASPE has mandatory disclosures as follows:

- cash dividends received and interest received or paid if reported in net income – operating section
- interest or cash dividends debited to retained earnings – financing section
- Cash paid income taxes are often reported separately but it is not a reporting requirement.

For IFRS, there are policy choices that, once made, should be applied consistently:

- interest received – choice of operating or investing section
- interest paid – choice of operating or financing section
- dividends received – choice of operating or investing section
- dividends paid – choice of operating or financing section
- cash paid income taxes – separately reported

For simplicity, this chapter will use the following norms for both IFRS and ASPE:

- interest received – operating section
- interest paid – operating section
- dividends received – operating section
- dividends paid – financing section
- income taxes paid – separately reported

As illustrated above, when using the indirect method, the sum of the non-cash adjustments to net income and changes to non-cash working capital accounts result in the total cash flows in (out) from operating activities. The other two activities for investing and

financing follow. Any non-cash transactions occurring in the investing or financing sections are not reported in a statement of cash flows. Instead, they are disclosed separately in the notes to the financial statements. Examples of non-cash transactions would be an exchange of property, plant, or equipment for common shares, or the conversion of convertible bonds payable to common shares and stock dividends. If the transaction is a mix of cash and non-cash, the cash-related portion of the transaction is reported in the statement of cash flows with a note in financial statements detailing the non-cash and cash elements. The final section of the statement reconciles the net change in cash flows of the three activities, with the opening and closing cash and cash equivalents balances taken from the balance sheet.

20.2.2. Preparing a Statement of Cash Flows: Indirect Method

Presented below is the balance sheet and income statement for Watson Ltd.

Watson Ltd.						
Balance Sheet						
As at December 31, 2020						
		2020			2019	
Assets						
Current assets						
Cash		$	307,500		$	250,000
Investments (Held for trading at fair value)			12,000			10,000
Accounts receivable (net)			249,510			165,000
Notes receivable			18,450			22,000
Inventory (at lower of FIFO cost and NRV)			708,970			650,000
Prepaid insurance expenses			18,450			15,000
Total current assets			1,314,880			1,112,000
Long term investments (Held to maturity at cost)			30,750			0
Property, plant, and equipment						
Land			92,250			92,250
Building (net)			232,000			325,000
			324,250			417,250
Intangible assets (net)			110,700			125,000
Total assets		$	1,780,580		$	1,654,250
Liabilities and Shareholders' Equity						
Current						

liabilities						
Accounts payable		$	221,000		$	78,000
Accrued interest payable			24,600			33,000
Income taxes payable			54,120			60,000
Unearned revenue			25,000			225,000
Current portion of long-term notes payable			60,000			45,000
Total current liabilities			384,720			441,000
Long-term notes payable (due June 30, 2025)			246,000			280,000
Total liabilities			630,720			721,000
Shareholders' equity						
Paid in capital						
Preferred, ($2, cumulative, participating – authorized						
issued and outstanding, 15,000 shares)			184,500			184,500
Common (authorized, 400,000 shares; issued and						
outstanding (O/S) 250,000 shares for 2020);						
(2019: 200,000 shares issued and O/S)			862,500			680,300
Contributed surplus			18,450			18,450
			1,065,450			883,250
Retained			84,410			50,000

earnings						
			1,149,860			933,250
Total liabilities and shareholders' equity		$	1,780,580		$	1,654,250

Watson Ltd.			
Income Statement			
For the Year Ended December 31, 2020			
Sales		$	3,500,000
Cost of goods sold			2,100,000
Gross profit			1,400,000
Operating expenses			
Salaries and benefits expense			800,000
Depreciation expense			43,000
Travel and entertainment expense			134,000
Advertising expense			35,000
Freight-out expenses			50,000
Supplies and postage expense			12,000
Telephone and internet expense			125,000
Legal and professional expenses			48,000
Insurance expense			50,000
			1,297,000
Income from operations			103,000
Other revenue and expenses			
Dividend income			3,000
Interest income from investments			2,000
Gain from sale of building			5,000
Interest expense			(3,000)
			7,000
Income from continuing operations before income tax			110,000

Income tax expense			33,000
Net income		$	77,000

Additional information:

- The trading investment does not meet the criteria to be classified as a cash equivalent (see section 20.8 Specific Items for a discussion on cash equivalents) and no purchases or sales took place in the current year.
- An examination of the intangible assets sub-ledger revealed that a patent had been sold in the current year. The intangible assets have an indefinite life.
- No long-term investments were sold during the year.
- No buildings or patents were purchased during the year.
- There were no other additions to the long-term note payable during the year.
- Common shares were sold for cash. No other share transactions occurred during the year.
- Cash dividends were declared and paid.
- The note receivable maturity date is January 31, 2021, and was for a sale.

The statement of cash flows is the most complex statement to prepare. This is because preparation of the entries requires analysis of multiple accounts. Moreover, the transactions resulting in cash inflows are to be differentiated from the transactions resulting in cash outflows for each account. Preparing a statement of cash flows is made much easier if specific sequential steps are followed. Below is a summary of those steps.

- Complete the statement headings.
- Operating activities section – record the net income/(loss).
- Adjust out any non-cash line items reported in the income statement to remove them from the statement of cash flows. Examples of these are depreciation, amortization, and most gains or losses such as gains/losses from the sale of assets, gain/loss from redemption of debt, impairment losses, and fair value changes reported in net income.
- Record the description and change amount for each non-cash working capital account (current assets and current liabilities) except for the current portion of long-term debt line item since it is not a working capital account. Subtotal the operating activities section.
- Investment activities section – using T-accounts or other techniques, determine the change for each non-current (long-term) asset account. Analyze and determine the reason for the change(s). Record the reason and change amount(s) as cash inflows or outflows.
- Financing activities section – add back to long-term debt any current portion identified in the SFP/BS for both years, if any. Using T-accounts, or other techniques, determine the change for each non-current (long-term) liability and equity account. Analyze and determine the reason for the change(s). Record the reason and change amount(s) as cash inflows or outflows. One anomaly occurs with pension benefit liability. This liability is non-current, but it is not a financing activity as its nature is to benefit employees. For this reason, any change in funding for the pension liability, even though classified as non-current, is to be reported in operating activities.
- Subtotal the three sections. Record the opening and closing cash, including cash equivalents, if any. Reconcile the opening balance plus the subtotal from the three sections to the closing balance to ensure that the accounts balance correctly.
- Complete any required disclosures.

Here is a summary of the steps above, labelled with a key word or phrase for you to remember:

1. **Headings**
2. **Record net income/(loss)**
3. **Adjust out non-cash items**
4. **Current assets and current liabilities changes**
5. **Non-current asset accounts changes**
6. **Non-current liabilities and equity accounts changes**
7. **Subtotal and reconcile**
8. **Disclosures**

Applying the Steps:

Step 1. Headings:

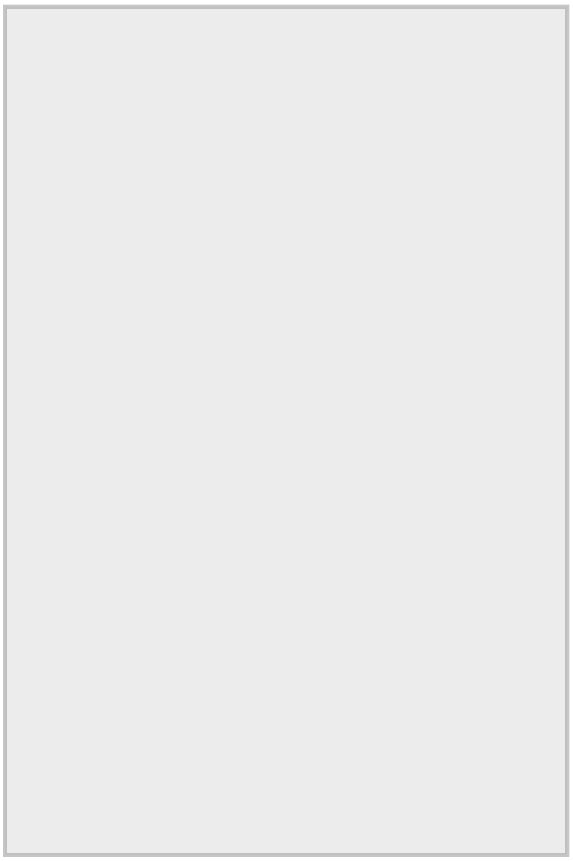
Watson Ltd.						
Statement of Cash Flows						
For the Year Ended December 31, 2020						
Cash flows from operating activities						
Net income (loss)						
Non-cash items (adjusted from net income):						
Net cash from operating activities						
Cash flows from investing activities						
Net cash from investing activities						
Cash flows from financing activities						
Net cash from financing activities						

Net increase (decrease) in cash						
Cash, January 1						
Cash, December 31						

Step 2. Record net income/(loss):

As illustrated in step 3 below.

Step 3. Adjustments:



Enter the amount of the net income/(loss) as the first amount in the operating activities section. Next, review the income statement and select all the non-cash items. Look for items such as depreciation, depletion, amortization, and gains or losses (such as with the sale or disposal of assets). In this case, there are two non-cash items to adjust from net income. Record them as adjustments to net income in the statement of cash flows.

Step 4. Current assets and liabilities:

Calculate and record the change between the opening and closing balances for each non-cash working capital account as shown below (with the exception of the current portion of long-term notes payable, which is netted with its respective long-term notes payable account) as shown below:



Cash inflows to the company are reported as positive numbers while cash outflows are reported as negative numbers using brackets. How does one determine if the amount is a positive or a negative number? A simple tool is to use the accounting equation to determine whether cash is increasing as a positive number or decreasing as a negative number. Recall the accounting equation:



This must always remain in balance. This equation can be applied when analyzing the various accounts to record the changes. For example, accounts receivable has increased from $165,000 to $249,510 for a total increase of $84,510. Using the accounting equation, this can be expressed as:



Expanding the equation a bit:



If accounts receivable INCREASES by $84,510, then this can be expressed as a black up-arrow above the account in the equation:



Holding everything in the equation constant, except for cash, if accounts receivable INCREASES, then the effect on the cash account must have a corresponding DECREASE in order to keep the equation balanced:



If cash DECREASES, then it is a cash outflow and the number must be negative with brackets as shown in the statement above.

Conversely, when analyzing liability or equity accounts, the same technique can be used. For example, an increase in account payable (liability) of $143,000 will affect the equation as follows:



Again, holding everything else constant except for cash, if accounts payable INCREASES as shown by the black up-arrow above, then cash must also INCREASE by a corresponding amount in order to keep the equation in balance.



If cash INCREASES, then it is a cash inflow and the number will be positive with no brackets as shown in the statement above.

Step 5. Non-current asset changes:

The next section to complete is the investing activities section. The analysis of all of the non-current assets accounts must also take into account whether there have been any current year purchases, disposals, or adjustments as part of the analysis. The use of T-

accounts for this type of analysis provides a useful visual tool to help understand whether the changes that occurred in the account are cash inflows or outflows, as shown below.



There are four non-current asset accounts: long-term investments, land, buildings, and intangible assets. The land account had no change, as there were no purchases or sales of land. Analyzing the investment account results in the following cash flows:

Long-term investment				
	–			
	??			= purchase of investment
	30,750			

Additional information in note #3 above stated that there were no sales of long-term investments during the year, the entry would have been for a purchase:

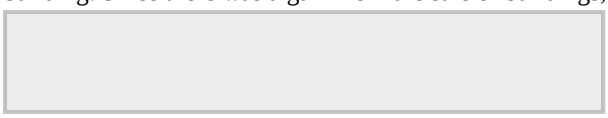


Cash paid for the investment was therefore $30,750.

Analysis of the buildings account is a bit more complex because of the effects of the contra account for accumulated depreciation. In this case, the buildings account, and its contra account, must be merged together since the SFP/BS reports only the net carrying amount. Analyzing the buildings account results in the following cash flows:

Building (net of accum. depr.)				
	325,000			
		43,000		current year accum. Depr.
		50,000		= X sale of building
	232,000			

Additional information note # 4 states that no buildings were purchased so the balancing amount of $50,000 must be for a sale of a building. Since there was a gain from the sale of buildings, the entry would have been:



Cash proceeds were therefore $55,000.

The sale of the patent is straightforward since there were no other sales, purchases, or amortization in the current year (as stated in steps 2 and 4).

Step 6. Non-current liabilities and equity changes:



There are five long-term liability and equity accounts: long-term notes payable, preferred shares, common shares, contributed surplus, and retained earnings. The preferred shares and contributed surplus accounts had no changes to report. Note that just because an account balance has no change during the year, this does not necessarily mean that there were no transactions. For example, old shares could be retired and new shares issued for the same face value. These transactions would need to be reported in the cash flow statement, even though the net change in the account is zero.

Analyzing the long-term notes payable account results in the following cash flows:

Long-term note payable				
	325,000			the sum of both the current and long-term amounts
			19,000	X = repayment
	306,000			the sum of both the current and long-term amounts

Since there were no other transactions stated in the additional information note # 5 above, the entry would have been:



Cash paid was therefore $19,000.

Note how the current portion of long-term debt has been included in the analysis of the long-term note payable. The current portion line item is a reporting requirement relating to the principal amount owing one year after the reporting date. As it is not actually a working capital account, it is omitted from the operating section and included with its corresponding long-term liability account in the financing activities. For example, the opening balance of $325,000 above is the sum of the current portion ($45,000) plus the long-term portion ($280,000). Similarly, the ending balance of $306,000 is the sum of the current portion ($60,000) plus the long-term portion ($246,000).

The common shares and retained earnings accounts are straightforward and the analysis of each is shown below.

Common shares				
		680,300		
		182,200		X = share issuance
		862,500		

Since there were no other transactions stated in the additional information note #6 above, the entry would have been:



Cash received was therefore $182,200.

Retained earnings				
		50,000		
		77,000		net income
	X = 42,590			dividends paid
		84,410		

The additional information note #7 stated that cash dividends were declared and paid, so the entry would have been:

Cash paid was therefore $42,590.

Step 7. Subtotal and reconcile:

The three activities total a net increase in cash of $57,500. When added to the opening cash balance of $250,000, the resulting total of $307,500 is equal to the ending cash balance for the year ending December 31, 2020. This can be seen in the completed statement of cash flows following step 8.

Step 8. Required disclosures:

The statement of cash flows using the indirect method must separately disclose the cash flows for:

- Interest paid
- Interest received
- Dividends received (dividends paid are reported in the financing section)
- Cash paid income taxes
- Non-cash transactions that may have occurred in the current year.

If not too lengthy, these items can be disclosed in the notes or at the bottom of the statement. The cash received for dividend income and interest income was taken directly from the income statement since no accrual accounts exist on the balance sheet for these items. Cash paid for interest charges and income taxes are calculated on the basis of an analysis of their respective liability accounts from the balance sheet and expense accounts from the income statement.

Below is the completed statement of cash flows using the indirect method with required disclosures for Watson Ltd., for the year

ending December 31, 2020:

Watson Ltd.			
Statement of Cash Flows			
For the Year Ended December 31, 2020			
Cash flows from operating activities			
Net income (loss)		$	77,000
Non-cash items (adjusted from net income):			
Depreciation expense			43,000
Gain from sale of building			(5,000)
Cash in (out) from operating working capital:			
Increase in trading investments			(2,000)
Increase in accounts receivable			(84,510)
Decrease in notes receivable			3,550
Increase in inventory			(58,970)
Increase in prepaid expenses			(3,450)
Increase in accounts payable			143,000
Decrease in interest payable			(8,400)
Decrease in income taxes payable			(5,880)
Decrease in unearned revenue			(200,000)
Net cash flows from operating activities			(101,660)
Cash flows from investing activities			
Purchase of HTM investments			(30,750)
Sales proceeds from sale of building			55,000
Sales proceeds from sale of patent			14,300
Net cash flows from investing activities			38,550
Cash flows from financing			

activities			
Repayment of long-term note			(19,000)
Proceeds from shares issuance			182,200
Dividends paid			(42,590)
Net cash flows from financing activities			120,610
Net increase (decrease) in cash			57,500
Cash, January 1			250,000
Cash, December 31		$	307,500
Disclosures:			
Cash paid for income taxes		$	38,880
( )			
Cash paid for interest charges			11,400
( )			
Cash received for dividend income			3,000

Note that the interest income of $2,000 reported in the income statement is not included in the additional disclosures shown above. This is because the interest income was accrued as an adjusting entry regarding the trading investments, so it was not a cash-received item.

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21.3: Direct Method

As mentioned earlier, the only difference when applying the direct method, as opposed to the indirect method, is in the operating activities section; the investing and financing sections are prepared exactly the same way. Typical reporting categories in the operating section for the direct method include:

- Cash received from sales
- Cash paid for goods and services
- Cash paid to, or on behalf of, employees
- Cash received for interest income
- Cash paid for interest
- Cash paid for income taxes
- Cash received for dividends

Recall that the categories above are based on the nature of the cash flows. Whereas with the indirect method the cash flows are based on the income statement and changes in each non-cash working capital (current) asset and liability account. Below is a comparison of the two methods:

Indirect Method				**Direct Method**		
Cash flows from operating activities:				Cash flows from operating activities:		
Net income	$$			Cash received from sales	$$	
Adjust for non-cash items:				Cash paid for goods and services	($$)	
Depreciation	$$			Cash paid to or on behalf of employees	($$)	
Gain on sale of asset	($$)			Cash received for interest income	$$	
Increase in accounts receivable	($$)			Cash paid for interest	($$)	
Decrease in inventory	$$			Cash paid for income taxes	($$)	
Increase in accounts payable	$$			Cash received for dividends	$$	
Net cash flows from operating activities		$$		Net cash flows from operating activities		$$
(supplementary disclosures for interest,				(interest and income tax categories exist		
dividends and income tax are required)				so no supplementary disclosures required)		

The direct method is straightforward due to the grouping of information by nature. This also makes interpretation of the statement more intuitive for stakeholders. However, companies record thousands of transactions every year and many of them do not involve cash. Since the accounting records are kept on an accrual basis, it can be a time-consuming and expensive task to separate and collect the cash-only data required for the direct method categories by nature. Also, providing disclosures about sensitive information, such as cash receipts from customers and cash payments to suppliers, is not in the best interest of the company. For these reasons, many companies prefer not to use the direct method. Instead, the indirect method may be easier to prepare because it

collects much of its data directly from the existing income statement and balance sheet. However, it is less intuitive as evidenced by the accounts-based categories above.

20.3.1. Preparing a Statement of Cash Flows: Direct Method

As with the indirect method, preparing a statement of cash flows using the direct method is made much easier if specific steps are followed in sequence. Below is a summary of those steps to complete the operating section of the statement of cash flows using the direct method:

Direct Method Steps:

- Complete the headings and categories section of the operating activities. The example below includes seven categories based on the nature of the revenue and expenses.
- Create three additional columns: Income Statement (I/S) Accounts, Changes to Working Capital (WC), and Accounts and Net Cash Flows In (Out).
- Starting with the top of the income statement, record each income statement line item amount to the most appropriate direct method category in the I/S Accounts column. These would include sales, cost of goods sold, operating expenses, non-operating revenue, and various expenses items. Any non-cash items are also recorded, but only as memo items in the column. Examples of these would be depreciation, amortization, and most gains or losses. Such as gains or losses from the sale of assets, gains or losses from the redemption of debt, impairment losses, and from fair value changes reported in net income. The I/S Accounts column total must be equal to net income.
- Under the Changes to Working Capital Accounts, record the net change amount for each non-cash working capital account (current assets and current liabilities) except for the "current portion of long term debt" line item. As it is not a working capital account, it is added back to its corresponding long-term liability. Also, record as an adjustment any additional non-cash items found in net income arising from the analysis of the non-current asset, liability, and equity accounts. The obvious non-cash items were recorded as memo items only in Step 3, but other non-cash items can be uncovered when analyzing the non-current assets, liabilities, and equity accounts. When these are discovered, they must be recorded as an adjustment to net income in this column.
- Under the Net Cash Flows In (Out), calculate the net cash flows amount for each direct method category.
- Calculate the subtotal of the operating activities section and transfer the information to the statement of cash flows operating activities section.

Using the financial statements from Watson Ltd. presented previously, we will apply the steps below:

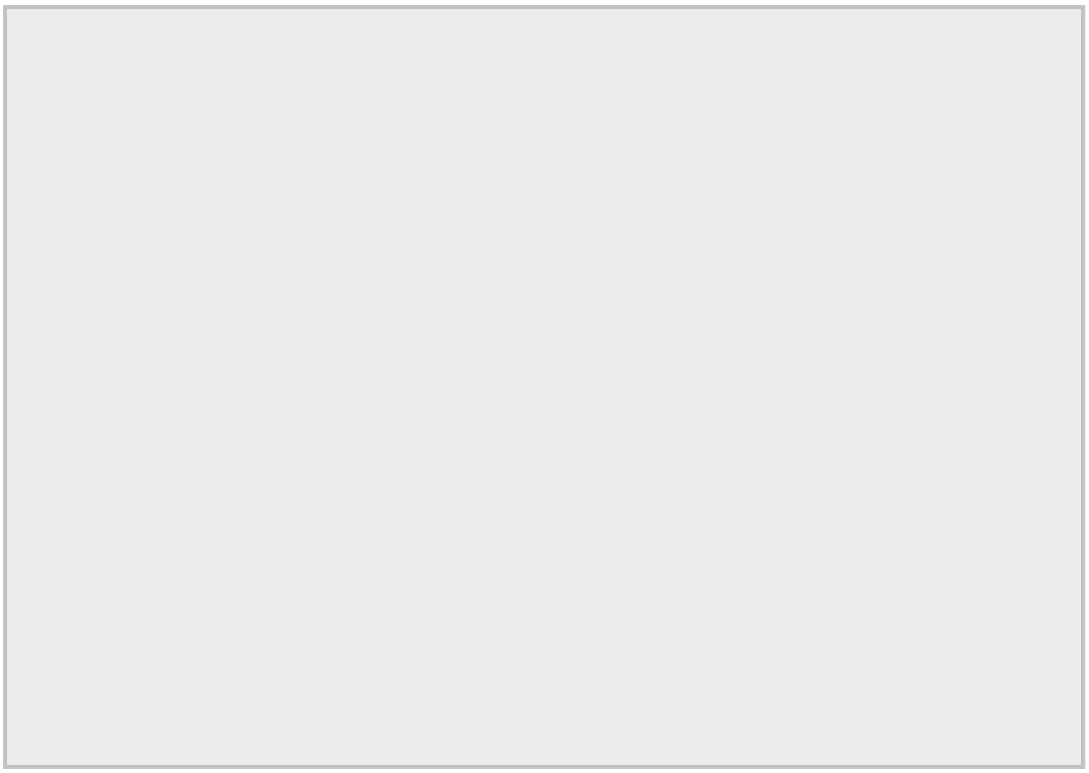
Applying the Steps:

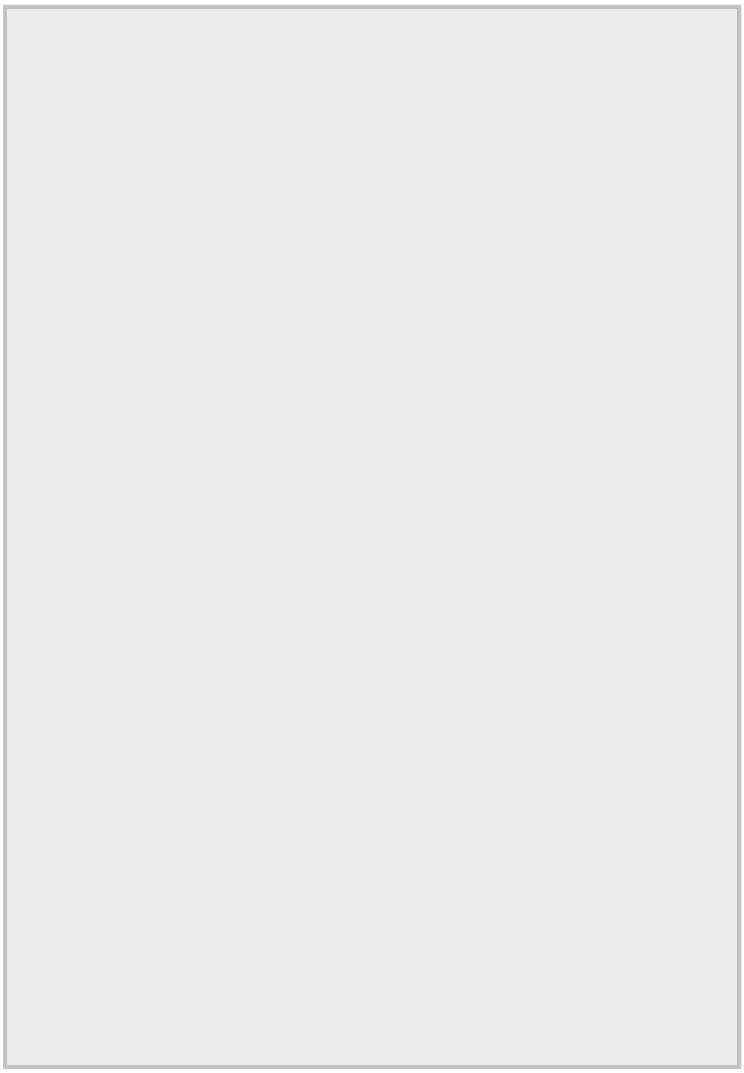
Step 1 and Step 2. Headings, categories, and three additional columns.

Watson Ltd.			
Operating Activities			
		Changes to	Net
		Working Capital	Cash Flow
Cash flows from operating activities	I/S Accounts	Accounts	In (Out)
Cash received from sales			
Cash paid for goods and services			
Cash paid to employees			
Cash received for interest income			
Cash paid for interest			
Cash paid for income taxes			
Cash received for dividends			
Net cash flows from operating activities			

Step 3. Record each income statement line item amount to its respective direct method category under the I/S Accounts column (non-cash items are memo items only):

Step 4. Record the net change amount for each non-cash working capital account, except cash (also, record any adjustment amounts to net income resulting from analysis of non-current accounts):





Note how items 13 and 17 on the operating activities statement, regarding the trading investments, cancel each other out. This is because the interest income from the trading investment was accrued and not actually received in cash.

In this simple example, no adjustments to net income resulting from analysis of non-current assets, liabilities, and equity are identified. However, this situation will be illustrated in the comprehensive example later in this chapter.

The change in each working capital account can be a positive or a negative cash flow (using brackets). To ensure that the cash flow is correctly identified as positive or negative, apply the principles using the accounting equation explained earlier:

Refer to the earlier section in this chapter for more details regarding this technique.

Step 5 and Step 6. Calculate the net cash flows amount for each category and calculate the subtotal for the operating activities section (transfer the information to the statement of cash flows):

Watson Ltd.								
Operating Activities								
				Changes to			Net	
				Working Capital			Cash Flow	
Cash flows from operating activities	I/S Accounts			Accounts			In (Out)	
Cash received from sales	$	3,500,000	1	$	(84,510)	18		
					3,550	19		
					(200,000)	25	$	3,219,040
Cash paid for goods and services		(2,100,000)	2		(58,970)	20		
		(134,000)	5		(3,450)	21		
		(35,000)	6		143,000	22		
		(50,000)	7					
		(12,000)	8					
		(125,000)	9					
		(48,000)	10					
		(50,000)	11					(2,473,420)
Cash paid to employees		(800,000)	3					(800,000)
Cash received for interest income		2,000	13		(2,000)	17		0
Cash paid for interest		(3,000)	15		(8,400)	23		(11,400)
Cash paid for income taxes		(33,000)	16		(5,880)	24		(38,880)
Cash received for dividends		3,000	12					3,000
Memo items:								
Depreciation expense		(43,000)	4					
Gain on sale of building		5,000	14					
Net cash flows from operating activities	$	77,000		$	(216,660)		$	(101,660)

A comparison of the two methods, for the operating activities section for Watson Ltd., is presented below:

Watson Ltd.				Watson Ltd.		
Operating Activities – Indirect Method				Operating Activities – Direct Method		
Cash flows from operating activities				Cash flows from operating activities		
Net income (loss)	$	77,000		Cash received from sales	$	3,219,040
Non-cash items (adjusted from net income):				Cash paid for goods and services		(2,473,420)
Depreciation expense		43,000		Cash paid to employees		(800,000)
Gain from sale of building		(5,000)		Cash received for interest income		0
				Cash paid for interest		(11,400)
Cash in (out) from operating working capital:				Cash paid for income taxes		(38,880)
Increase in trading investments		(2,000)		Cash received for dividends		3,000
Increase in accounts receivable		(84,510)				
Decrease in notes receivable		3,550		Net cash flows from operating activities	$	(101,660)
Increase in inventory		(58,970)				
Increase in prepaid expenses		(3,450)				
Increase in accounts payable		143,000				
Decrease in interest payable		(8,400)				
Decrease in income taxes payable		(5,880)				
Decrease in unearned revenue		(200,000)				
Net cash flows from operating activities	$	(101,660)				

The cash received for interest income of zero dollars was included in the direct method example for illustrative purposes only. This line item would normally be removed when preparing the actual statement of cash flows. Also, additional disclosures for interest, dividends, and income taxes discussed previously are required when using the indirect method. With the direct method, these additional disclosures are not required as they are already reported as cash-paid line items within the statement (as shown in the example above).

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21.4: Interpreting the Results

This section will focus on interpreting the results using the indirect method statement of cash flows, as it is the method most widely

used in business today. For convenience, the entire statement of cash flows indirect method for Watson Ltd. is reproduced below.

Watson Ltd.			
Statement of Cash Flows – Indirect Method			
For the Year Ended December 31, 2020			
Cash flows from operating activities			
Net income (loss)		$	77,000
Non-cash items (adjusted from net income):			
Depreciation expense			43,000
Gain from sale of building			(5,000)
Cash in (out) from operating working capital:			
Increase in trading investments			(2,000)
Increase in accounts receivable			(84,510)
Decrease in notes receivable			3,550
Increase in inventory			(58,970)
Increase in prepaid expenses			(3,450)
Increase in accounts payable			143,000
Decrease in interest payable			(8,400)
Decrease in income taxes payable			(5,880)
Decrease in unearned revenue			(200,000)
Net cash flows from operating activities			(101,660)
Cash flows from investing activities			
Purchase of HTM investments			(30,750)
Sales proceeds from sale of building			55,000
Sales proceeds from sale of patent			14,300
Net cash flows from investing activities			38,550
Cash flows from financing			

activities			
Repayment of long-term note			(19,000)
Proceeds from shares issuance			182,200
Dividends paid			(42,590)
Net cash flows from financing activities			120,610
Net increase (decrease) in cash			57,500
Cash, January 1			250,000
Cash, December 31		$	307,500
Disclosures:			
Cash paid for income taxes		$	38,880
( )			
Cash paid for interest charges			11,400
( )			
Cash received for dividend income			3,000

The cash balance shows an increase of $57,500 for the current year. On the surface, a hasty conclusion could be drawn that all is well with Watson Ltd., as their bottom line is a positive cash flow. However, there is, in fact, trouble ahead for this company. We know this because the operating activities section, which represents the reason for being in business, is in a negative cash flow position. In other words, a company is expected to earn a profit, resulting in positive cash flows reflected in the operating activities section. However, in this case there is a negative cash flow of $101,660 from operating activities. Why?

For Watson Ltd., both the accounts receivable and inventory have increased, resulting in a net decrease in cash of $143,480. An increase in accounts receivable may mean that sales have occurred but the collections are not keeping pace with the sales on account. An increase in inventory may be because there have not been enough sales in the current year to cycle the inventory from current asset, to sales/profit, and, ultimately, to cash. However, the risk of holding large amounts of inventory is the increased possibility that the inventory will become obsolete, damaged, and unsellable.

In this example, an additional reason for decreased net cash from operating activities is due to a decrease in unearned revenue. Recall that unearned revenue is cash received from customers in advance of the company providing the goods and services. In this case, the cash would have been reported as a positive cash flow in the operating activities section in the previous reporting period when the cash was actually received. At that time, the cash generated from operating activities would have increased by the amount of cash received for the unearned revenue. The entry upon receipt of the cash would have been:



When the company finally provides the goods and services to the customer, the net income reported at the top of the operating activities section will reflect the portion of the unearned revenue that has now been earned. However, the company did not obtain actual cash for this revenue in this reporting period since the cash was received in the prior reporting period. Keep in mind that unearned revenue is not normally an obligation that must be paid in cash to the customer, and getting customers to pay in advance is always a good cash management strategy. That said, once the goods and services are provided to the customer, the obligation ceases.

Listed in the investing activities section, there was a sale of a building and a purchase of a long-term investment in Held to Maturity (HTM) Investments. The sales proceeds from the building may have been partially invested in the HTM to make a return on the cash proceeds until it can be used in the future for its intended purpose. However, more analysis would be required to confirm whether this was the case. The sale of the patent also generated a positive cash flow. There was no gain on the sale of the patent reported in the income statement, so the sales proceeds did not exceed its carrying value at the time it was sold. Ideally, the patent would not have been sold in a panic, in an effort to raise immediate additional cash at the expense of future cash flows it could have generated.

Looking at the financing activities section, it is clear that the majority of cash inflows for this reporting period resulted from the issuance of additional common shares worth $182,200. This represents an increase in the share capital of more than 25%. Increased shares will have a negative impact on the earnings per share, and possibly the market price as well, which may give investors pause. The shareholders were also paid dividends of $42,590, but this amount only just covers the preferred shareholders dividend of $30,000 ( ) plus its share of the participating dividend. This leaves very little dividends for the common shareholders, a situation likely to cause concern among the common shareholder investors, made worse by the dilution of their holdings due to the large issuance of additional shares.

When looking at the opening and closing cash balances for Watson Ltd., they seem like sizeable amounts. However, we must look at where the cash originated from. In this case, the $250,000 opening balance was due almost entirely to the $225,000 unearned revenue received in advance, which is not an ongoing source of capital. The ending cash balance of $307,500 was due to the issuance of additional share capital of $182,200 (a one-time transaction), plus an increase in accounts payable of $143,000 that will eventually have to be repaid. Consider also that during the year, the cash from the unearned revenues was being consumed and the issuance of the additional capital had not yet occurred. It would be no surprise, then, if cash at the mid-year point was insufficient to cover even the current liabilities, hence the increase in accounts payable and, ultimately, the issuance of additional capital shares.

In summary, Watson Ltd. is currently unable to generate positive cash flows from its operating activities. The unearned revenue of $225,000 at the start of the year added some needed cash early on, but this reserve was depleted by the end of the reporting year. In the meantime, without a significant change in how the company manages its inventory and receivables, Watson Ltd. may continue to experience a shortage of cash from its operating activities. To compensate, it may continue to sell off assets, issue more shares, or incur more long-term debt in order to obtain the needed cash. In any case, these sources will eventually dry up when investors are no longer willing to invest, creditors are no longer willing to extend loans, and no assets remain worth selling. Watson Ltd.'s current negative cash position from operating activities is unsustainable and must be turned around quickly for the company to remain a going concern.

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21.5: Disclosures

Throughout this chapter, various disclosures have been discussed. Below is a summary of the main required disclosures:

- The change in cash (including cash equivalents) must be explained.
- The components of cash and cash equivalents must be disclosed as well as the company policy used to determine its composition.
- Cash flows are to be classified as either from operating, investing, or financing activities.
- Cash flows from operating activities can be reported using the indirect or direct method.
- Cash flows from interest received or paid, dividends received or paid (IFRS and ASPE), and income taxes paid (IFRS) are to be reported separately, either within the statement of cash flows or as a supplemental disclosure.
- Major classes of cash flows in and out within the investing and financing section are to be separately reported.
- Non-cash transactions are excluded from the statement of cash flows but must be disclosed as a supplemental disclosure.

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21.6: Analysis

Ratio Analysis – Overview

Ratio analysis occurs when relationships between selected financial data (presented in the numerator and denominator of the formula) provide key information about a company. Ratios from current year financial statements alone may not be as useful as when they are compared with benchmark ratios. Examples of benchmark ratios are a company's own historical ratio trends, future ratio targets set by management as part of its strategic plan, industry sector ratios from the sector that the company operates in, or ratios from competitors, if obtainable.

Care must be taken when interpreting ratios because companies within an industry sector may use different accounting policies, which affect the comparison of ratios. In the end, ratios are based on a company's current and past performance and are merely indicators. Further investigation is needed to gather more business intelligence about the reasons why certain variances in the ratios occur.

Statement of Cash Flows Analysis

Not all companies who report profits are financially stable. This is because profits do not necessarily translate to cash. Looking at the statement of cash flows for Watson Ltd. above, we see that it reported a $77,000 net income (profit), but it is currently experiencing significant negative cash flows from its operating activities.

As previously discussed, one of the most important aspects of the statement of cash flows is the cash flows generated from the operating activities, as this reflects the business's day-to-day operations. If sufficient cash is generated from operating activities, then the company will not have to increase its debt, issue shares, or sell off useful assets to pay its bills. However, as we saw the opposite was true for Watson Ltd. as it increased its short-term debt (accounts payable), sold off a building, and issued 25% more common shares.

Another critical aspect is the sustainability of positive cash flows from operating activities. Perhaps Watson Ltd.'s negative cash flow from operating activities will turn itself around in the next reporting period, as this would be the company's best hope. Other companies who experience positive cash flows from operations must also ensure that it is sustainable and can be repeated consistently in the future.

In summary, it is critical to monitor the trends regarding cash flows over time. Without benchmarks, such as historical trends or industry standards, ratio analysis is not as useful. If trends are tracked, ratio analysis can be a powerful tool to evaluate a company's cash flows.

Statement of Cash Flows Ratios

Below are some of the cash flows ratios currently used in business.

Ratio	Formula	Purpose
Liquidity ratios – ability to pay short term obligations		
Current cash debt coverage ratio		ability to pay short term debt from its day-to day operations. A ratio of 1:1 is reasonable.
Financial flexibility – ability to react to unexpected expenses and investment opportunities		
Cash debt coverage ratio		the ability to pay debt from net cash from operating activities

For Watson Ltd., since the net cash flow from operating activities is a loss of $101,660, the two ratios above would be unfavourable. For example, the current cash debt coverage ratio would be a negative 26.4% ( ) and the cash debt coverage ratio would be a negative 16.1% ( ). Without the historical trends for these ratios, it is impossible to say if Watson Ltd. can turn things around or not.

Free Cash Flow (FCF) Analysis

Another way to assess a company's cash flow liquidity is the free cash flow. Free cash flow is the cash flow remaining from operating activities after deducting cash spent on capital expenditures, such as purchasing property, plant and equipment. Some companies also deduct cash paid dividends. The remaining cash flow represents cash available to the company to do other things such as expand its operations, pay off long-term debt or reduce the number of outstanding shares. Below is the calculation using the data from Watson Ltd.'s statement of cash flows.

Watson Ltd.		
Free Cash Flow		
December 31, 2020		
Cash flow provided by operating activities	$	(101,660)
Less capital expenditures		0
Dividends		(42,590)
Free cash flow	$	(144,250)

It is no surprise that Watson Ltd. has no free cash flow and no financial flexibility, since its operating activities are in a negative position. Watson Ltd. met its current year dividend cash requirements by selling more common shares to raise additional cash, thus diluting the shareholders' investment position. When calculating the free cash flow, the capital expenditures amount should be limited to those that relate to daily operations that are intended to sustain ongoing operations, such as PPE expenditures. Meaning, capital expenditures purchased as investments are usually excluded from the free cash flow analysis.

- A video is available on the Lyryx web site. Click Here to view the video.

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21.7: Comprehensive Example- Both Methods

The example below will incorporate some different transactions that were discussed earlier in this course, or the prerequisite courses. These include more complex transactions such as long-term investments such as Available for Sale investments, long-term liabilities such as accrued pension liabilities, deferred income taxes payable or bonds issued at a discount and equity items such as convertible securities, stock options and re-acquisition and retirement of shares.

Below are three financial statements for Ace Ltd., as on December 31, 2020.

Ace Ltd.						
Statement of Income						
For the Year Ended December 31, 2020						
Sales					$	1,400,000
Cost of golds sold						630,000
Gross profit						770,000
Operating expenses						
Depreciation expense		$	43,000			
Salaries and benefits expense			120,000			
Utilities expenses			50,000			
Travel expenses			26,000			
Operating expenses, including rent expense			80,000			319,000
Income from operations						451,000
Other (non-operating) revenue and expenses:						
Investment income			3,000			
Interest expense			(30,000)			
Gain on sale of AFS investment			3,000			
Loss on sale of machinery			(15,000)			(39,000)
Income before taxes						412,000
Income tax expense			79,000			
Deferred tax recovery			(12,000)			67,000

Net income					$	345,000

Ace Ltd.			
Statement of Comprehensive Income			
For the Year Ended December 31, 2020			
Net income		$	345,000
Other comprehensive income			
Items that may be reclassified subsequently to net income or loss:			
Increase in fair value, AFS investments (OCI)*			44,000
Removal of unrealized gain on sale of AFS investment*			(3,000)
Actuarial loss on defined benefit pension plan*			(20,000)
Comprehensive income			366,000

* In the interest of simplicity, income taxes have been ignored.

Ace Ltd.						
Balance Sheet						
As at December 31, 2020						
		2020			2019	
Assets						
Current assets						
Cash		$	50,000		$	30,000
Accounts receivable (net)			110,000			145,000
Inventory			175,000			200,000
Prepaid insurance expenses			6,000			–
Total current assets			341,000			375,000
Investments – available for sale (OCI)			150,000			80,000
Property, plant, and equipment						
Land			380,000			200,000
Machinery			1,700,000			1,500,000
Accumulated depreciation			(363,000)			(400,000)
Total property, plant, and equipment			1,717,000			1,300,000
Goodwill			300,000			300,000
Total assets		$	2,508,000		$	2,055,000
Liabilities and Shareholders' Equity						

Current liabilities						
Accounts payable		$	200,000		$	300,000
Salaries payable			128,000			125,000
Income taxes payable			115,000			120,000
Total current liabilities			443,000			545,000
Long-term liabilities						
6%, convertible bonds payable, net			–			750,000
7.2% bonds payable, net			453,000			–
Deferred income tax payable			38,000			50,000
Accrued pension benefit liability			85,000			75,000
Total long-term liabilities			576,000			875,000
Total liabilities			1,019,000			1,420,000
Shareholders' Equity						
Paid-in capital						
Common shares			1,210,000			500,000
Contributed capital, bond conversion rights			–			35,000
Contributed capital, stock options			62,000			50,000
Total paid-in capital			1,272,000			585,000
Retained earnings			192,000			46,000
Accumulated Other			(40,000)			(20,000)

Comprehensive Income, pension						
Accumulated Other Comprehensive Income, investments			65,000			24,000
Total shareholders' equity			1,489,000			635,000
Total liabilities and shareholders' equity		$	2,508,000		$	2,055,000

Additional information:

- Issued additional 7.2%, $500,000, 10-year bonds payable for cash of $452,000.
- Cash dividends were declared and paid.
- An AFS investment (OCI) was sold for $50,000 cash on January 2, 2020. Its original cost was $47,000 and had a carrying value of $50,000 (fair value) at the time of the sale. All unrealized gains previously recorded to OCI/AOCI for the sold investment were reclassified to net income. AFS investments of $76,000 were purchased for cash.
- There is a stock option plan for senior executives. In 2020, stock options with a book value of $15,000 were exchanged for common shares, along with $40,000 in cash. The remaining increase in the stock options account is due to the compensation expense included in the income statement as salaries and benefits.
- The six percent convertible bond payable was converted into common shares at the beginning of 2020.
- Land was acquired for cash.
- Machinery, with an original cost of $100,000 and a net book value of $20,000, was sold at a loss of $15,000. Additional machinery for other activities was acquired in exchange for common shares.
- Common shares with an average original issue price of $430,000 were retired for $485,000.
- The accrued pension benefit liability was increased by $20,000, due to an actuarial revaluation, and $10,000, because of the difference between funding and the pension expense.
- The company's policy is to report dividends received, interest received, and interest paid as operating activities, and dividends paid as financing activities.

Preparing the Statement of Cash Flows: Indirect Method

Indirect Method Steps:

1. **Headings**
2. **Record net income/(loss)**
3. **Adjust out non-cash items from the income statement**
4. **Current assets and current liabilities changes**
5. **Non-current asset accounts changes**
6. **Non-current liabilities and equity accounts changes**
7. **Subtotal and reconcile**
8. **Disclosures**

Following the steps listed above, prepare a statement of cash flows using the indirect method. Details are provided below for each step, followed by the completed statement of cash flows.

Notes to the Solutions and Details About Calculations:

Step 1. Headings:

Insert headings and subheadings, leaving spaces within each section to record the relevant line items resulting from the subsequent steps.

Step 2. Record net income/(loss):

Net income (and not comprehensive income) is the starting point for a statement of cash flows with the indirect method. Comprehensive income will become relevant if any of the AFS investments are actually sold. Recall that upon sale, any unrealized gains or losses previously recorded to OCI will be realized and moved to retained earnings from AOCI.

Step 3. Adjustments:

When reviewing the income statement, non-cash items for depreciation, loss on sale of machinery, and realized gain on sale of AFS investments are reported. However, since this is a more complex example, there could be other hidden non-cash items that will become apparent when analyzing the non-current asset, liability, and equity accounts. Leave some space in this section in case other non-cash items are discovered in the accounts analysis.

Step 4. Current assets and liabilities:

Continue to use the accounting equation, A = L + E, to determine if the change amount for each non-cash working capital account is a positive number or a negative number (requiring a bracket).

Step 5. Non-current asset changes:

Analyze all the non-current asset accounts to determine the reasons for the changes in the accounts. Additional information taken from the various accounting records has been provided. Items 3, 6, and 7 pertain to non-current assets so this information will be incorporated into the step 5 analysis.

a. AFS investment (OCI):

Long-term AFS investments				
	80,000			
			50,000	sale of investment
	76,000			purchase of AFS investment
	X = 44,000			increase in fair value (OCI)
	150,000			
AOCI, investments				
			24,000	
			44,000	increase in fair value (OCI)
	3,000			remove realized gain on sale
			65,000	

Additional information in note # 3 states that $50,000 of AFS investments (fair value = carrying value) was sold for $50,000 cash, so there's no gain or loss on the actual sale. However, the original cost was $47,000, so there is an accumulated unrealized gain of $3,000 ( ) for the sold investment that was reclassified from OCI/AOCI to net income. This is confirmed by reviewing the income statement. This non-cash entry has already been adjusted in operating activities in Step 3, so no further action is required. Entry for the sale:

Entry to reclassify:

Note # 3 also states that there was also a cash paid investment of $76,000. The T-account requires another debit for $44,000 to balance properly. This must be for fair value changes and that is confirmed by reviewing the comprehensive income statement. This non-cash entry is not included in the income statement so no further action is necessary.

Analysis result: enter the cash amounts for the sale ($50,000) and the purchase of AFS investments ($76,000) highlighted in red in the investing activities section of the statement of cash flows.

b. Land:

Land				
	200,000			
	X = 180,000			purchase of land
	380,000			

Additional information in note # 6 states that land was purchased for cash. There is no other information about the land account so the balancing amount of $180,000 must be the purchase price of the land. Entry for the purchase:

Analysis result: enter the cash amount for the purchase of land ($180,000) highlighted in red in the investing activities section of the statement of cash flows.

c. Machinery:

Machinery				
	1,500,000			
			100,000	sale of machinery
	X = 300,000			purchase of machinery for shares
	1,700,000			
Accumulated depreciation				
			400,000	
	80,000			sale of machinery
			43,000	X = current year depreciation
			363,000	

Additional information note # 7 states that there was a loss from the sale of machinery of $15,000 that originally cost $100,000. The carrying value at the time of the sale was $20,000. The cash amount for the sale would therefore be $5,000 (

). The accumulated depreciation for the sold machinery would be $80,000 (
). Entry for the sale:



Accumulated depreciation requires another $43,000 credit to balance properly. This must be for the current year depreciation expense and that is confirmed by reviewing the income statement. This non-cash entry has already been adjusted in operating activities in Step 3, so no further action is required. Note # 7 also stated that additional machinery was purchased in exchange for common shares. The balancing amount of $300,000 would account for this non-cash transaction which is not included in the SCF except as a supplemental disclosure required for non-cash items.

Analysis result: enter the cash amount for the sale of machinery ($5,000) highlighted in red in the investing activities section of the statement of cash flows.

Step 6. Non-current liabilities and equity changes:

Analyze all the non-current liability and equity accounts to determine the reasons for the changes in the accounts. Additional information taken from the various accounting records has been provided. Items 1, 2, 4, 5, 8, and 9 pertain to non-current liabilities and equity so this information will be incorporated into the step 6 analysis.

d. 6% bonds payable:

6% Convertible bonds payable				
			750,000	
	X = 750,000			conversion of bonds to shares
			–	

Additional information note # 5 states that these bonds were converted into common shares in 2020. The equity portion for the conversion rights of $35,000 will also be removed from the contributed surplus account. Entry for the conversion:



This is a non-cash entry which is not included in the SCF except as a supplemental disclosure required for non-cash items.

Analysis result: no cash entries to record.

e. 7.2% bonds payable:

7.2% Bonds payable				
			–	
			452,000	issuance of bonds
			1,000	X = amortized discount
			453,000	

Additional information note # 1 states that bonds with a face value of $500,000 were issued for cash of $452,000. The discount amount would be $48,000 ( ) which will be amortized. Entry for the bond issuance:

The balancing amount of $1,000 must therefore be for amortization of the discount which will be included in net income as part of interest expense of $30,000. This $1,000 non-cash amount should be adjusted from net income in operating activities because it was not done in Step 3.

Analysis result: enter the cash amount for the bond issuance ($452,000) and adjust the $1,000 amortization expense highlighted in red in the financing activities section of the statement of cash flows.

f. Deferred income tax payable:

Deferred Income Tax Payable				
			50,000	
	X = 12,000			reduction of taxes
			38,000	

There is no additional information regarding this account. The balancing amount of $12,000 must be for a deferred income tax recovery which is confirmed by a review of the income statement. This non-cash entry was included in net income but not adjusted in Step 3, so it should be adjusted in the operating section now.

Analysis result: enter the non-cash amount for the deferred tax recovery ($12,000) highlighted in red in the operating activities section as an adjustment to net income.

g. Accrued pension benefit liability:

Accrued Pension Benefit Liability				
			75,000	
			20,000	actuarial revaluation
	X = 10,000			funding amount greater than
				pension expense
			85,000	
AOCI, Pension Benefits				
	20,000			
	20,000			actuarial revaluation
	40,000			

Additional information note # 9 states that this liability was increased by $20,000 due to an actuarial revaluation. This non-cash adjusting entry to OCI/AOCI was not included in net income so it will be omitted from the SCF. Note # 9 also states that the remaining difference was due to the difference between the funding (cash paid) and the pension expense. Entries for pension benefit:



The pension expense amount is not known but the funding (cash) amount is known to be greater than the pension expense by $10,000. Even though this is a non-current liability, it's purpose is to benefit employees and not as a source of financing cash flow. For this reason, it is more appropriate to record this non-current liability reduction as an operating activity instead of a financing activity.

Analysis result: enter the cash difference amount ($10,000) highlighted in red as an operating activity item for the reduction in the pension liability.

h. Common shares:

Common shares				
			500,000	
			300,000	machinery in exchange for shares
			785,000	6% bonds converted
	430,000			shares repurchase
			55,000	options exercise for shares
			1,210,000	
Contributed Surplus – Stock Options				
			50,000	
	15,000			options exercised for shares
			27,000	X = compensation expense (non-cash)
			62,000	

Additional information note # 8 states that shares with an original price of $430,000 were retired for $485,000 cash. The difference is to be debited to retained earnings. Entry for shares repurchase:



Additional information note # 4 states that $15,000 of stock options were exercised along with an additional $40,000 in cash for common shares. The difference in the contributed surplus account was due to compensation expense. Entry for exercise of options:



Entry for compensation expense:



It is now evident that $27,000 of the compensation expense included in net income in salaries and benefits line item is a non-cash transaction that was not adjusted in Step 3. This amount should therefore be adjusted out of net income in operational activities now.

Analysis result: enter the cash amount for the shares repurchase ($485,000) and the cash amount for stock options ($40,000) highlighted in red in the investing activities section of the statement of cash flows. Also, enter the adjusting entry ($27,000) highlighted in red in the operating activities section of the statement of cash flows.

i. Retained earnings:

Retained earnings				
			46,000	
			345,000	net income
	55,000			stock options
	X = 144,000			dividends paid
			192,000	

Additional information note # 2 states that dividends were declared and paid but no amount given. The balancing amount to retained earnings of $144,000 must therefore be the amount of the dividend. Entry for dividends paid:



Analysis result: enter the dividend amount ($144,000) highlighted in red in the financing activities section of the statement of cash flows.

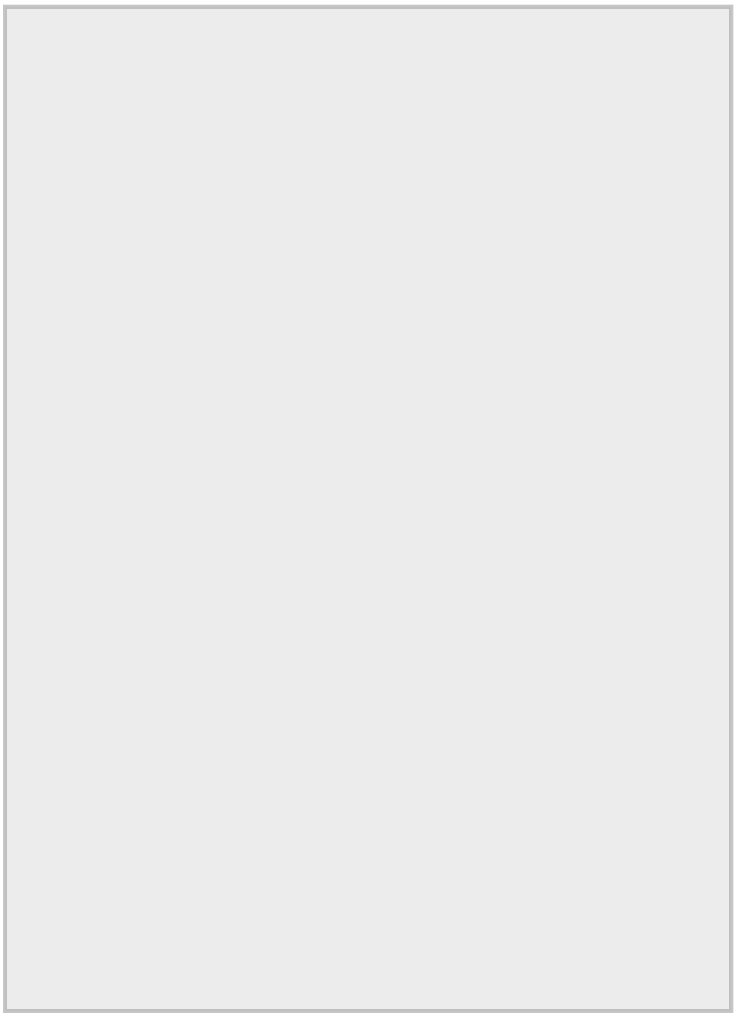
Step 7. Subtotal and reconcile:

Calculate subtotals for each section and also for net cash flows. Reconcile the net amount to the opening and closing cash balances from the balance sheet.

Step 8. Required disclosures:

Prepare the additional disclosures for cash paid interest and income taxes.

Below is the prepared statement of cash flows based on the steps discussed above.





Disclosures:

Cash paid for income taxes

Cash paid for interest charges

Machinery ($300,000) was purchased in exchange for shares.

Six percent convertible bonds ($750,000), and contributed surplus rights ($35,000), were converted to common shares.

Stock options ($15,000) and cash ($40,000) were exercised for common shares.

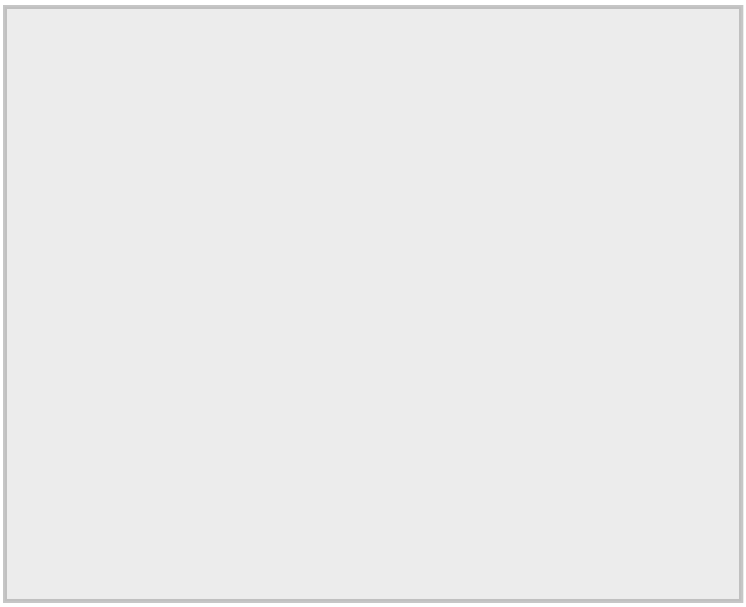
Operating Activities Section: Direct Method

We will once again use the comprehensive illustration above for Ace Ltd. to demonstrate the completion of the operating activities section using the direct method. The first example explained below demonstrates how to prepare a direct method statement on its own. The second example demonstrates a quick technique to convert an already prepared indirect statement of cash flows into a direct method format.

Direct Method Steps:

1. **Headings and categories**
2. **Three additional columns**
3. **Record each income statement reporting line amount to its respective direct method category under the Income Statement Accounts column. Non-cash items are shown as memo items only.**

4. **Record the net change amount for each non-cash working capital account. Also record any adjustment amounts resulting from the analysis of non-current accounts from the investing or financing sections (highlighted in blue below).**
5. **Calculate the net cash flow amount for each category.**
6. **Calculate the subtotal for the operating activities section.**



In this example, steps 1 and 2 are self-explanatory. Steps 3, 4, and 5 are represented by entries in each of the columns in the schedule above. Note that this example is more complex as some non-cash costs were embedded with other income statement expenses initially treated as cash items and left unadjusted. There was also a reduction in the non-current pension liability which was more appropriately reported as an operating activity. These items were discovered when the analysis of the non-current assets (investing activities), liabilities and equity (financing activities) were completed. As a result, there are four additional adjusting entries (e, f, g and h) that must be adjusted in Step 4 of the operating section above (highlighted in blue).

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21.8: Specific Items

The comprehensive illustration above included many of the more complex accounting transactions from the intermediate accounting courses (e.g., investments involving OCI, bonds issued at a discount, conversion of bonds to shares, deferred income taxes, exercising stock options, and accrued pension liabilities with funding changes). Below, however, is a brief discussion of further items to consider:

- **Cash equivalents**

  Unrestricted cash and cash equivalents are treated as one reporting line item in a SCF. This means that changes between them are netted and are, therefore, not itemized. Simply speaking, the cash and cash equivalents accounts are added together and reported as a single amount for both the opening and closing balance.

- **Restricted cash or cash equivalents**
- **Bank overdrafts**
- **Discontinued operations**
- **Impairments of identifiable tangible or intangible assets**
- **Investments in associates**
- **Comprehensive income**
- **Liabilities**
- **Leases**
- **Complex financial instruments**
- **Stock splits and dividends**
- **Estimate for uncollectible accounts**

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21.9: IFRS/ASPE Key Differences

Earlier, we identified differences in the reporting items between ASPE and IFRS. For a review, please refer to sections 20.2 and 20.5 of this chapter.

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21.10: Chapter Summary

LO 1: Describe the statement of cash flows (SCF) in accounting and business.

The SCF reports on how a company obtains and utilizes its cash flows and how it reconciles with the opening and ending cash and cash equivalent balances of the statement of financial position. It is separated into operating, investing, and financing activities, and the combination of positive and negative cash flows from within each activity can provide important information about how a company is managing its cash flows. Large differences between reporting net income and the net cash flows from operations reduce the quality of earnings and the reliability of the financial statements, creating the need for further evaluation into the reasons for the differences.

LO 2: Explain the purpose of the statement of cash flows and the two methods used.

The statement of cash flows provides the means to assess a business's capacity to generate cash and to determine the source of their cash flows. The statement combines with the SFP/BS to evaluate a company's liquidity and solvency, which represents its financial flexibility. This information, based on past events, can be used to predict the future financial position and cash flows of the company. It can also shed light on a company's quality of earnings and whether there may be a disconnect between report earnings and net cash flows from operating activities.

The SCF can be prepared using either the indirect or direct method. With the indirect method, the statement is presented in three distinct sections: operating activities (net income, current assets and liabilities), investing activities (non-current assets), and financing activities (long-term debt and equity), which follows the basic structure of the SFP/BS classifications. The changes between the opening and closing balances of the SFP/BS items are reported in the SCF as either cash inflows or cash outflows. The three sections net to a single net cash inflow or outflow, when combined with the cash and cash equivalent opening balance results in the same amount as the ending balance reported on the SFP/BS. The only difference between the methods is the categorization of cash flows by nature in operating activities, as occurs with the direct method. The investing and financing sections are identical for both methods.

There are some reporting differences between IFRS and ASPE regarding interest received and paid, dividends received and paid, and income taxes paid. For simplicity's sake, the chapter focuses on reporting interest received and paid, dividends received in operating activities, and dividends paid in financing activities. Income taxes paid can be separately reported for ASPE but it is only mandatory for IFRS. Whereas, both accounting standards require that non-cash transactions be reported in the notes to the financial statements. Where transactions involve some cash flows, this portion of the transaction is included in the SCF with supplementary disclosures of the transactions in the notes.

When preparing a statement of cash flows using the indirect method, the operating activities section begins with the net income/loss amount from the income statement. Entries for non-cash items such as depreciation, depletion, amortization, and gains/losses from sale/disposal of non-current assets are shown as adjustments to net income in order to remove the effects of non-cash items. The remainder of the operating activities section lists each non-cash working capital account change from opening to closing balances and reports as either cash flow in or out (cash flow out is prefixed by a minus sign). The investing activities are the change amounts between the opening and closing balances for any non-current assets such as long-term investments, property, plant, equipment, and intangible assets. Each line item from the non-current assets section of the SFP/BS is analyzed to determine if any non-current assets were purchased or sold during the year, and to report the cash paid or received. These amounts are reported as cash flows in or out. The financing section uses the same method as the investing for non-current liabilities and equities, such as any long-term debt, issuance or repurchase of shares for cash and dividends paid. These amounts are reported as cash flows in or out. Finally, the three sections are netted to a single amount and added to the cash and cash equivalent opening balance. The resulting sum should match the ending cash and cash equivalent balance reported in the SFP/BS, and the required disclosures (as described above) need to be prepared.

LO 3: Describe the statement of cash flows using the *direct method* and explain the difference in format from the *indirect method*.

With the direct method, the operating activities section is composed of major categories of cash flows in and out (determined by nature). Categories can include cash received from sales, cash paid for goods and services, cash paid to or on behalf of employees, as well as separate categories for interest received and paid and dividends received.

To prepare a statement of cash flows using the direct method, the operating activities section begins with the income statement where each line item is assigned to the most appropriate category as either a positive cash flow in or a negative cash flow out. Non-cash items are recorded as a memo item only. Next, each non-cash working capital account change between its opening and closing balance is then assigned to the most appropriate category as either a positive or negative cash flow. The net cash flow from each category, and for operating activities, is calculated. The methods used to prepare the investing and financing activities are the same as with the indirect method.

LO 4: Describe how the results from the statement of cash flows are interpreted.

The SCF, using the indirect method, is the most commonly used format in business, and the most important section within it is the operating activities. This is because it shows the cash flows in or out that result from the company's daily operations, which allows us to determine if the company is solvent. If cash flows in this section are negative, then management must determine if this is due to a temporary condition or if fundamental changes are needed to better manage the collections of accounts receivables or levels of unsold inventory. In any case, if a company is in a negative cash flow position from operating activities, it will usually either increase its debt through borrowing, increase its equity by issuing more shares, or sell off some of its assets. If any of these steps are taken, they will be reported as cash inflows from either the investing or financing sections. While none of these options are ideal, they can be used for the short-term, but they are unsustainable in the long-run. Positive cash flows from operating activities must also be evaluated to determine if they are sustainable and to ensure that they will be consistent going forward.

LO 5: Describe the required disclosures for the statement of cash flows.

The main disclosures identified in this chapter included an explanation of the changes in the opening and closing cash balance (including cash equivalents) as well as the components and policy used to determine them. Cash flows in and out are classified as operating, investing, and financing–using either the indirect or direct method. The major classes of cash flows in and out are also to be separately reported within each of the three sections. Cash flows from interest, dividends, and income taxes are separately disclosed as explained above, while non-cash transactions require supplementary disclosure.

LO 6: Describe the types of analysis techniques used for the statement of cash flows.

While the statement of cash flows may report a positive net income, this does not guarantee a positive cash flow for that period. Also, determining which activity the positive cash flows originate from is critical analytical information for the stakeholders. At the end of the day, operating activities must be able to sustain a positive cash flow for the company to survive. There are ratios that assess the operating activities cash flow, but trends or industry standards are also needed in order for the results to be informative. Two of the common ratios used are the current cash debt coverage ratio and the cash debt coverage ratio. Free cash flow analysis is another technique used, and it calculates the remaining cash flow from the operating activities section after deducting cash spent on capital expenditures, such as purchasing property, plant and equipment. Some companies also deduct cash paid dividends. The cash flow remaining is available to the company for strategies such as expansion, repayment of long-term debt, or down-sizing share holdings to improve the share price, reduce the amount of dividends to pay, and to attract future investors.

LO 7: Review and understand a comprehensive example of an indirect and direct statement of cash flows that includes complex transactions from intermediate accounting courses.

Examples of how to prepare a SCF using the indirect and direct method are explained previously in the chapter. The examples include complex transactions including investments classified as available for sale, accrued pension liabilities, deferred income taxes, bonds issued as a discount with amortization, bonds converted to shares, stock options, and re-acquisition of shares.

LO 8: Discuss specific items that affect the statement of cash flows.

Several issues are identified, and discussed, in this section in terms of their effect on the SCF. These include what makes up cash equivalents, restricted cash or cash equivalents, bank overdrafts, discontinued operations, impairments of assets, investments in associates, comprehensive income, netting of old and new liabilities, leases, complex financial instruments, and stock splits and dividends.

LO 9: Summarize the differences between ASPE and IFRS regarding reporting and disclosure requirements of the statement of cash flows.

The differences are identified throughout the chapter.

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21.11: References

CPA Canada. (2016). *CPA handbook*. Toronto, ON: CPA Canada.

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21.12: Exercises

20.1

Below is a list of independent transactions:

Description	Section	Cash Flow
		In (Out)
Issue of bonds payable of $500 cash		
Sale of land and building of $60,000 cash		
Retirement of bonds payable of $20,000 cash		
Redemption of preferred shares classified as debt of $10,000		
Current portion of long-term debt changed from $56,000 to $50,000		
Repurchase of company's own shares of $120,000 cash		
Amortization of a bond discount of $500		
Issuance of common shares of $80,000 cash		
Payment of cash dividend of $25,000 recorded to retained earnings		
Purchase of land of $60,000 cash and a $100,000 note (the note would be a non-cash transaction that is not directly reported within the body of the SCF but requires disclosure in the notes to the SCF)		
Cash dividends received from a trading investment of $5,000		
Increase in an available for sale investment due to appreciation in the market price of $10,000		
Interest income received in cash from an investment of $2,000		
Leased new equipment under an operating lease for $12,000 per year		
Interest and finance charges paid of $15,000		
Purchase of equipment of $32,000		
Increase in accounts receivable of $75,000		
Leased new equipment under a finance lease with a present value of $40,000		
Purchase of 5% of the common shares of a supplier company for $30,000 cash		

Decrease in a sales related short term note payable of $10,000		
Made the annual contribution to the employee's pension benefit plan for $220,000		
Increase in income taxes payable of $3,000		
Purchase of equipment in exchange for a $14,000 long-term note		

Required: For each transaction, identify which section of the SCF it is to be reported under and indicate if it is a cash in-flow (positive) or cash out-flow (negative). Hint: recall the use of the accounting equation to help determine if an amount is positive or negative. Assume that the company policy is for interest paid or received, and dividends received, to be listed as operating cash flows, and for dividends paid to be listed as financing cash flows.

20.2

Below are the unclassified financial statements for Rorrow Ltd. for the year ended December 31, 2020:

Rorrow Ltd.						
Balance Sheet						
As at December 31, 2020						
		2020			2019	
Cash		$	152,975		$	86,000
Accounts receivable (net)			321,640			239,080
Inventory			801,410			855,700
Prepaid insurance expenses			37,840			30,100
Equipment			2,564,950			2,156,450
Accumulated depreciation, equipment			(625,220)			(524,600)
Total assets		$	3,253,595		$	2,842,730
Accounts payable		$	478,900		$	494,500
Salaries and wages payable			312,300			309,600
Accrued interest payable			106,210			97,180
Bonds payable, due July 31, 2028			322,500			430,000
Common shares			1,509,300			1,204,000
Retained earnings			524,385			307,450
Total liabilities and shareholders' equity		$	3,253,595		$	2,842,730

Rorrow Ltd.			
Income Statement			
For the Year Ended December 31, 2020			
Sales		$	5,258,246
Expenses			

Cost of goods sold			3,150,180
Salaries and benefits expense			754,186
Depreciation expense			100,620
Interest expense			258,129
Insurance expense			95,976
Income tax expense			253,098
			4,612,189
Net income		$	646,057

Required:

a. Complete the direct method worksheet for the operating activities section for the year ended December 31, 2020.

b. Prepare the operating activities section for Rorrow Ltd. for the year ended December 31, 2020.

20.3

Below is the unclassified balance sheet for Carmel Corp. as at December 31, 2020:

Carmel Corp.					
Balance Sheet					
as at December 31, 2020					
Cash	$	84,000	Accounts payable	$	146,000
Accounts receivable (net)		89,040	Mortgage payable		172,200
Investments – trading		134,400	Common shares		400,000
Buildings (net)		340,200	Retained earnings		297,440
Equipment (net)		168,000		$	1,015,640
Land		200,000			
	$	1,015,640			

The net income for the year ended December 31, 2021 was broken down as follows:

Revenues		$	1,000,000
Gain			2,200
Total revenue			1,002,200
Expenses			
Operating expenses			809,200
Interest expenses			35,000
Depreciation expense – building			28,000
Depreciation expense – equipment			20,000
Loss			5,000
			897,200
Net income			105,000

The following events occurred in 2021:

i. Investments in traded securities are short-term securities and the entire portfolio was sold for cash at a gain of $2,200. No new investments were purchased in 2021.
ii. A building with a carrying value of $225,000 was sold for cash at a loss of $5,000.
iii. The cash proceeds from the sale of the building were used to purchase additional land for investment purposes.
iv. On December 31, 2021, specialized equipment was purchased in exchange for issuing an additional $50,000 in common shares.
v. An additional $20,000 in common shares were issued and sold for cash.
vi. Dividends of $8,000 were declared and paid in cash to the shareholders.
vii. The cash payments for the mortgage payable during 2021 included principal of $30,000 and interest of $35,000. In 2022, the cash payments will consist of $32,000 principal and $33,000 interest.
viii. All sales to customers, and purchases from suppliers for operating expenses, were on account. During 2021, collections from customers totalled $980,000 and cash payments to suppliers totalled $900,000.
ix. Ignore income taxes for purposes of simplicity.
x. The company's policy is to classify interest received and paid, and dividends received in operating activities. Dividends paid are classified in financing activities.
xi. Changes in other balance sheet accounts resulted from usual transactions and events.

Required:

a. Prepare a statement of cash flows in good form with all required disclosures for the year ended December 31, 2021. The company prepares this statement using the indirect method.
b. Calculate the company's free cash flow, and discuss the company's cash flow pattern, including details about sources and uses of cash.
c. How can the information from the statement of cash flows be beneficial to the company stakeholders (i.e., creditors, investors, management, and others)?

20.4

Below is the comparative balance sheet for Lambrinetta Industries Ltd.:

Lambrinetta Industries Ltd.						
Balance Sheet						
		December 31				
Assets:		2021			2020	
Cash		$	32,300		$	40,800
Accounts receivable			79,900			107,100
Investments – trading			88,400			81,600
Land			86,700			49,300
Plant assets			425,000			345,100
Accumulated depreciation – plant assets			(147,900)			(136,000)
Total assets			564,400			487,900
Liabilities and Equity:						
Accounts payable		$	18,700		$	6,800
Current portion of long-term note			8,000			10,000
Long-term note payable			119,500			75,000
Common shares			130,900			81,600
Retained earnings			287,300			314,500
Total liabilities and equity		$	564,400		$	487,900

Additional information:

i. Net income for the year ended December 31, 2021 was $161,500.
ii. Cash dividends were declared and paid during 2021.
iii. Plant assets with an original cost of $51,000, and with accumulated depreciation of $13,600, were sold for proceeds equal to book value during 2021.
iv. The investments are reported at their fair value on the balance sheet date. During 2021, investments with a cost of $12,000 were purchased. No other investment transactions occurred during the year. Fair value adjustments are reported directly on the income statement.
v. In 2021, land was acquired through the issuance of common shares. There were no other land transactions during the year. The balance of the common shares issued were for cash.

vi. The company's policy is to classify interest received and paid, and dividends received, in operating activities, and to classify dividends paid in financing activities.
vii. Note that payable arose from a single transaction.
viii. Changes in other balance sheet accounts resulted from usual transactions and events.

Required: Using the indirect method, prepare the statement of cash flows for the year ended December 31, 2021, in good form, including all required disclosures identified in the chapter material. The company follows ASPE.

20.5

Below is a comparative statement of financial position for Egglestone Vibe Inc. as at December 31, 2021:

Egglestone Vibe Inc.						
Statement of Financial Position						
		December 31				
Assets:		2021			2020	
Cash		$	84,500		$	37,700
Accounts receivable			113,100			76,700
Inventory			302,900			235,300
Investments – available for sale (OCI)			81,900			109,200
Land			84,500			133,900
Plant assets			507,000			560,000
Accumulated depreciation – plant assets			(152,100)			(111,800)
Goodwill (net)			161,200			224,900
Total assets			1,183,000			1,265,900
Liabilities and Equity:						
Accounts payable		$	38,100		$	66,300
Dividend payable			19,500			41,600
Notes payable			416,000			565,500
Common shares			322,500			162,500
Retained earnings			374,400			370,200
Accumulated other comprehensive income			12,500			59,800
Total liabilities and equity		$	1,183,000		$	1,265,900

Additional information:

i. Net income for the 2021 fiscal year was $24,700.
ii. On March 1, 2021, land was purchased for expansion purposes. On July 12, 2021, another section of land with a carrying value of $111,800 was sold for $150,000 cash.

iii. On June 15, 2021, notes payable of $160,000 were retired in exchange for the issuance of common shares. On December 31, 2021, notes payable of $10,500 were issued for additional cash flow.
iv. Available for sale investments (OCI) were purchased during 2021 for $20,000 cash. By year-end, the fair value of this portfolio dropped to $81,900. No investments from this portfolio were sold in 2021.
v. At year-end, plant assets originally costing $53,000 were sold for $27,300 since they were no longer contributing to profits. At the date of the sale, the accumulated depreciation for the assets sold was $15,600.
vi. Cash dividends were declared and a portion were paid in 2021. These dividends are reported under the financing section.
vii. Goodwill impairment loss was recorded in 2021 to reflect an impairment of the cash-generating unit (CGU), including goodwill.
viii. The company's policy is to classify interest received and paid, and dividends received in operating activities, and dividends paid in financing activities.
ix. Changes in other statement of financial position accounts resulted from usual transactions and events.

Required:

a. Prepare a statement of cash flows in good form, including all required disclosures identified in the chapter material. The company uses the indirect method to prepare the statement.
b. Analyze and comment on the results reported in the statement.

20.6

Below are unclassified financial statements for Bognar Ltd. at December 31, 2020, and selected additional information taken from

the accounting records:

Bognar Ltd.						
Comparative Statement of Financial Position						
December 31, 2020						
		2020			2019	
Cash		$	5,500		$	21,000
Accounts receivable, net			297,000			189,000
Investments – held for trading			209,000			241,500
Inventory			809,600			663,600
Land			363,000			430,500
Building			1,144,000			1,176,000
Accumulated depreciation, building			(517,000)			(399,000)
Machinery			1,188,000			918,750
Accumulated depreciation, machinery			(240,900)			(222,600)
Goodwill			49,500			115,500
		$	3,307,700		$	3,134,250
Accounts payable		$	57,200		$	94,500
Bonds payable, due 2031 (net)			1,089,000			1,034,250
Deferred tax payable (non-current)			26,400			69,300
Preferred shares			1,152,800			885,150
Common shares			305,500			199,500
Common stock conversion rights			525,000			525,000
Retained earnings			151,800			326,550
		$	3,307,700		$	3,134,250

Statement of Income

For the Year Ended December 31, 2020			
Sales		$	1,852,400
Cost of goods sold			1,213,300
Gross profit			639,100
Depreciation, building			121,000
Depreciation, machinery			82,500
Goodwill impairment			66,000
Interest expense			126,500
Other operating expenses			342,100
Loss in held for trading investment			32,500
Gain on sale of land			(24,200)
Loss on sale of machine			10,800
Loss before income tax			(118,100)
Income tax, recovery			59,400
Net loss		$	(58,700)

Additional information:

i. No held for trading investments were purchased or sold. These investments are not cash equivalents.
ii. A partially depreciated building was sold for an amount equal to its carrying value.
iii. Cash of $50,000 was received on the sale of a machine that originally cost $125,000. Additionally, other machinery was purchased during 2020.
iv. Bonds payable are convertible to common shares at the rate of 15 common shares for every $1,000 bond after August 1, 2022. No new bond issuances occurred in 2020.
v. Preferred shares were issued for cash on May 1, 2020. Dividends of $40,000 were paid on these shares in 2020.
vi. In 2020, 25,000 common shares were purchased and retired. The shares had an average issue price of $60,000 and were repurchased for $65,000. Also in 2020, 50,000 common shares were issued in exchange for machinery.
vii. The company's policy is to classify interest received and paid, and dividends received in operating activities, and dividends paid in financing activities.
viii. Changes in other statement of financial position accounts resulted from usual transactions and events.

Required:

a. Prepare the statement of cash flows three-step worksheet for Bognar Ltd. for the year ended December 31, 2020 using the direct method. Include supplemental disclosures, if any.
b. Using the information from part (a), prepare the statement of cash flows operating activities section.
c. Prepare the operating activities section of the statement of cash flows for Bognar Ltd. for the year ended December 31, 2020 using the indirect method. Include supplemental disclosures, if any.

20.7

The following are a list of transactions for an ASPE company, Verdon Ltd., for 2020:

i. Land asset account increased by $98,000 over the year. In terms of activity during the year, land that originally cost $80,000 was exchanged, along with a cash payment of $5,000, for five acres of undeveloped land appraised at $100,000. Three months later, additional land was acquired for cash.

ii. Equipment asset account had an opening balance of $70,000 at the beginning of the year, and $60,000 closing balance at year-end. Accumulated depreciation opening balance was $20,000 and its closing balance was $6,600. Equipment which originally cost $15,000 (and was fully depreciated) was sold during the year for $2,000. There was also equipment that originally cost $4,000, with a carrying value of $1,200, that was discarded. During the year, there was new equipment purchased for cash.
iii. Half way through the current year, the company entered into a six year capital lease for some equipment. The lease term called for six annual payments of $20,000, to be paid at the beginning of each year. Upon signing the lease agreement, the first payment was made. The equipment will revert back to the lessor at the end of the lease term. The implicit rate for the lease was 8%, which was known to the lessee.

Required:

a. Prepare the journal entries for Verdon Ltd. that relate to each of the changes in each asset account for 2020. Include entries for current year cash payments, depreciation, and interest, if any.
b. Identify and classify the cash flows for each of the transactions identified in part (a).
c. Prepare a partial SCF: operating activities, using the indirect method, including supplemental disclosures, if any. Assume no other transactions occurred in the current year for this company other than those identified in this question.

20.8

Below are unclassified financial statements for Aegean Anchors Ltd. at December 31, 2020, and selected additional information

taken from the accounting records.

Aegean Anchors Ltd.									
Comparative Statement of Financial Position									
December 31, 2020									
		2020			2019			Increase	
								(Decrease)	
Cash		$	33,960		$	53,280		$	(19,320)
Accounts receivable, net			1,015,680			920,040			95,640
Inventory			861,120			810,000			51,120
Equipment			3,679,680			3,439,680			240,000
Accumulated depreciation, equipment			(1,398,000)			(1,212,000)			186,000
Investment in Vogeller Ltd., at equity			345,600			319,200			26,400
Note receivable			301,800			0			301,800
		$	4,839,840		$	4,330,200			
Bank overdraft		$	171,120		$	87,480		$	83,640
Accounts payable			904,320			977,520			(73,200)
Income tax payable			44,400			55,200			(10,800)
Dividends payable			78,000			102,000			(24,000)
Obligations under lease			324,000			0			324,000
Common shares			1,080,000			1,080,000			0
Retained earnings			2,238,000			2,028,000			210,000

		$	4,839,840		$	4,330,200			

Additional information:

i. Net income for 2020 was $288,000. The income taxes paid were $181,000.
ii. The amount of interest paid during the year was $18,000, and the amount of interest received was $11,300.
iii. On January 2, 2020, Aegean Anchors Ltd. sold equipment which cost $84,000 (with a carrying amount of $53,000) for $50,000 cash.
iv. On December 31, 2019, Aegean Anchors Ltd. acquired 25% of Vogeller Ltd.'s common shares for $319,200. On that date, the carrying value of Vogeller Ltd.'s assets and liabilities were $1,276,800, which approximated their fair values. Vogeller Ltd. reported net income of $105,600 for the year ended December 31, 2020, and no dividend was paid on their common shares during 2020.
v. On January 2, 2020, Aegean Anchors Ltd. loaned $350,000 to Vancorp Ltd. (the company is not related to Aegean Anchors Ltd.). Vancorp Ltd. made the first semi-annual principal repayment of $48,200, plus interest at seven percent, on December 31, 2020.
vi. The bank overdraft identified in the comparative statement of financial position is a line of credit, payable on demand.
vii. On December 31, 2020, Aegean Anchors Ltd. entered into a finance lease for equipment. The present value of the annual lease payments is $324,000, which equals the equipment's fair value. Aegean made the first payment of $57,000 on January 2, 2021 when it was due.
viii. Aegean Anchors Ltd. declared and paid dividends in 2019 and 2020. In 2019, a dividend for $102,000 was declared to the shareholders on record at December 15, 2019. This dividend was paid on January 10, 2020. In 2020, a dividend for $78,000 was declared on December 15, 2020 and was paid on January 10, 2021.
ix. The company's policy is to classify interest received and paid, and dividends received in operating activities, and to classify dividends paid in financing activities.
x. Changes in other statement of financial position accounts resulted from usual transactions and events.

Required: Prepare a statement of cash flows for Aegean Anchors Ltd. for the year ended December 31, 2020, using the indirect method. Include supplemental disclosures, if any.

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CHAPTER OVERVIEW

Chapter 22: Changes and Errors

Cooking the Books?

In July 2013, retail book giant Barnes & Noble created some headlines in the business press that were less than welcome. Earlier in the month, the company's CEO resigned. By late July, the company released its annual report for the year ended April 27, 2013, and reported that financial statements for the previous two fiscal years were to be restated due to material errors resulting from inadequate controls over the accrual reconciliation process at its distribution centres. The audit report stated that the company had not maintained effective internal control over financial reporting. When the financial statements were released, the company's share price immediately dropped by 5% to $17.51.

While the admission of internal control problems is certainly worrying to investors, the restatements made in the prior years actually improved the reported results. Cost of sales was reduced by $8.5 million in 2011 and by $6.7 million in 2012, which improved the reported profit and earnings per share amounts. However, more interesting was the adjustment to previously reported retained earnings. The company increased retained earnings by almost $95 million at the start of the 2011 fiscal year and reduced accounts payable by a similar amount. This had a significant positive effect on the company's net equity position. However, despite the adjustments, the company was still experiencing current losses.

While an improvement in the balance sheet is generally viewed positively, in this case shareholders and regulators were not impressed. On December 6, 2013, the Securities and Exchange Commission (SEC) announced it would be investigating Barnes & Noble's accounting practices, causing an immediate 11% drop in the share price. Then, on December 19, 2013, a shareholder launched a lawsuit against the company, claiming that the company had not properly exercised its fiduciary duties to its shareholders. By the end of December 2013, the share price had dropped by 25% from the price in July when the financial results were first reported.

Accounting is no different than any other activity that involves human judgment: errors can occur. And when errors in reported financial results come to light the effects can be profound. As seen in the example of Barnes & Noble, readers of financial statements can react negatively to the news of errors in previously reported results. As such, accountants need to be acutely aware of their responsibility to correct such errors and of their requirements to fully disclose such information. Changes in reported financial results, even if positive, can still cause a loss of confidence by the readers, and those readers may begin to doubt the integrity of other disclosures.

(Sources: Barnes & Noble, 2014; Dolmetsch, 2013; Solomon, 2013)

Learning Objectives

After completing this chapter, you should be able to:

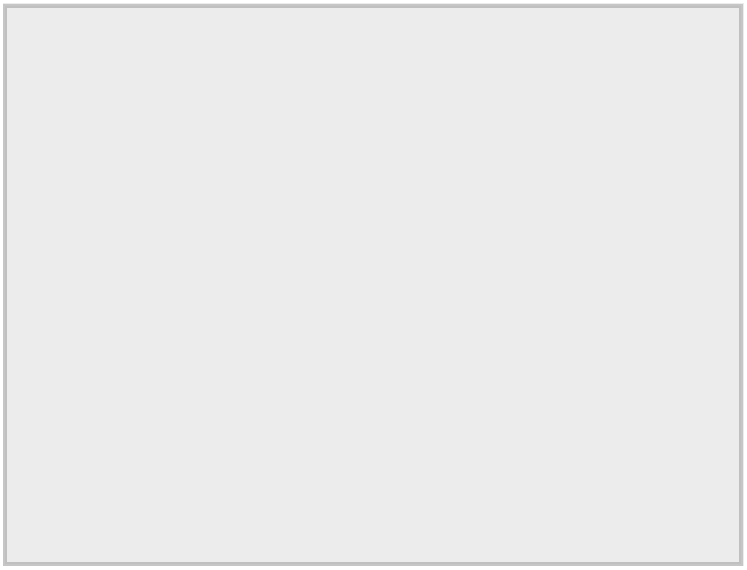
- Describe the different types of accounting changes.
- Apply the appropriate method of accounting for an accounting policy change.
- Apply the appropriate method of accounting for an accounting estimate change.
- Apply the appropriate method of accounting for an error correction.
- Identify the disclosure requirements for different types of accounting changes.
- Describe the key differences between IFRS and ASPE with respect to the treatment of accounting changes and error corrections.

Introduction

As we have discovered in our previous discussions, accounting and financial reporting are time-sensitive activities. While the balance sheet represents the financial position of a company at a single point in time, the income statement and cash flow statements represent results for a defined period of time, usually one year. In attempting to present the economic truth of a company within the limitations of time, accountants are required to make choices, judgments, and estimations. It can be as simple as the

choice of which depreciation method to use or determining the appropriate useful life for a piece of equipment. It is possible, however, that when accountants apply their judgment to make choices or estimates their judgment may later prove to be incorrect. Despite the extensive professional training that accountants receive, they can still make mistakes. Additionally, the need to produce timely information to fulfill the requirements of financial statement readers may sometimes result in less reliable information. In this chapter, we will examine different types of situations that can lead to both the revision of previously published financial information and to changes in the presentation of financial statements in the current and future periods.

Chapter Organization



22.1: IAS 8
22.2: Changes in Accounting Policies
22.3: Changes in Accounting Estimates
22.4: Corrections of Errors
22.5: Presentation and Disclosure
22.6: Examples
22.7: IFRS/ASPE Key Differences
22.8: Chapter Summary
22.9: References
22.10: Exercises

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22.1: IAS 8

IAS 8 addresses the selection of accounting policies, changes in accounting policies, changes in accounting estimates, and corrections of errors. The standard is designed to ensure that the financial information is both relevant and reliable, but is also comparable with previous periods and with other entities. The standard is, thus, consistent with the objectives of the *Conceptual Framework*.

The standard indicates that the initial selection of accounting policies should follow the principles and guidance included in the IFRS, unless there is no IFRS that relates to the transaction in question. In such a case, management must apply judgment in selecting accounting policies that are both relevant and reliable. It is interesting that while the discussion of accounting policy choice in IAS 8 is generally consistent with the basic principles of the conceptual framework, an additional descriptor "prudent" is included. This would seem to place an additional level of responsibility on management to choose accounting policies that are not misleading. The initial discussion also states that accounting policies should be applied consistently for similar transactions, events, and conditions.

IAS 8 further describes three situations where changes to accounting information may be required:

- Changes in accounting policies
- Changes in accounting estimates
- Corrections of errors

We will examine each of these individually to determine the appropriate accounting treatment.

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22.2: Changes in Accounting Policies

IAS 8 allows accounting policies to be changed in only two situations:

- The policy change is required by an IFRS.
- The new policy results in financial statements that are reliable and more relevant.

In the first case, the IFRS itself will usually provide guidance on how and when to implement the change. Sometimes these transitional procedures are quite complex, but IFRS generally allows reasonable amounts of time for companies to adapt to the new policies. As a general rule, the more complex the issues involved in the new policies, the longer the transition period allowed. For example, IFRS 15, the new revenue recognition standard, was published in May 2014, but companies are not required to implement it until January 1, 2018. Most new IFRSes allow for early adoption, that is, before the required transition date, and many companies will be proactive and implement the change early.

The second situation is referred to as a voluntary policy change. For this type of change the resulting information must still be considered sufficiently reliable and must also be more relevant. This condition obviously creates a situation where management must demonstrate logic and sound judgment. It is not generally sufficient to change accounting policies simply to create an effect in net income without providing any further justification. Management would need to demonstrate that the new policy better meets the needs of the financial statement readers in terms of helping them to understand the underlying economic reality of the company. As well, management would have to demonstrate that the level of reliability inherent in the information is still sufficient to meet the general requirement of representational faithfulness. A simple example of this type of change would be a company's decision to report certain property, plant, and equipment assets under the revaluation model rather than the cost model. The company may think that current value information is more helpful to financial statement readers than historical cost information. While this justification is quite reasonable, the company would have to make sure that the information on fair values had sufficient reliability to justify the change in policy. Note that the new level of reliability does not have to equal that of the old policy, but must simply be considered sufficient. In our example, while it is unlikely that fair value information would be as reliable as historical cost information, the new information could still be considered sufficiently reliable under the requirements of the fair value hierarchy.

Of course, it is not always easy to prove that one type of information is more relevant than another. Relevance is very subjective, and readers of financial statements will have different ideas of what information they require. As well, the question of relevance is unique to each business, and different companies may come to different conclusions about the accounting policy choices that they need to implement. In each case, management and the accountants advising them will need to use sound judgment and good sense in order to choose the best accounting policies suited to the circumstances facing the company.

Applying Voluntary Accounting Policy Changes

IAS 8 requires voluntary accounting policy changes to be treated retrospectively, meaning that after the new policy has been applied, the financial statements should appear as if the policy has always been in effect. The purpose of this approach is to maintain the comparability of current financial results with previous periods. Readers of financial statements need to make decisions regarding current results, and one of the criteria they may use is the change in performance from previous periods. Obviously, if an accounting policy was changed, and the prior periods were not restated, it would be impossible to make any meaningful comparisons.

Several steps are involved in retrospective application of policy changes:

1. The cumulative effect of the policy change on previous periods must be determined.
2. A journal entry is made to record the effect of this change. This adjustment will affect the appropriate category of equity and any other balance sheet amounts at the start of the current period.
3. Any financial statements that are presented for comparative purposes will also be restated to reflect the policy change. The opening balance of the relevant equity account on the earliest financial statement presented will need to be adjusted for the cumulative effect at that time. As well, any earnings per share disclosures will need to be adjusted.
4. Disclosures are made to provide details of the reasons and effects of the policy change.

These steps can be demonstrated with the following example. Dameron Inc. purchased a piece of vacant land on January 1, 2020. The company intended to develop the property into a commercial shopping mall. The original purchase price was $2,000,000 and

the company chose to apply the cost method to the property. However, in 2022, the company decided to then apply the fair value method as allowed under IAS 40, as management believed that this method would provide more relevant information to financial statement readers. No development work had yet been performed on the property, but the company was able to obtain independent, reliable appraisals of the fair value of the property as follows:

Appraisal Date		Appraised Value
31 December 2020		$1,850,000
31 December 2021		$2,100,000
31 December 2022		$2,275,000

On the 2020 and 2021 financial statements, the property was originally reported at its historical cost, which means there was no effect on the reported income in those periods. The company pays corporate income tax at the rate of 20%. The following information summarizes the effects of the change (take the income before tax figures as given):

Cost Method Applied		**2022**			**2021**			**2020**	
Income Statement:									
Income before tax		$	750,000		$	720,000		$	680,000
Income tax			150,000			144,000			136,000
Net income		$	600,000		$	576,000		$	544,000
Retained Earnings Statement:									
Opening balance		$	2,045,000		$	1,469,000		$	925,000
Net income			600,000			576,000			544,000
Closing balance		$	2,645,000		$	2,045,000		$	1,469,000

Fair Value Method Applied		**2022**			**2021**			**2020**	
Income Statement:									
Net income before tax		$	925,000		$	970,000		$	530,000
Income tax			185,000			194,000			106,000
Net income		$	740,000		$	776,000		$	424,000
Retained Earnings Statement:									
Opening balance		$	2,125,000		$	1,349,000		$	925,000
Net income			740,000			776,000			424,000
Closing balance		$	2,865,000		$	2,125,000		$	1,349,000

Recall that the effect of applying IAS 40 is that every year, any changes in the fair value of the investment property will be reported as a gain or loss directly on the income statement. For example, in 2020 the property's fair value drops by $150,000 ( ) during the year, so net income is reduced accordingly from $680,000 to $530,000. In 2021, the fair value increases by $250,000 ( ) so the income in that year is increased. Note as well that there is an income tax

effect to the change each year. Although changes in fair value of an investment property are not usually directly taxable, there would still be an effect on the deferred taxes reported by the company.

In 2022, the company needs to record the effect of the change on opening balances. The books for 2020 and 2021 are already closed, but the books for 2022 are open. Thus, the cumulative effect up to the end of 2021 must be adjusted through retained earnings, net of the relevant tax effect. The fair value of the property on December 31, 2021 is $2,100,000 while the original cost is $2,000,000. A gain of $100,000 must be reflected in the carrying amount of the investment. The effect on the prior year's net income would be $80,000 ($100,000 gain less the tax effect) and the remaining $20,000 is reported as a deferred tax liability. The following journal entry will record this effect:



This journal entry corrects the land and deferred tax liability balances to the values that would have existed had the policy been implemented when the land was first purchased. As adjustments under IAS 40 flow to the income statement, the correct equity account to capture the net effect of the adjustment is retained earnings. In 2022, now that the policy has been implemented, the company will simply report the adjustment to fair value in the normal fashion as required by IAS 40.

If 2020 and 2021 are both being presented as comparative information in the 2022 financial statements, then the revised statements above would be presented with the heading "restated," along with note disclosures describing the change (this will be discussed later in the chapter). However, many companies only present one year as comparative information on current financial statements. If Dameron Inc. uses the former approach, then the retained earnings portion of the statement of changes in shareholders' equity would look like this:

		2022			**2021**	
					(Restated)	
Opening balance, as previously stated					$	1,469,000
Effect of accounting policy change, net of taxes of $30,000						(120,000)
Opening balance, restated		$	2,125,000			1,349,000
Net income for the year			740,000			776,000
Closing balance		$	2,865,000		$	2,125,000

By identifying the effect of the change on opening retained earnings, the financial statements allow readers to compare the results to previously published financial statements. As well, IFRS requires the presentation of an opening restated balance sheet for the earliest comparative period. This presentation, along with the explanatory notes, should help maintain the consistency needed to satisfy the decision needs of those financial statement readers.

Impracticability

IAS 8 contemplates the possibility that it may be impracticable to apply an accounting change retrospectively. This may occur when, despite the accountant's best efforts, the information needed to determine the effect on prior periods is not available. Additionally, it is possible that in order to determine the effect assumptions need to be made about management's intentions in a prior period. Another possibility is that assumptions about conditions existing at the previous financial statement date need to be made in order to determine the effect. However, it is impossible for the accountant to determine if that information would have been available. When any of these circumstances occur, it is impossible for the accountant to reliably determine the effect of the policy change on prior period financial statements. It is important that the accountant not apply hindsight when determining the practicability of applying an accounting change. Information may have become available after a previous reporting period, but the

accountant shouldn't use this information to make estimates for that period or to determine management intent if it wasn't available at the time.

Obviously, the accountant will need to apply reasoned judgment to determine if retrospective application is warranted or not. If, after careful consideration of all the facts, the accountant decides that retrospective application is impracticable, then the accountant can only apply the change to the earliest possible period where it is practicable. This means that the accountant may be able to partially apply the retrospective technique, that is to some previous years, but not to all. If there is no way to determine the effect of the change on prior periods, then the change will be applied prospectively, that is in the current year and in future years only. Additionally, full disclosure must be made for the reasons for not applying the change retrospectively.

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22.3: Changes in Accounting Estimates

As we have seen in previous chapters, many accounting assertions require the use of estimates. Some more common estimates include the useful life of a piece of equipment, the percentage of accounts receivable that are expected to be uncollectible, and the net realizable value of obsolete inventory. The use of estimates is considered to be a normal part of the accounting process, and it is presumed that the accountant, when making an estimate, will take into account all the relevant information that is available at that time. However, new information can become available in later accounting periods that will cause accountants to reconsider their original estimates. If this information was not available at the time of the original estimate, it would be inappropriate to go back and restate prior period financial results. As such, changes in accounting estimates are treated prospectively, meaning financial results are adjusted to reflect the new information in the current year and in future periods. No attempt is made to determine the effect on prior years, and no adjustment to opening balances is necessary.

Consider the following example. Umbach Inc. purchased a machine to be used in its manufacturing facility on January 1, 2020. The machine cost $120,000 and was expected to be used for eight years, with no residual value. On January 1, 2022, an engineering review of the machine's performance indicated that its useful life is now six years instead of eight.

The machine would have been originally depreciated at $15,000 ( ) per year. Thus, on January 1, 2022, the carrying amount of the machine would have been $90,000 ( ). On January 1, 2022, the remaining useful life is now four years ( ). The new depreciation amount will therefore be $22,500 ( ) per year. On December 31, 2022, the following journal entry will be made:



Note that we are simply recording the new depreciation amount in the normal fashion without making any attempt to restate prior depreciation amounts. This is the essence of prospective application: simply recalculating the amount based on the new information, and using this amount for current and future years only.

In some cases, however, it may not be clear if a change is a change in estimate or a change in policy. For example, changing from straight-line depreciation to declining balance depreciation may appear to be a change in policy. However, this change might, in fact, reflect a revision of management's view of how the pattern of benefits is being derived from the asset's use. In this case, the change would be treated as a change in estimate. If it is not clear whether a change is change in policy or a change in estimate, IAS 8 suggests that the change should be treated as a change in estimate.

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22.4: Corrections of Errors

Given the complex nature of some accounting transactions, it is inevitable that errors in reported amounts will sometimes occur. IAS 8 defines errors as both omissions and misstatements, and suggests that errors result from the failure to use or misuse of reliable information that was available and could have reasonably been expected to be obtained when the financial statements were issued. Thus, management cannot claim that a misstatement is simply a change in estimate if they did not take reasonable steps to verify the original amount recorded. IAS 8 also suggests that errors can include mathematical mistakes, mistakes in application of accounting policies, oversights, misinterpretations of facts, and fraud. We can see that there is quite a range of potential causes of financial misstatements. However, regardless of the cause, errors need to be corrected once they are discovered.

If the error is discovered before the financial statements are issued, then the solution is simple: correct the error. This is a normal part of the accounting and audit cycle of a business, and the procedure of correcting errors with year-end adjusting journal entries is quite common. However, if the error is not discovered until after the financial statements have been published, then the company faces a much larger problem. If the error is discovered soon after the financial statements are published, it may be possible to recall the documents and republish a corrected version. However, it is more likely that the error will not be discovered until financial statements are being prepared for a subsequent year. In this case, the error will appear in the amounts presented as comparative figures, and will likely also have an effect on the current year. In this case, the error should be corrected through a process of retrospective restatement, similar to the procedures used for accounting policy changes. Note that a subtle difference in terminology is used: accounting policy changes are retrospectively *applied*, while error corrections result in retrospective *restatements*. Despite the difference in terms, the basic principle is the same: a retrospective restatement results in financial statements that present the comparative and current amounts as if the error had never occurred.

Consider the following example. In preparing its 2022 financial statements, management of Manaugh Ltd. discovered that a delivery truck purchased early in 2020 had been incorrectly reported as a repair and maintenance expense in that year rather than being capitalized. The vehicle's cost was $50,000 and was expected to have a useful life of five years with no residual value. Assume that depreciation for tax purposes is calculated in the same way as for accounting purposes, and that the company's tax rate is 20%. Also assume that prior year tax returns will be refilled to reflect the correction of the error.

Prior to the discovery of the error, the company reported the following results on its 2022 draft financial statements:

		2022			**2021**	
		(Draft)				
Revenue		$	900,000		$	850,000
Expenses			690,000			625,000
Income before tax			210,000			225,000
Income tax			42,000			45,000
Net income			168,000			180,000
Opening retained earnings			1,230,000			1,050,000
Closing retained earnings		$	1,398,000		$	1,230,000

In order to correct the error, we need to understand the balances of the relevant accounts prior to the error correction, and what they should be after the error is corrected. This analysis will need to be applied to all years affected by the error. Although there is no prescribed format for evaluating the effects of errors, a tabular analysis, as shown below, is often useful:

		2022		2021		2020
Repair expense incorrectly included						50,000
Depreciation expense, incorrectly excluded		(10,000)		(10,000)		(10,000)
Net effect on income before tax		(10,000)		(10,000)		40,000
Income tax expense over-(under) stated		2,000		2,000		(8,000)
Adjustment required to net income		(8,000)		(8,000)		32,000
Adjustment required to vehicle account		50,000		50,000		50,000
Adjustment required to accumulated depreciation		30,000		20,000		10,000
Adjustment required to income taxes payable		(2,000)		(2,000)		8,000

After analyzing the effects of the error, the following journal entry should be made in 2022 in order to correct the error:



Note that the adjustment corrects the balance sheet accounts, including retained earnings, to the amounts that would have been reported at December 31, 2022, had the error never occurred. The adjustment to retained earnings represents the net effect on income of the correction in 2020 and 2021, that is, . As well, because the books for 2022 have not yet been closed, we are able to adjust the two expense accounts, depreciation and income taxes, directly to the income statement. If, however, the books had already been closed for 2022, then these expense amounts would simply be added to the retained earnings adjustment.

After correcting the error, the financial statements will be presented as follows:

		2022			2021	
					(Restated)	
Revenue		$	900,000		$	850,000
Expenses			700,000			635,000
Income before tax			200,000			215,000
Income tax			40,000			43,000
Net income		$	160,000		$	172,000

The retained earnings portion of the statement of shareholders' equity will include the following information:

		2022			2021	
					(Restated)	
Opening balance, as previously stated					$	1,050,000
Effect of error correction, net of taxes of $8,000						32,000
Opening balance, restated		$	1,254,000			1,082,000
Net income for the year			160,000			172,000
Closing balance		$	1,414,000		$	1,254,000

The difference between the corrected closing retained earnings balance and the uncorrected balance ( ) can be derived directly from the journal entry by adding the prior period retained earnings adjustment to the current year expense adjustments ( ). Also note that the balance sheet will present the corrected amounts for the vehicle, accumulated depreciation, income taxes payable, and retained earnings with the 2021 comparative column labelled as "restated."

Analyzing and correcting errors is one of the most important skills an accountant can possess. This skill requires not only judgment, but also a very solid understanding of the operation of the accounting cycle, as the sources and effects of the errors may not always be obvious. Additionally, the accountant needs to be aware of the causes of the errors, as some parties may prefer that the accountant not detect or correct the error. In such cases of fraud or inappropriate earnings management, managers may deliberately try to hide the error or prevent correction of it. In other cases, management may try to offer explanations that suggest the error is just a change in estimate, not requiring retrospective restatement. Sometimes these justifications may be motivated by factors that don't reflect sound accounting principles. As such, the accountant must be prudent and exhibit good judgment when examining the causes of errors to ensure the final disclosures fairly present the economic reality of the situation.

- A video is available on the Lyryx web site. Click Here to view the video.
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22.5: Presentation and Disclosure

Because changes in accounting policies and errors may fall outside of the normal expectations of financial statement readers, it is not surprising that additional disclosures are required. When an accounting policy is changed, the following disclosures are required:

- If the change results from the initial application of an IFRS then disclosure must be made of the title of the new IFRS being applied, the nature of the change, a description of any transitional provisions, and the potential effect of those transitional provisions on future periods.
- If the change is a voluntary policy change then disclosure must be made of the nature of the change and the reasons why the change results in reliable and more relevant information.
- For both types of change, disclosure must be made of the effects on each financial statement line item and earnings per share in the current and prior periods, and the amount of adjustment that relates to periods prior to the earliest period presented.
- If it was impracticable to apply the change retrospectively to all previous periods, an explanation of the reasons why should be provided along with a description of how the change was applied.
- If the entity has not yet applied a new IFRS (that is, issued but not yet effective), the entity should disclose, where possible, an estimate of the future effects of the new IFRS on financial statements.

When a change in an accounting estimate is applied, the following disclosures are required:

- The nature and the amount of the change, including the effect on the current period and the expected effects on future periods, should be disclosed.
- If the effect on future periods cannot be determined, this fact should be disclosed.

It should be noted that, as with all accounting applications, the principle of materiality applies. As a practical matter, companies may not disclose all changes in estimates if the effects are not deemed to be material. However, companies are sometimes criticized for using immaterial estimate changes as a way to engage in creative earnings management. Obviously, careful consideration needs to be given to the required level of disclosures in cases like these.

For corrections of accounting errors, the following disclosures are required:

- The nature of the prior period error should be disclosed.
- Disclosure must be made of the effects on each financial statement line item and earnings per share in the current and prior periods, and the amount of adjustment that relates to periods prior to the earliest period presented.
- If it was impracticable to retrospectively restate all previous periods, an explanation of the reasons why should be provided along with a description of how the correction was applied.

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22.6: Examples

Review the December 31, 2013 financial statements of Nestlé Group (taken from the company's annual report).

These financial statements provide a number of examples of how accounting changes are handled. First, in Note 1 on page 80, there is a general discussion of the use of estimates. The discussion identifies several areas where estimates are required—provisions, goodwill impairment, employee benefits, allowance for doubtful receivables, and taxes. The note also states that estimate changes are accounted for in the current and future periods to which the change affects, which is consistent with the prospective approach discussed previously in Section 21.3.

On page 117, Note 13.1 on provisions describes the revision of previous estimates by using the phrase "unused amounts reversed."

In addition to the estimate changes, the prior year comparatives were both "restated" and "adjusted." The restatement related to the application of two new IFRSes: IAS 19 and IFRS 11. The application of these new standards resulted in changes to both the income statement and the balance sheet of the previous year. A restated balance sheet on January 1, 2012 was also provided. As well, asset and liability accounts on the restated balance sheet were further adjusted due to a change in the provisional amounts of net assets obtained on the acquisition of a subsidiary company, as complete information was not available at the time of acquisition. This change is treated similarly to an error correction, and the comparative figures have been retrospectively restated. The disclosure of these restatements and adjustments can be found in Note 22 on pages 140 through 146 of the financial statements. As well, Note 2.2 on page 92 provides further details about the adjustments resulting from the acquisition of the subsidiary company.

These examples provide a good illustration of the detail required in the disclosure of accounting changes. This detail can help the readers make better comparisons with previous years' results as well as with other entities, both of which could have an impact on readers' decision-making processes.

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22.7: IFRS/ASPE Key Differences

IFRS	ASPE
A voluntary accounting policy change can only be made if the new policy results in reliable and more relevant information.	A voluntary accounting policy change can be made if either: 1. The new policy results in reliable and more relevant information, or 2. It is a change between alternative methods specifically allowed in certain GAAP standards (investments in subsidiaries, jointly controlled enterprises and associates, intangible assets, defined benefit plans, income taxes, and financial instruments).
Errors should be corrected retrospectively, unless it is impracticable to do so.	Errors should always be corrected retrospectively. There is no recognition of the concept of impracticability for error corrections.
When applying a change retrospectively, a restated balance sheet at the beginning of the earliest comparative period must be presented.	When applying a change retrospectively, the effect on the opening balances of the earliest comparative period should be identified, but a restated opening balance sheet is not required.
Disclosure of the potential future effects of accounting standards issued, but not yet effective, needs to be made.	No disclosures for standards not yet implemented are required.

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22.8: Chapter Summary

LO 1: Describe the different types of accounting changes.

There are three types of accounting changes: a change in accounting policy, which can be either voluntary if the change results in information that is reliable and more relevant, or required by the application of an IFRS; a change in accounting estimate, which presumes that the estimate was made with all the relevant information available at the time; and the correction of an accounting error, which means both omissions and misstatements and can include mathematical errors, mistakes in application of accounting policies, oversights, misinterpretations of facts, and fraud.

LO 2: Apply the appropriate method of accounting for an accounting policy change.

When applying an accounting policy change required by an IFRS, the IFRS will usually provide detailed transition provisions that outline the procedures. Voluntary accounting policy changes should be applied retrospectively, where all current and comparative information are restated as if the policy were always in effect. This means that opening balances will need to be restated, including the relevant equity accounts.

LO 3: Apply the appropriate method of accounting for an accounting estimate change.

Accounting estimate changes should be treated prospectively. This means that the new information is applied to the current year and any future years, if applicable. No attempt is made to restate prior periods, as it is assumed that the previous estimates were made with sound judgment based on all the information available at the time.

LO 4: Apply the appropriate method of accounting for an error correction.

When errors in prior period financial statements are discovered, the errors should be corrected retrospectively. This means that prior balances should be restated as if the error had never occurred. This will also require restatement of the relevant equity accounts.

LO 5: Identify the disclosure requirements for different types of accounting changes.

With retrospective restatement due to policy changes or error corrections, the reasons for the change must be identified and any transitional provisions disclosed. As well, the effects on each financial statement line item and earnings per share for current and prior periods should be identified. Comparative financial statements should be restated, and an opening balance sheet for the earliest comparative period should be presented. If retrospective application is impracticable, an explanation is required. The potential future effects of any IFRSes that are issued but not yet effective must also be disclosed. For estimate changes, the nature of the change and the effects on current and future periods should be disclosed. If the effects on future periods cannot be determined, this fact should be disclosed.

LO 6: Describe the key differences between IFRS and ASPE with respect to the treatment of accounting changes and error corrections.

IFRS only allows accounting policy changes if the new policy results in more relevant and reliable information. ASPE allows policy changes in the same circumstances, and also allows changes between acceptable alternatives identified for certain GAAP standards. ASPE requires errors to be corrected retrospectively, while IFRS requires retrospective restatement unless it is impracticable to do so. For a retrospective change, IFRS requires a restated balance sheet for the earliest comparative period, while ASPE only requires identification of the changes in the affected items. IFRS requires disclosure of the potential effects of accounting standards issued, but not yet effective, while ASPE does not require this disclosure.

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22.9: References

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22.10: Exercises

22.1

Identify if the following changes are an accounting policy change (P), an accounting estimate change (AE), or an error (E).

Item	Type of Change
The useful life of a piece of equipment was revised from five years to six years.	
An accrued litigation liability was adjusted upwards once the lawsuit was concluded.	
An item was missed in the year-end inventory count.	
The method used to depreciate a factory machine was changed from straight-line to declining balance when it was determined that this better reflected the pattern of use.	
A company adopted the new IFRS for revenue recognition.	
The accrued pension liability was adjusted downwards as the company's actuary had not included one employee group when estimating the remaining service life.	
The allowance for doubtful accounts was adjusted upwards due to current economic conditions.	
The allowance for doubtful accounts was adjusted downwards because the previous estimate was based on an aged trial balance that classified some outstanding invoices into the wrong aging categories.	
A company changed its inventory cost flow assumption from LIFO to FIFO, as the newly appointed auditors indicated that LIFO was not allowable under IFRS.	
A company began to apply the revaluation model to certain property, plant, and equipment assets, as it was felt that this presentation would be more useful to investors.	

22.2

The financial controller of McEwan Limited, a publishing company, noted the following two items in a report to the finance director on the preliminary accounts for the year ended December 31, 2021:

- A copyright for a novel originally purchased for $100,000 in 2018 was being amortized over ten years with an expected residual value of $10,000. However, due to poor sales and a scandal earlier this year involving the author, it is now expected that the book will only be commercially viable for another year and the copyright will have no residual value.
- An insurance premium of $1,500 was paid on November 1, 2020, for a one-year policy. The payment was recorded as a debit to insurance expense in 2020.

Required:

a. Discuss the appropriate accounting treatment for two changes above.
b. Assuming the books are closed for 2020 and open for 2021, provide the journal entries required to address the two changes. Ignore income tax effects.

22.3

The accountant of Swift Inc. was preparing for the audit of its financial statements for the year ended December 31, 2022, and discovered that an automobile was being incorrectly depreciated. The automobile was purchased on January 1, 2021, for $50,000 and the estimated residual value after five years was expected to be $5,000. The company uses the straight-line basis for depreciating vehicles, but the residual value was not considered when determining the depreciation amount. The financial

controller informed the accountant that the company was switching to the double-declining balance method of depreciation for the current and future years, as it was believed this method would more accurately portray the consumption of benefits received from the asset's use.

Required: Prepare the journal entries required on December 31, 2022. Ignore income tax effects.

22.4

Aldiss Ltd. currently uses the cost model for reporting its property, plant, and equipment assets. Management has decided to begin applying the revaluation model in the 2022 fiscal year to the company's office building, as it is believed that this will provide more relevant information to the shareholders. Although the company has been using the cost model, the following reliable valuations of the building were obtained:

31 December 2018		$800,000
31 December 2020		$825,000
31 December 2022		$740,000

The building was purchased on January 1, 2018, for $750,000. Straight-line depreciation is used and the estimated useful life is 30 years with no residual value.

Required: Prepare the journal entries required on December 31, 2022, to reflect the accounting policy change. Ignore income tax effects.

22.5

Simic Distributors has been using the weighted average (WA) costing method to report its inventory and cost of sales amounts for several years. Early in 2021, management decided that the FIFO costing method would provide more relevant information to the financial statement readers. The following information regarding year-end inventory amounts has been determined:

Date	**Inventory – WA**	**Inventory – FIFO**
31 December 2018	$500,000	$530,000
31 December 2019	$590,000	$650,000
31 December 2020	$660,000	$730,000

Information for inventory amounts prior to the 2018 fiscal year cannot be obtained. The company's retained earnings balances prior to the change were $1,100,000 on December 31, 2019, and $1,375,000 on December 31, 2020. The company's tax rate is 30%.

Required:

a. Prepare the journal entry required in 2021 to reflect the accounting policy change. Assume the books have been closed for 2020 and for all previous years.
b. Prepare the comparative column of the retained earnings portion of the statement of shareholders' equity that will be presented in the 2021 financial statements. The net income previously reported in 2020 was $275,000.

22.6

The auditors of Boyle Inc. have just completed the fieldwork of the company's first audit for the year ended December 31, 2021. The following potential errors have been identified:

- The balance of the salaries payable account, $52,000 has remained unchanged from the previous year. The controller indicated that the balance should be $45,000.
- On December 28, 2020, a fire destroyed one of the company's delivery vehicles. Insurance proceeds of $8,000 were received on January 16, 2021, and were credited to miscellaneous revenue. The delivery vehicle's original cost was $40,000, and at the time of the fire the accumulated depreciation was $26,000. Further depreciation of $5,000 was recorded in 2021, as the vehicle had not been removed from the equipment subledger.

- Based on deteriorating economic circumstances, the company decided that the allowance for doubtful accounts for 2021 should be 2% of the accounts receivable balance instead of the 1% that had been used in the previous year. The accounts receivable balances were $1,500,000 in 2021 and $1,750,000 in 2020. No entry has yet been made for the 2021 bad debts, and the balance in the allowance for doubtful accounts has remained unchanged from December 31, 2020.
- Due to a number of cut-off errors, the ending inventory balance on December 31, 2020, was overstated by $8,000 and was understated by $12,000 on December 31, 2021.

Required: Prepare the journal entries required to correct the above errors. The books for 2021 are still open, but the books for 2020 have been closed. Ignore income tax effects.

22.7

Spark Ltd. has just completed preparing its financial statements for the year ended December 31, 2022. The assistant controller has brought the following items to the attention of the controller:

- In 2021, $9,000 of repairs expense was mistakenly charged to the equipment account. Depreciation has already been recorded in 2021 and 2022. The company uses straight-line depreciation and records half of the normal depreciation charge in the year of acquisition. The equipment's estimated useful life is six years with no residual value.
- No adjustment has yet been made for accrued interest on a loan receivable. Regular interest payments are made on February 28, May 31, August 31, and November 30, with interest revenue being recorded at the time of the payment. The balance of the loan receivable is $150,000 and the annual interest rate is 8%. The balance of the interest receivable account is $1,000, which is unchanged from the previous year.
- On July 1, 2020 a factory building was purchased for $1,000,000. The full amount of the purchase price was recorded in the building account, but 25% of the cost should have been allocated to land. The building is being depreciated on a straight-line basis with an estimated useful life of 50 years and a residual value of $50,000.
- On September 30, 2022, a fully depreciated factory machine was sold to a scrap metal dealer for $1,500. The original cost of the machine was $52,000. When the machine was sold, the proceeds were credited to the factory machine account.

Required: Prepare the journal entries required in 2022 to correct the above items. The books for 2022 are open, but the books for previous years are closed. Ignore income tax effects.

22.8

You are the senior in charge of the audit of Rankin Ltd. for the year ended December 31, 2021. In the process of reviewing the audit working papers, you discovered the following:

- In 2020, an automobile purchase was incorrectly charged to the repair expense account. The cost of the automobile was $35,000, and its expected useful life was six years with a residual value of $5,000. The company uses double-declining balance depreciation with a full year of depreciation being charged in the year of acquisition.
- In 2019, a lawsuit was launched against the company for a product liability issue. The company's lawyers initially indicated that the company was likely to lose, and a provision of $750,000 was established. Late in 2021, the case was approaching a verdict, and the company's lawyers now indicated that the company would not lose the case and would, therefore, not be required to pay a settlement.
- Goods that were sold on credit for $18,000 on December 28, 2021, FOB destination were recorded as a sale on that date. The customer received the goods on January 4, 2022. The cost of the goods was $11,500.
- In December 2020, an advance deposit of $60,000 was received from a customer for work that was to be completed in 2021. When the deposit was received, it was a recorded as revenue.

Required: Prepare the journal entries required in 2021 to correct the above items. The books for 2021 are open but the books for previous years are closed. The company's income tax rate is 20%.

22.9

You have been asked to provide an analysis of the reported net income of Hodgins Manufacturing Ltd. for the years ended December 31, 2021, and 2020. The reported net incomes were $1,200,000 in 2021 and $1,050,000 in 2020. You have also received the following information:

- A surplus building was rented to a tenant, starting on July 1, 2020. The lease term was 24 months and the annual rent was $60,000. The tenant paid the full amount required under the lease (i.e., $120,000) on July 1, 2020, and this amount was recorded as rental income.
- The company has never reported unused office supplies as an asset on its balance sheet. Office supplies have always been immediately expensed when purchased. The balances of office supplies on-hand were as follows:

31 December 2019		$18,000
31 December 2020		$13,500
31 December 2021		$19,200

- The company started offering a three-year warranty on its products in 2020. The warranty expense recorded was based only on actual expenditures made in each year. It was estimated, however, that warranty claims should eventually total 1% of revenue in each year. Sales and expenditures were as follows:

Actual Warranty Costs for sales in:				
Year	**Sales**	**2020**	**2021**	**Total**
2020	$5,000,000	$12,000	–	$12,000
2021	$5,200,000	$30,000	$16,000	$46,000

Required: Complete the table below, analyzing the company's net income. Ignore income tax effects.

	2021	**2020**
Reported net income	$1,200,000	$1,050,000
Adjustment for rent		
Adjustment for office supplies		
Adjustment for warranty		
Corrected net income		

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CHAPTER OVERVIEW

Chapter 23: Putting It All Together- Disclosures and Analysis Overview

Trading Has Been Suspended for SEHK: 0940

On December 4, 2015, a Hong Kong-listed animal drug company, China Animal Healthcare Ltd. (SEHK: 0940), announced a delay in the release of its financial statements. The firm alleged that a thief had stolen the truck in which the past five years of the company's financial records were being transported. The theft was alleged to have occurred during middle of a forensic audit, when the truck's driver, who was transporting the original financial documents from Qingyuan area to Hebel province, stopped and left the truck for a lunch break.

The company continues to be embroiled in the forensic accounting investigation, stalled as a result of the missing financials statements now labelled the "Lost Documents." As of March 2016, the Hong Kong Stock Exchange suspended the company's shares trading when the firm missed its deadline for filing the 2014 financial results. The suspension is expected to continue until further notice, while the company continues its search for the stolen documents.

This situation has created more than a little angst for 20% shareholder Eli Lilly's Elanco company, which invested $100 million in the troubled China Animal Healthcare Ltd. in 2013. These recent events threaten to suspend Elanco's efforts to expand its presence in China, giving its competition a potential advantage.

If the issue is not resolved soon, Elanco may be on the hunt for another China-based partner to give it a stake in one of China's fastest growing markets for animal health.

(Sources: Business Insider, 2015; Weintraub, 2016)

Learning Objectives

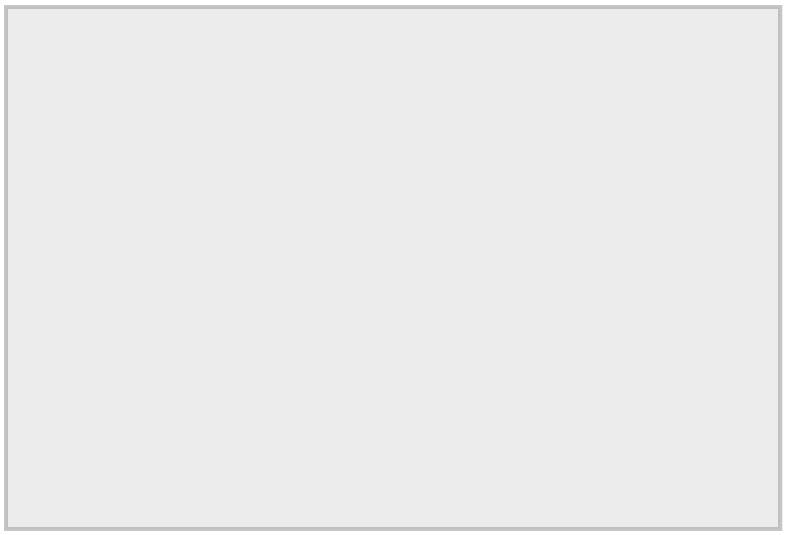
After completing this chapter, you should be able to:

- Discuss the rationale and methods of full disclosure in corporate reporting.
- Identify the issues and disclosure requirements for related parties.
- Describe the appropriate accounting and disclosure requirements for events occurring after the reporting period.
- Describe the purpose of the audit opinion and the contents of the auditor's report.
- Explain the various financial statement analysis tools and techniques.
- Explain the similarities and differences between ASPE and IFRS regarding disclosures and analysis of financial statements.

Introduction

The previous chapters of this text and the previous course text were focused on the individual aspects of financial reporting. For example, the previous intermediate financial accounting text covered how to prepare the basic core financial statements as well as the more complex aspects of current and long-term assets. In contrast, this text has discussed the complex issues regarding current and long-term liabilities and equity such as complex financial instruments, income taxes, pensions, leases, earnings per share, as well as an in-depth look at accounting changes, error analysis, and the direct method for preparing the statement of cash flows. This last chapter will focus on pulling together these individual topics into a cohesive overview of financial statement disclosures and analyses.

Chapter Organization



23.1: Overview
23.2: Disclosure Issues
23.3: Auditor's Reports
23.4: Financial Statement Reporting and Analysis
23.5: IFRS/ASPE Key Differences
23.6: Chapter Summary
23.7: References
23.8: Exercises

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23.1: Overview

The underlying purpose of the financial statements is to tell a story about the operations of a business from its inception to its dissolution. What stories could China Animal Healthcare's financials tell had they not been stolen, and how might this event affect investor and creditor decisions? Given the complexities in today's marketplace, decision-making for creditors and investors can be quite challenging. Financial statements only have meaning, and therefore appropriate influence, if they are complete and if users know how to interpret them. Appropriate disclosures and financial statement analysis are an important part of this evaluative process.

To aid users in understanding financial statements, most medium to large businesses prepare extensive disclosures in the notes to the financial statements. In addition, monthly or quarterly interim financial statements are often prepared that provide an early warning system for management and other select users, such as creditors, who monitor debt and compliance with restrictive covenants. Additionally, if business activities are diversified, segmented reporting is another financial report that separates business operations into segments such as geographical operations or various business lines. This allows stakeholders to determine which segments contribute the most to the overall business.

To assist with the task of a thorough financial statement assessment, there are several analytical techniques available to stakeholders. These include ratio, common size, and vertical and trend analysis. Actual results reported in the financial statements can be compared to the business's own strategic forecast and to industry competitors to see if it is keeping pace, growing, or shrinking.

Understanding a business, however, is more than just analyzing the core financial statements. Business stakeholders need to consider the quality of management, the overall industry climate, as well as projected economic developments. This information comes from many different sources such as the notes to the financial statements and the management discussion and analysis (MD&A) report, which presents information about the operations, company liquidity, capital resources, economic outlook, and any risks and uncertainties. Independently prepared reports such as auditor's reports, analysts' reports, economic reports, and news articles are also an important source of information.

The purpose of this chapter is to focus on the bigger picture of a business's overall current financial performance through the accurate interpretation of the financial statements and their disclosures.

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23.2: Disclosure Issues

Recall from our previous discussions that the purpose of financial reporting is to provide financial information that is useful to investors, lenders, and other creditors in making decisions about providing resources to the company. In this text, we have focused on the preparation of financial reports to meet the usefulness criteria identified above. However, it is important to keep in mind a fundamental deficiency of financial reporting: it is backward looking. That is, financial statements report on events that have already occurred. For investors and creditors, the more relevant consideration is the financial performance in the future, as this is where profits and returns will be made. While the accounting profession has always assumed that historical financial statements are useful in making predictions about the future, users understand that the financial statements are only one of many sources of information required to make well-informed decisions. In this section, we will examine some of the other types of information used by investors, as well as some of the specific disclosures that enhance the financial statements themselves.

Full Disclosure

The concept of full disclosure is a well-established principle that has been broadly recognized as an essential component of financial reporting models. The principle is derived directly from the economic concept of the efficient securities market. A semi-strong efficient securities market is a market in which securities trade at a price that reflects all the information that is publicly available at the time. Although there have been many studies over the years that question the true level of efficiency in securities markets, strong evidence suggests that share prices do respond quickly to new information. Thus, from the perspective of a financial statement preparer, full and complete information should be disclosed in order to meet the needs of the readers. This will help engender a sense of confidence not only in the individual company, but also in the market as a whole, and will help alleviate the problem of information asymmetry.

One way that accountants contribute to the process of full disclosure is through the presentation of financial statement notes. The notes include additional explanations and details that provide further information about the numbers that appear in the financial statements. This additional information can help readers understand the results more fully, which can lead to better decisions. The notes also contain a description of significant accounting policies. These disclosures are very important to help readers understand how accounting numbers are derived. In making investment decisions, readers may wish to compare one company's performance to another's. Because accounting standards sometimes allow choices between alternative accounting treatments, it is important that the readers fully understand which policies have been applied. The concept of the semi-strong efficient market presumes that readers of financial statements can determine the effects of different accounting policy choices, as long as the details of those policy choices are disclosed. The principle of full disclosure also presumes that readers of financial statements have a reasonable knowledge of business methods and accounting conventions. Thus, the accountant is not required to explain the most basic principles of accounting in the note disclosures. As businesses have become more complex over time, note disclosures have become more detailed. The accounting profession is sometimes criticized for presenting overly complicated note disclosures that even knowledgeable readers have difficulty understanding. This criticism is a result of one of the trade-offs that the profession often faces: the need for completeness balanced against the need for understandability.

Most companies will disclose significant accounting policies in the first or second note to the financial statements. A retail company, for example, may disclose an accounting policy note for inventory as follows:

Merchandise Inventories

Merchandise inventories are carried at the lower of cost and net realizable value. Net realizable value is defined as the estimated selling price during the normal course of business less estimated selling expenses. Cost is determined based on the first-in-first-out (FIFO) basis and includes costs incurred to bring the inventories to their present location and condition. All inventories consist of finished goods.

Review the accounting policy notes of Canadian Tire Corporation's 2015 annual financial statements[1].

The significant accounting policy note begins on page 66 of the document and continues for ten pages. Canadian Tire Corporation has fully disclosed all the significant accounting policies to help readers understand the methods used to generate the amounts that appear on the financial statements.

Aside from descriptions of accounting policies, the notes to the financial statements contain further details of balance sheet and income statement amounts. For example, the property and equipment account on Canadian Tire Corporation's 2015 balance sheet is disclosed as a single item. However, Note 16 (page 86 of the document) contains further details of individual classes of assets and movements within those classes, including opening balances for each class of property and equipment, additions and disposals during the year, reclassification to or from the "held for sale" category, depreciation, impairment, and other changes. This level of disclosure helps readers better understand the asset composition and capital replacement policies of the property and equipment account.

Aside from the financial statements themselves, companies provide further disclosures in the annual report and in other public communications. Canadian Tire Corporation's *2015 Report to Shareholders* (Canadian Tire Corporation, 2016) is 118 pages long, including the financial statements. Aside from the financial statements, the annual report includes messages from the Chairman and the President/CEO, listings of the Board of Directors and Executive Leadership Team, and a section entitled "Management's Discussion and Analysis" (MD&A), on pages 3 to 54. The MD&A is required disclosure under Canadian securities regulations. Similar disclosures are required or encouraged in other jurisdictions, although they may bear different names, such as Management Commentary or Business Review. The purpose of MD&A, and similar disclosures, is to provide a narrative explanation from management's perspective of the year's results and financial condition, risks, and future plans. The guidelines encourage companies to provide forward-looking information to help investors understand the impact of current results on future prospects. MD&A should help investors further understand the financial statements, discuss information not fully disclosed in the financial statements, discuss risks and trends that could affect future performance, analyze the variability, quality and predictive nature of current earnings, provide information about credit ratings, discuss short- and long-term liquidity, discuss commitments and off balance sheet arrangements, examine trends, risks and uncertainties, review previous forward-looking information, and discuss the risks and potential impact of financial instruments.

The objectives of MD&A are clearly aimed at helping investors link past performance with predictions of future results. Although this type of information is consistent with investors' needs, there are some limitations with MD&A disclosures. First, although the general elements are defined by securities regulations, companies have some discretion in how they fulfill these requirements. Thus, some companies may provide standardized disclosures that change little from year to year. Although the disclosures may meet the minimum requirements, the usefulness of these boilerplate, or generic and non-specific statements, may be questionable. Second, MD&A disclosures are not directly part of the financial statements, meaning they are not audited. Auditors are required to review the annual report for any significant inconsistencies with the published financial statements, but the lack of any specific assurance on the MD&A may result in investors having less confidence in the disclosures. Third, the MD&A contains more qualitative information than the financial statements does. Although this qualitative information is useful in analyzing past, and predicting future, financial results, it is not as easily verified as the more quantitative disclosures.

One interesting effect of the qualitative nature of MD&A is that companies may either deliberately or inadvertently provide signals to the readers. A number of studies have examined the use of language and the presence of tone in the narrative discussion of the MD&A. Although the research is not always conclusive, there is evidence to suggest that the word choice and grammatical structures present in the reports may provide some predictive function. The language choices may reflect something about management's more detailed understanding of the business that is not directly disclosed in the information.

Although there are sometimes suggestions of information overload levied against the accounting profession and securities regulators, the continually expanding volume of financial and non-financial disclosures does suggest that there is a demand for this information and that readers are finding some value in the disclosures.

Related Party Transactions

One area in particular where full disclosure is important is in the case of related parties. The accounting issue with related parties is that transactions with these parties may occur on a non-arms-length basis. Because the transactions may occur in a manner that is not consistent with normal market conditions, it is important that readers are alerted to their presence. IAS 24 provides guidance to the appropriate treatment of related party transactions and balances.

IAS 24 provides a detailed definition of related parties, as follows:

a. A person or a close member of that person's family is related to a reporting entity if that person:
    i. has control or joint control of the reporting entity;

ii. has significant influence over the reporting entity; or
iii. is a member of the key management personnel of the reporting entity or of a parent of the reporting entity.

b. An entity is related to a reporting entity if any of the following conditions applies:
   i. The entity and the reporting entity are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others).
   ii. One entity is an associate or joint venture of the other entity (or an associate or joint venture of a member of a group of which the other entity is a member).
   iii. Both entities are joint ventures of the same third party.
   iv. One entity is a joint venture of a third entity and the other entity is an associate of the third entity.
   v. The entity is a post-employment benefit plan for the benefit of employees of either the reporting entity or an entity related to the reporting entity. If the reporting entity is itself such a plan, the sponsoring employers are also related to the reporting entity.
   vi. The entity is controlled or jointly controlled by a person identified in (a).
   vii. A person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity).
   viii. The entity, or any member of a group of which it is a part, provides key management personnel services to the reporting entity or to the parent of the reporting entity. (CPA Canada, 2016, Part I, Section IAS 24.9)

The standard further defines close family members as the children, dependents, and spouse or domestic partner of the person in question. However, the definition leaves some room for interpretation as it suggests that a close family member is any family member who is expected to influence, or be influenced by, the person in question.

In cases where complex corporate structures exist, it may be helpful to draw organization charts or other visual representations to determine who the related parties are. Correct identification of the related parties is important, as this will determine the disclosures that are required.

The key feature of IAS 24 is that it requires additional disclosures when related parties exist. Specifically, all related party relationships must be disclosed, even if there are no transactions with those parties. When transactions with related parties do occur, the amount of the transactions and outstanding balances must be disclosed, along with a description of the terms and conditions of the transaction, any commitments, security, or guarantees with the related party, the nature of the consideration used to settle the transactions, and the amount of any provision or expense related to bad debts of the related party. Additionally, the standard requires disclosure of details of compensation paid to key management personnel. The disclosure requirements are designed to help readers understand the potential effects of the related party transactions on the entity's results and financial position.

ASPE takes related party disclosures one step further by also requiring different measurement bases for the transaction, depending on the circumstances. In summary, related party transactions are normally reported at the carrying amount of the item or services transferred in the accounts of the transferor. This means that the transaction may need to be remeasured at a different amount than what was agreed upon by the parties. The only circumstances where the exchange amount (i.e., the amount agreed upon by the related parties, is used to measure the transaction is if the transaction is:

- a monetary exchange in the normal course of operations
- a non-monetary exchange in the normal course of operations which has commercial substance[2]
- an exchange not in the ordinary course of business where there is a substantive change in ownership, the amount is supported by independent evidence, and the transaction is monetary or has commercial substance.

These rules are intended to prevent related parties from reporting transactions at amounts that may not be representative of fair values. By requiring most related party transactions to be reported at the carrying amount, the standard may prevent gains or losses from being reported that represent the result of bargaining between arm's length parties. Only where the transaction is monetary, has commercial substance, or is the result of a substantial change of ownership interests, can the negotiated price be used.

Other disclosure requirements under ASPE for related parties are similar to those of IFRS, except ASPE does not specifically require the disclosure of key management compensation.

Subsequent Events – After the Reporting Period

Financial statements are defined very precisely in terms of time periods. Whereas balance sheets report financial position as at a specific date, income and cash flow statements report results for a period of time ending on a specific date. It would be understandable to think that events occurring after the reporting period are not relevant, as they do not occur within the precisely defined period covered by the financial statements. However, remember that investors and other readers often use financial statements to make predictions about the future. As such, if an event occurs after the reporting date, but before the financial statements are issued, and if the event could have a material impact on the future operations of the business, it is reasonable to expect that investors would want to know about it. For this reason, IAS 10 takes into account the reporting requirements where material events occur after the reporting period.

IAS 10 specifically defines the relevant reporting period as the time between the reporting date and the date when the financial statements are authorized for issue. Although the date of authorization will depend on the legal and corporate structure relevant to the entity, a common scenario is that the financial statements are authorized for issue when the board of directors approves them for distribution to the shareholders. This may be several weeks or even months after the reporting date.

The treatment of events after the reporting period will depend on whether they are adjusting or non-adjusting events. While adjusting events are those that provide further evidence of conditions that existed at the reporting date, non-adjusting events are those that are indicative of conditions that arose after the reporting date. As suggested by the nomenclature, when adjusting events occur, the accounts should be adjusted to reflect the effect of those events, while non-adjusting events will not result in any adjustments to the accounts.

The logic of this treatment is clear. If the event after the reporting date provides further evidence of a condition that existed at the reporting date, then the amount should be adjusted to reflect all available information. If the event only provides evidence of a new condition that arose after the reporting date, then adjustment would not be appropriate, as the condition didn't exist at the reporting date.

In many cases, the appropriate treatment will be obvious. For example, if a provision for an unsettled lawsuit were included in current liabilities on the reporting date, but the lawsuit was later settled for a different amount before the approval of the financial statements, it makes sense to adjust the provision to the actual settlement amount. Similarly, if an error in the accounts is subsequently discovered before the financial statements are approved, then the error should be corrected.

In some cases the treatment of non-adjusting events is clear. For example, if the company's warehouse burns to the ground after the reporting period, this is clearly not indicative of a condition that existed at the reporting date, and no adjustment should be made.

In other cases, however, the treatment is less clear. For example, if a significant customer goes bankrupt after the year-end, and no provision had been made for any bad debts, should the accounts be adjusted? Although the customer's bankruptcy occurred after the reporting date, there may have been prior evidence of the customer's financial difficulties. One would need to look at account aging, payment patterns, and other evidence that would have been available at the reporting date to determine if the condition existed. If the balance of evidence suggests that the customer's financial troubles already existed at the reporting date, then an adjustment would be appropriate. In cases like these, the accountant will need to apply sound judgment in evaluating all the evidence.

Even when an event is determined to be a non-adjusting event, disclosure may still be appropriate if the event is anticipated to have a material effect on future economic decisions. In our previous example, the destruction of a company's warehouse may have a serious impact on the company's future ability to deliver products and to earn profits. Thus, disclosure of the nature of the event, and the estimated financial effect of the event on future results, should be made.

In rare cases, a company's financial condition may deteriorate so quickly after the reporting period that it may be impossible for the company to continue operating. Although events after the reporting period may not necessarily provide evidence of conditions that existed at the reporting date, the going concern assumption will override the normal procedure. Because financial statements are presumed to be prepared on a going concern basis, any change in this fundamental assumption would create the need for a complete change in the basis of accounting. This would obviously have a profound effect on all aspects of the financial statements.

The guidance in IAS 10 provides another example of how the principle of full disclosure is employed to help financial statement readers make more informed decisions.

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23.3: Auditor's Reports

So far we have focused on the role that the accountants and management play in providing useful information to investors. Another important component of a company's financial statements is the audit opinion. Audit opinions are prepared by firms of independent and professionally trained auditors whose job is to examine a company's financial statements and disclosures, internal control systems, and all other relevant data in order to express an opinion on the fairness of their financial statements. Audit opinions are required for any company that wants to trade its shares publicly; in some jurisdictions they may also be required of private companies.

The purpose of an audit opinion is to provide assurance to the readers that a company's financial disclosures have been prepared in accordance with the appropriate accounting standards and to ensure that they are not materially misstated. This assurance is important to the operation of capital markets, as investors need to have confidence in the information that they are using to make decisions.

Although auditing standards are regulated nationally, many jurisdictions have adopted the International Standards on Auditing (ISAs), which are issued by the International Auditing and Assurance Standards Board (IAASB). With over 80 nations globally now using the ISAs, there are still jurisdictions, such as the United States, which issue their own audit standards. However, they have recently made attempts to harmonize these standards with the ISAs.

The end product of the auditor's work is an audit report that is attached to the financial statements. This report may appear fairly simple but it is, in fact, the product of many hours of detailed testing and procedures carried out by audit professionals. An example

of the standard form of the report used in Canada is featured below.

INDEPENDENT AUDITOR'S REPORT		
	[Appropriate Addressee, usually the Board of Directors]	
		Report on the Financial Statements
		We have audited the accompanying financial statements of Sample Company, which comprise the statement of financial position as at December 31, 20X7, and the statement of comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory information.
		Management's Responsibility for the Financial Statements
		Management is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.
	Auditor's Responsibility	
		Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.
		An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design

		audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.
		We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.
	Opinion	
		In our opinion, the financial statements present fairly, in all material respects, the financial position of Sample Company as at December 31, 20X7, and its financial performance and its cash flows for the year then ended in accordance with International Financial Reporting Standards.
	[Auditor's signature]	
	[Date of the auditor's report]	
	[Auditor's address]	

Note that the final opinion states that these financial statements present fairly the financial position and financial performance of the company in accordance with IFRS. However, in some jurisdictions the term "present fairly" is replaced by the statement that the presentation gives a "true and fair view" of the company's affairs. These phrasings are generally considered to be equivalent in meaning. Also, in some jurisdictions, the audit report may provide more details of the auditor's procedures and further assurances regarding regulatory or legal issues. However, the basic elements of the report will be the same.

This audit opinion is sometimes referred to as a "clean" opinion, although this term is somewhat misleading. While the audit opinion is prepared to provide assurance to investors, it does not guarantee that the financial statements are 100% accurate.

In some cases, auditors may find it necessary to modify their opinion. This occurs when insufficient audit evidence is available or if material misstatements are included in the financial statements. If these effects are not considered pervasive, the auditor can then issue a qualified audit opinion. This type of opinion states that the financial statements are presented fairly except for the particular accounts for which insufficient evidence or misstatements are present. Further explanations for the reasons for the qualification will be required in the audit report.

In cases where the effects of insufficient evidence or misstatements are considered pervasive, the auditor will have to either deny an opinion, in the case of insufficient evidence, or issue an adverse opinion, in the case of misstatements. Effects are considered pervasive if they are not confined to specific elements or accounts in the financial statements, if they represent a substantial portion of the financial statements, or if they are fundamental to the users' understanding of the financial statements. In such cases, the auditor needs to exercise prudent judgment, as such opinions can prove harmful to a company. As these types of opinions essentially state that either the auditor cannot provide an opinion, or that the financial statements are not fairly presented, they will not provide assurance to investors. However, adverse opinions are rare, as management will try to correct any material misstatements.

In other situations, the auditor may determine that all the appropriate disclosures have been made, but that there is a particular disclosure that is critical to the readers' understanding of the financial statements as a whole. In this case, the auditor may include

an emphasis of matter paragraph which highlights particular disclosures.

In summary, the audit report adds value to the package of full disclosures that companies provide to financial statement readers to enable them to make better decisions.

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23.4: Financial Statement Reporting and Analysis

Financial statement analysis is the process of reviewing and interpreting a company's core financial statements to make better business decisions. While it sounds simple, it isn't. Many tools have been developed in the financial community to assess a business's financial performance. In simple terms, the process usually starts with a high-level liquidity, activity, profitability, and coverage ratio analysis of the core financial statements and of the various supplementary financial reports such as interim and segmented financial reports. The analyses of these financial reports can also incorporate other types of ratio analysis such as common size analysis and trend analysis. These analytical techniques have been covered in detail in previous chapters of this text and in the previous intermediate financial accounting text. A summary of the commonly used ratios is presented at the end of this chapter for review purposes.

Interim Reporting

In basic terms, interim reports cover periods that are less than one year. As previously stated, interim financial statements are often prepared on a monthly or quarterly basis. They are increasingly popular as more frequent disclosures are becoming the new norm in today's economy. While ASPE does not provide standards regarding interim reporting, IFRS does provide guidance that IFRS compliant companies are encouraged to follow and to disclose.

In many cases, the same headings, subheadings, and subtotals would be employed for both the interim and the annual financial statements. If segmented financial statements are employed by a business, reportable segments would also be applied to the interim financial statements.

IFRS supports the idea that each interim period is to be reported as separate and distinct. Also, the same policies that are used for annual financial statements are to be used for interim financial statements as well. This means that deferrals and accruals used in the interim statements would follow the same principles and tests as those that are used in the annual financial statements. Simply put, revenues would be recognized and reported when earned (revenue recognition) and expenses incurred to earn those revenues would be reported when goods and services were received (matching principle). Accounting policies such as depreciation, inventory cost formulas, and required disclosures, such as earnings per share from the annual financial statements, would also be applied equally for interim statements. IFRS requires the same five core financial statements for interim reporting as required for the annual reports. Interim reports can be condensed as long as they include the same headings, subtotals, and comparative columns as in the annual reports.

Review Suncor Energy Inc.'s 2015 Annual Report[3] and financial statements. The quarterly financial summary for each interim quarter can be found starting on page 120.

The financial data in the current Quarterly Financial Summary is comparative on a quarterly basis with the previous year, 2014, and is highly condensed. Note that the interim report also breaks down the interim reporting periods into four product line segments, namely oil sands, exploration and production, refining and marketing, and corporate (Suncor Energy Inc., n.d.). Segmented reporting will be discussed in the next section.

Interim reporting has several challenges. For example, what happens when there is a change in accounting principle? If this change were to occur in the second or third quarter, how would this affect the first quarter interim financial statements? The consensus is that, even if the change of a specific accounting policy, such as a depreciation method, is prospective, the annual change should be prorated to each of the interim accounting periods so as not to over- or understate any specific quarter. This would lessen any tendency for management to manipulate accounting policies within a specific quarter to influence bonuses or operational results targets. As such, even though the change in policy is applied prospectively for the fiscal year, if interim statements are prepared, the change in policy would be applied proportionally between each quarterly period to smooth the results over each quarter of that fiscal year.

Further challenges to interim reporting are the cyclical and seasonal swings experienced by businesses within a fiscal year. While revenue intake can be concentrated over a limited number of months, expenses may continue to be incurred throughout the year. If IFRS guidelines are followed, the principles of revenue recognition and matching will continue to be applied within each of the interim periods and the same tests used for annual financial statements would be applied to interim reports. With seasonal swings, this can result in volatile earnings comparisons between quarters, which can be seen in the wide fluctuations of Suncor Energy Inc.'s quarterly earnings per share amounts as shown in the quarterly financial summary report referenced above.

Additionally, difficulties exist regarding certain allocations such as for income taxes and earnings per share. Under IFRS, each interim period is to be independent of each other and interim allocations are to be determined by applying all the same tests as those used for the annual reports.

Note that interim financial reports are unaudited, as evidenced by the "unaudited" notation under the title of Suncor Energy Inc.'s quarterly financial summary report. While some stakeholders continue to push for an examination of the interim reports to provide some assurance, auditors remain reluctant to express an opinion on interim financial statements. As a result, there will always be a trade-off between the need for assurance and the need to produce the interim report on a timely and cost-effective basis.

Segmented Reporting

Structural analysis is the study of relationships between resources, people, activities, and products. Segmented, or disaggregated, financial reporting is an example of how structural analysis can be used for financial analysis purposes. As mentioned in the opening comments of this chapter, more and more businesses are diversifying their business lines. This creates the need for additional reporting about those business lines—how each contributes to the overall entity in terms of profits, growth, and risk.

Segmented reporting enhances decision making and analysis as it highlights business components that have strong financial performances over those that are weak, or even losing, performers. Management can subsequently make decisions about which components to keep and which components to discontinue as part of their overall business strategy. Keep in mind, however, that not all business components that experience chronic losses should be automatically discontinued. There can be strategic reasons for keeping a losing component. For example, a company may retain a specific marginal, or losing component, that produces a particular part needed for the entity's manufacturing process. Keeping this business line guarantees a steady supply of these critical parts, thus ensuring a smooth and uninterrupted production process with resulting sales and profits.

As different components within a company can have different gross margins, profitability, and risk, segmented reporting can also assist in forecasting future sales, profits, and cash flows. With segmented reporting comes a better understanding of the company's performance and future prospects, resulting in better decision making overall.

Although there are many, the two most common segmented activities are by products (or by business lines) and by geography. Either the physical location of the company's assets or the location of its customers can be the geographic basis for segmentation.

For ASPE, there is currently no guidance regarding segmented reporting. As such, privately held corporations tend not to report segmented information. For IFRS companies, however, a segment must meet several characteristics and quantitative thresholds in order to be considered a reportable segment for the purposes of the published financial statements.

Reportable Segments

Reportable segments possess certain characteristics, such as having separate and distinct financial information that is regularly monitored by the senior operations management. These are then tested for materiality and are identified as a reportable segment if at least one of the following conditions is met:

1. Its reportable revenue, including inter-company sales and transfers, is 10% or greater than the company's combined revenue of all the segments.
2. Its reported profits or losses, in absolute amounts, are 10% or greater than the greater of:
    a. the combined reported profits
    b. the combined reported losses.
3. Its assets are 10% or greater than the company's combined assets of all the segments.

Below is some sample data from a fictitious company:

Possible Reporting Segments Data									10%	10%	10%
		in $ millions							Revenue	Profit/loss	Assets
		Total		Reported					Threshold	Threshold	Threshold
Segment		Revenue		Profit/loss			Assets		#1	#2	#3
Canada		$	500	$	50		$	300	Y	Y	Y
US			800		16			100	Y	Y	Y
Central America			300		(5)			35			
South America			600		(6)			40	Y		
Europe			400		10			70			
Asia			900		36			200	Y	Y	Y
Middle East			700		25			150	Y	Y	Y
		$	4,200	$	126		$	895			

Tests:

1. Its reportable revenue is 10% or greater than company combined revenue of all segments
2. Its reported profits/losses (in absolute amounts) are 10% or greater than the greater sum of:
   a. the combined reported profits = $137
   b. the combined reported losses = $11

   Profits are greater, so threshold in absolute terms (ignoring + and - math signs)
3. Its assets are 10% or greater than the company's combined assets of all the segments threshold

Based on the three threshold tests above, Canada, the US, South America, Asia, and the Middle East all meet at least one or more of the tests.

Once these segments are identified, IFRS recommends that reportable segments comprise 75% or more of a company's overall combined sales to unrelated customers. They also recommend that the number of reporting segments be limited to ten in order to lessen the possibility of information overload. In the example above, the 75% threshold is , and all five segments meeting at least one of the three test criteria above total . As such, this test has been met. It is important to note that management can override these tests and report a segment if they consider the segmented information to be useful to the stakeholders.

There are several issues, however, with segmented reporting. For instance, accounting processes such as allocation of common costs and elimination of inter-segment sales can be quite challenging. For this reason, allocation of common costs is not required. As such, thorough knowledge of the business and of the industry in which the company operates is essential when utilizing segmented reports, otherwise investors may find segmentation meaningless or, at worst, they may draw incorrect conclusions about the performance of the business components. For example, a business line may repeatedly report segment losses causing shareholders to put pressure on management prematurely to discontinue that line even if the better long-term strategy is to keep it. Additionally, the company may be reluctant to publish segmented information because of the risk it poses to them by way of competitors, suppliers, government agencies, and unions potentially using this information to their advantage and to the detriment of the company.

Review Suncor Energy Inc.'s 2015 Annual Report[4] and financial statements. The information in the notes to the financial statements regarding segmented information can be found on pages 85 to 87.

In the segmented reports, note that Suncor Energy Inc. provides general information about each of its reportable segments and policies regarding inter-segment sales and profit. The segmented financial report is condensed, but provided that senior management regularly reviews them, the line items identified are the minimum required disclosures according to IFRS. The segmented reports must also be reconciled to the core financial statements for revenues and operating profits/losses. While IFRS also states that assets and liabilities are to be reconciled, the segmented report only shows a reconciliation of non-current assets to the core statement of financial position. Other IFRS disclosures identified for segmented reporting include revenues from external customers as well as Canada versus foreign revenue and capital assets. While this is not an exhaustive list of all IFRS required segmented reporting disclosures, it provides a sense that these disclosures are extensive.

Proforma Financial Statements

A pro forma financial statement is forward-looking, based on certain assumptions and projections. A corporation might want to see the effects on net income resulting from adding or dropping a reportable segment, increasing money spent on a marketing campaign, implementation of certain research or development plans, or from adoption of a different accounting policy.

The projected financial statements are prepared on the basis of estimates with these assumptions included, so that management can see the impact these assumptions might have on profits or net assets. The proforma statements can include any of the core financial statements and can be for a single year, or multiple years. In other words, it results in a set of any financial statements that looks into the future, rather than looking at the past as is the case with conventional financial statements.

If the projected assumptions predict a decrease in net income or net assets, the company can respond by making operational changes much more proactively, such as increasing sales prices or decreasing expenses, before these projections become reality. The company can incorporate certain assumptions to see their impacts, such as whether sales or expenses are predicted to run higher in the first quarter of the year than in the second. They can determine whether a marketing campaign need an extra boost during a particular time of the year. In other words, they provide the company with invaluable information to help management make the best decisions.

Once the impacts of proposed decisions are quantified, pro forma income statements can be incorporated into the company strategic plan (another futuristic document), and provide important benchmarks with which to measure performance going forward, or they can be used as the basis for the work plan or budget documents for the next fiscal year.

Sounds too good to be true? Consider that the development of proforma statements is a bit like trying to read the stock market. This is because proforma income statements that report net income and net assets are based on estimates of unknown future events. Also, they do not need to follow GAAP and management can manipulate the financial results to provide a picture to investors that is rosier than reality.

Proforma statements can be a powerful predictive tool for decision-making, but they will only be as good as the estimates and assumptions put into them, and the intentions of management, especially if suspected of trying to deceive investors in the pro-forma modification of GAAP net income or net assets.

Analysis Techniques

Many different types of ratios are used in the analysis of financial statements. For instance, ratios applied to the financial statements include liquidity ratios, profitability ratios, activity ratios, and coverage ratios. While other types of ratios exist, including vertical/common size analysis and horizontal/trend analysis, they have been covered in detail in previous chapters of this

text and in the previous financial accounting text. However, a summary of the commonly used ratios, and a brief overview of common size and horizontal analysis, are presented below for review purposes:

Ratio	Formula	Purpose
Liquidity ratios – ability to pay short term obligations		
Current ratio		ability to pay short term debt
Quick ratio (or acid test ratio)		ability to pay short term debt using near-cash assets
Current cash debt coverage ratio		ability to pay short term debt from cash generated from its current fiscal year operations (statement of cash flows)

Ratio	Formula	Purpose
Profitability ratios – ability to generate profits		
Profit margin		net income for each dollar of sales
Return on total assets		overall profitability of assets
Return on common shareholders' equity		overall profitability of common shareholders' investment
Earnings per share		net income for each common share
Payout ratio		percentage of earnings distributed as dividends

Ratio	Formula	Purpose
Activity ratios – ability to effectively use assets		
Accounts receivable turnover		how quickly accounts receivable is collected
Days' sales uncollected		average # of days that sales are uncollected (this can be compared to the credit terms of the company)
Inventory turnover		how quickly inventory is sold
Days' sales in inventory		average # of days to sell inventory.
Accounts payable turnover		how quickly accounts payable is paid
Asset turnover		the ability of assets to generate sales

Ratio	Formula	Purpose
Coverage – ability to pay long-term obligations		

Debt ratio		percentage of assets provided by creditors*
Equity ratio		percentage of assets provided by investors*
Cash debt coverage ratio		the ability to pay current and long-term debt from net cash from operating activities (statement of cash flows)
Book value per common share		the amount per common share if company liquidated at reported amounts.

* These two ratios can also be expressed as a single debt-to-equity ratio; .

A low debt-to-equity ratio indicates that creditors have less claim on the company's assets resulting in less financing risk.

A higher debt-to-equity ratio can mean a higher risk for financial difficulty if the debt and interest cannot be paid when due.

Common Size Analysis

Common size, or vertical, analysis takes each line item on a financial statement and expresses it as a percentage of a base amount. The base figure used in a balance sheet is usually total assets, while for the income statement, it is usually net sales.

Below is an example of common size analysis of an income statement:

Common Size Income Statement						
As at December 31						
		2020			2019	
Revenue			100.00%			100.00%
Cost of goods sold			60.00%			58.00%
Gross profit			40.00%			42.00%
Operating expenses						
Rent			2.00%			2.00%
Salaries and benefits expense			6.00%			5.80%
Depreciation and amortization expense			2.00%			2.00%
Office supplies expense			0.50%			0.40%
Travel			1.00%			1.10%
Utilities expense			1.00%			1.00%
Other operating expenses			0.20%			0.20%
			12.70%			12.50%
Income from operations						
Other revenues and expenses						
Interest expense			0.40%			0.35%
Income before income taxes			26.90%			29.15%
Income tax expense			4.00%			3.80%
Net income			22.90%			25.35%

These percentages can be compared to the previous years' data, competitors' financials, or industry benchmarks. An example of a typical common size ratio that is compared in this way is the gross margin percentage. A downside of ratio analysis, however, is its potential to foster an environment where management chooses accounting policies, such as inventory costing, to influence a

favourable gross profit for personal reasons such as bonuses or positive performance evaluations. In the example above, the gross margin decreased from 42% to 40% over a two-year period. While this decline could be a realistic reflection of operations, it could also be the result of a change in estimates or of accounting policy to avoid income taxes. For this reason, any change in ratios should always be investigated further.

Horizontal Analysis

Horizontal, or trend, analysis examines each line item on a financial statement in order to see how it has changed over time. The line items that are of most interest tend to be the changes in sales, gross profit, and net income. If the company's operations are relatively stable each year, this analysis can prove to be quite useful.

Below is an example of common size analysis of an income statement:

Horizontal Analysis Income Statement									
As at December 31									
		2020			2019			2018	
Revenue			105.20%			101.40%			100.00%
Cost of goods sold			102.80%			101.30%			100.00%
Gross profit			110.00%			101.50%			100.00%
Operating expenses									
Rent			110.00%			100.00%			100.00%
Salaries and benefits expense			106.00%			103.00%			100.00%
Depreciation and amortization expense			100.00%			100.00%			100.00%
Office supplies expense			96.00%			98.00%			100.00%
Travel			102.00%			101.00%			100.00%
Utilities expense			105.00%			103.00%			100.00%
Other operating expenses			81.00%			80.00%			100.00%
			102.00%			101.00%			100.00%
Income from operations									
Other revenues and expenses									
Interest expense			103.00%			101.00%			100.00%

Income before income taxes			102.00%			101.00%			100.00%
Income tax expense			100.00%			100.00%			100.00%
Net income			102.00%			98.00%			100.00%

Note that the percentages do not add up vertically as was the case with vertical analysis. Looking at sales, gross profit, and net income, we notice that all three have all increased, with gross profit increasing the most. This could be due to a change in the pricing policy as evidenced by the 5% increase in revenue over two years. However, more investigation would be necessary to determine if the increase is due to true economic events or if it was influenced by changes in policies made by management.

In summary, remember that when working with ratios analysis, ratios are only as good as the data reported in the financial statements. For instance, if quality of earnings is high, ratio analysis can be useful, otherwise it may do more harm than good. Additionally, it is important to focus on a few key ratios for each category to avoid the risk of information overload. Those key ratios can subsequently be investigated and tracked over time. It is also important to understand that industry benchmarks make no assurances about how one company compares to its competitors, as the basis for the industry ratio may differ from the basis used for the company. While ratios provide good indicators for further investigation, they are not the end-point if an evaluation is to be conducted properly.

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23.5: IFRS/ASPE Key Differences

Item	ASPE	IFRS
Related Parties	In addition to disclosure of related party balances and transactions, some related party transactions may need to be remeasured to the carrying amount, rather than the transaction amount.	The presence of related parties needs to be disclosed, along with details of transactions and balances with related parties.
Key Management	There is no specific disclosure requirement for key management compensation.	Disclosure of compensation paid to key management personnel is required.
Subsequent Events	Subsequent events are considered up to the date that the financial statements are completed, which may require some judgment.	Periods after the reporting date must be considered up to the date that the financial statements are authorized for issue.
Interim Reporting	N/A	Provides guidance but no required disclosures. Accruals and accounting policies should be applied in the same way as is done in the annual financial statements.
Segmented Reporting	N/A	Reportable segments are defined by characteristics and significance tests. Disclosures can be extensive and include reconciliation of key line items such as revenue, profits/losses, assets, and liabilities to the core financial statements.

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23.6: Chapter Summary

LO 1: Discuss the rationale and methods of full disclosure in corporate reporting.

The practice of full disclosure is motivated by the need to create information useful to financial statement readers in helping them make decisions. Full disclosure of relevant information can improve the efficiency of financial markets by lessening the information asymmetry problem, thus creating more confidence for financial statement users. Financial information, however, is backward-looking in nature, so disclosures beyond the financial statements are required. Financial statement notes provide additional details and explanations of amounts included in the financial statements, as well as descriptions of significant accounting policies. Complete disclosures of accounting policies are necessary in order to allow readers to make comparisons between companies. Outside the financial statements, companies will also make other disclosures, including the management discussion and analysis (MD&A) section of the annual report. This section provides a narrative review of the year's results from the perspective of management, as well as a discussion of risk factors, future plans, and other qualitative information that may be useful to readers. A well-written MD&A will help investors link past performance to predictions of future results.

LO 2: Identify the issues and disclosure requirements for related parties.

Related parties are either individuals or entities that are presumed to not deal with the reporting entity at an arm's length basis. Because related parties are assumed to have some influence over the reporting entity, there is a possibility that transactions with these parties may not be conducted under the same terms as with other market participants. The existence of related parties needs to be disclosed, even if there are no transactions with those parties during the reporting period. When transactions with related parties do occur, the amount of the transactions and outstanding balances must be disclosed, along with a description of the terms and conditions of the transaction, any commitments, security, or guarantees with the related party, the nature of the consideration used to settle the transactions, and the amount of any provision or expense related to bad debts of the related party. Details of compensation paid to key management personnel must also be disclosed. In certain circumstances, ASPE also requires remeasurement of related party transactions.

LO 3: Describe the appropriate accounting and disclosure requirements for events occurring after the reporting period.

Events that occur after the reporting period, but before the financial statements are authorized for issue, may require additional disclosures. If the event does not provide evidence of a condition that existed at the reporting date, then note disclosure would generally be the only required action. If the event does provide evidence of a condition that existed at the reporting date, then adjustments of the reported amounts are required. However, in some cases it may not be clear if the condition existed at the reporting date. In rare circumstances, the subsequent event may result in a reassessment of the going concern assumption, which would cause a complete revision of the reporting basis of the financial statements.

LO 4: Describe the purpose of the audit opinion and the contents of the auditor's report.

Audit opinions are prepared by independent, professional auditors in order to provide assurance to the readers of the financial statements that they have been prepared in accordance with the appropriate accounting standards and that those financial statements are not materially misstated. This assurance is intended to provide confidence to financial market participants that the information used to make decisions is relevant and reliable. A typical clean audit opinion would identify the auditor's and management's responsibilities, the financial statements being audited, and would provide an opinion that the financial statements are fairly presented. In cases where errors are identified, or audit evidence is unavailable, the auditor may issue a qualified opinion if the effects are not pervasive. Where the effects of errors or insufficient evidence are pervasive, the auditor will need to either deny an opinion or issue an adverse opinion.

LO 5: Explain the various financial statement analysis tools and techniques.

Techniques used to analyze financial statements include interim reporting, segmented reporting, and various other analysis techniques. The process usually starts with a high-level liquidity, activity, profitability, and coverage ratio analyses of the core financial statements and of the various supplementary financial reports, such as the interim and segmented financial reports. The analyses of these financial reports can also incorporate other types of ratio analysis such as common size analysis and trend analysis.

LO 6: Explain the similarities and differences between ASPE and IFRS regarding disclosures and analysis of financial statements.

Some differences exist between ASPE and IFRS regarding related parties' disclosures and subsequent events. However, for interim and segmented reporting, ASPE is silent.

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23.7: References

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23.8: Exercises

23.1

Determine if a related party relationship exists in each of the cases below and describe what disclosures would be required under IAS 24.

a. Kessel Ltd. sells goods on credit to Sterling Inc., a company owned by the daughter of Ms. Bender (Ms. Bender is a director of Kessel Ltd.). On December 31, 2021, trade receivables of $50,000, owing from Sterling Inc., were reported on Kessel Ltd's books. Management of Kessel Ltd. decided to write off $20,000 of this receivable and provide a full allowance against the remaining balance.
b. During 2021, Kessel Ltd. purchased goods from Saunders Ltd. for $175,000. Saunders Ltd. indicated that this amount represents the normal price it would charge to arm's length customers. Kessel Ltd. owns 35% of the shares of Saunders Ltd.
c. In late December 2021, a vacation property owned by Kessel Ltd. was sold to one of its directors, Mr. Chiang, for $325,000. The property had a carrying value of $150,000 and an estimated market value of $360,000. Kessel Ltd. also provided a guarantee on the mortgage that Mr. Chiang took out to acquire the property.
d. On December 31, 2021, Kessel Ltd. owed $120,000 to its major supplier, Rickert Ltd., for purchases made on account at regular commercial terms.

23.2

In each of the cases below, determine if the relationships should be considered related party relationships under IAS 24.

a. Mr. Fowler is a director of both Goss Ltd. and Link Inc. Are these two companies related?
b. Rosen Ltd. and Chabon Inc. are both associated companies of Lethem Ltd. Are Rosen Ltd. and Chabon Inc. related parties?
c. Abernathy Ltd. and Beron Inc. each have a board containing seven directors, five of who are common. There are no common shareholdings. Are the two companies related?

23.3

The following events occurred between December 31, 2022 (the reporting date) and March 22, 2023, the date that Ealing Inc.'s financial statements were approved for issue:

a. January 8, 2023: The local government approved the expropriation of one of the company's manufacturing facilities for construction of a new motorway. On December 31, 2022, the carrying value of the property, land and building, was $2,750,000. The company has determined that they will be able to move most of the manufacturing machines to other facilities. The company was not previously aware of the local government's plan, as the council discussions had been held in camera. The local government has not yet proposed a compensation amount. The appropriation will occur later in 2023.
b. January 27, 2023: The board of directors approved a staff bonus of $250,000. The terms of this bonus were included in the employment contracts of key management personnel and the bonus calculation was based on the reported financial results of the December 31, 2022 fiscal year.
c. February 3, 2023: The company received notice from the federal income tax authority that additional income taxes of $75,000 for the 2020 and 2021 fiscal years were payable. The company had previously disputed the calculation of these taxes, and had reported an accrual $30,000 on December 31, 2022.
d. February 21, 2023: The accounts receivable clerk was fired after it was discovered she had perpetrated a fraud in the accounts. The accounts receivable balance was overstated by $75,000 on December 31, 2022. The company has consulted legal counsel to determine if any action can be brought to recover the stolen funds, but no action has yet been filed.
e. March 16, 2023: The board of directors declared a dividend of $550,000 based on the results reported on the December 31, 2022 financial statements.
f. March 18, 2023: A fire completely destroyed one of the company's production machines. It is not expected that any insurance proceeds will be received on this asset.

Required: Determine what adjustments or disclosures, if any, should be made on the December 31, 2022 financial statements for the above items.

23.4

On January 15, 2023, several pieces of plaster fell from the ceiling in the offices of Satterlee LLP, a firm of professional accountants, crushing several pairs of green eye shades. Luckily, no accountants were injured. The management of the firm hired professional engineers to examine the problem. The engineers determined that there were, in fact, more serious problems in the overall structure of the building, and, in particular, the foundation. The engineers indicated that it appeared the foundation had been sinking for several years, although the evidence of the cracked ceiling only just appeared. The engineers indicated that the repair work to the foundation was essential to keep the building safe for occupation.

Required: Determine how this event should be dealt with on Satterlee LLP's financial statements for the year ended December 31, 2022.

23.5

On November 12, 2022, the federal government filed a lawsuit against Magus Corp. The lawsuit contends that one of Magus Corp.'s factories has been dumping unfiltered effluent into a local river, resulting in contamination that has required the water treatment plant downstream to commit to additional procedures to keep the water safe for community residents. The lawsuit not only seeks compensation for the damage done, but also seeks a remedy that would force the company to install filtration equipment at the factory to clean the effluent before it reaches the river. The company has not accrued any provision for this lawsuit on December 31, 2022, as the company's legal counsel has indicated that the outcome cannot currently be determined. Management of the company has indicated that if they are forced to install the filtration equipment, that they will, instead, shut down the factory as the required equipment would render the entire operation economically infeasible. The factory in question is one of three factories that the company operates, producing approximately 40% of the company's output.

Required: Discuss the potential impact of the above situation on the auditor's report for the year ended December 31, 2022.

23.6

Arburator Inc. has six business lines with the following information:

Business Line		**Total Revenue**			**Operating Profit/(Loss)**			**Assets**	
1		$	90,000		$	18,000		$	150,000
2			25,000			(7,000)			20,000
3			20,000			(4,000)			15,000
4			140,000			30,000			266,000
5			10,000			4,000			15,000
6			4,000			(3,000)			12,000
		$	289,000		$	38,000		$	478,000

Required: If Arburator Inc. follows IFRS, determine which business lines, if any, qualify as a reportable operating segment for purposes of financial reporting.

23.7

Regarding interim reporting, what accounting issues can occur? Is there a difference between IFRS and ASPE regarding interim reporting?

23.8

The condensed income statement for Egor Inc. is shown below:

		2021		2020		2019
Net sales		25,000		22,500		21,000
Cost of goods sold (COGS)		16,250		13,500		13,230
Gross profit		8,750		9,000		7,770
Selling and administration expenses		5,000		4,800		4,600
Income from continuing operations before income taxes		3,750		4,200		3,170

Required:

a. Analyze Egor Inc.'s statement using vertical and horizontal techniques.

b. What are some of the limitations of this type of analysis?

23.9

Presented below is the balance sheet, including disclosures, of Hibertia Corp. for the year 2020:

Hibertia Corp.									
Balance Sheet									
December 31, 2020									
Assets									
Current assets									
Cash					$	60,000			
Accounts receivable		$	215,500						
Less allowance for doubtful accounts			2,400			213,100			
Inventory*						210,500			
Prepaid insurance						15,900			
Total current assets								$	499,500
Long-term investments*									
Investments in shares*									320,000
Property, plant, and equipment									
Cost of uncompleted plant facilities:									
Land		$	125,000						
Building in process of			220,000			345,000			

construction									
Equipment			325,000						
Less accumulated depreciation			180,000			145,000			490,000
Intangible assets									
Patents*									60,000
Total assets								$	1,369,500
Liabilities and Shareholders' Equity									
Current liabilities									
Notes payable to bank*					$	112,000			
Accounts payable						215,000			
Accrued liabilities						66,200			
Total current liabilities								$	393,200
Long-term liabilities									
Bonds payable, 11%, due Jan. 1, 2031						250,000			
Less discount on bonds payable						22,000			228,000
Total liabilities									621,200

Shareholders' equity									
Capital shares									
Common shares; 600,000 shares authorized,									
400,000 shares issued and outstanding						400,000			
Retained earnings						203,300			
Accumulated other comprehensive income						145,000**			748,300
Total liabilities and shareholders' equity								$	1,369,500

Disclosures:

- Inventory — at lower of FIFO cost/NRV
- Long-term investments – fair value through OCI
- Investments in shares, of which investments costing $140,000 have been pledged as security for notes payable to bank.
- Patents (net of accumulated amortization of $20,000). Amortization is on a straight-line basis.
- Notes payable to bank, due 2021 and secured by investments which cost $140,000.

Additional information:

Net sales for 2020 are $550,000; Cost of goods sold is $385,000; Net Income is $125,000.

Required: Based on the information available above, identify and calculate:

a. One liquidity ratio
b. One activity ratio

Briefly discuss the results for this company. Also, use ending balances in lieu of averages when calculating ratios.
23.10

Below is the balance sheet for Great Impressions Ltd. as at December 31, 2020.

Great Impressions Ltd.									
Balance Sheet									
As at December 31, 2020									
Assets									
Current assets:									
Cash								$	300,000
Accounts receivable					$	900,000			
Allowance for doubtful accounts						(13,000)			887,000
Inventory									55,000
Spare parts supplies									1,500
Prepaid insurance									53,000
Total current assets								$	1,296,500
Property, plant, and equipment:									
Land						300,000			
Equipment		$	143,000						
Accumulated depreciation, equipment			(62,000)			81,000			381,000
Intangible assets:									
Patent									300,000
Total								$	1,977,500

assets									
Liabilities									
Current liabilities:									
Accounts payable						265,200			
Unearned consulting fees						25,500			
Current portion of long-term note payable						100,000			
Total current liabilities									390,700
Long-term liabilities									
Long-term note payable									93,800
Total liabilities								$	484,500
Equity									
Contributed capital:									
Preferred shares, authorized 5,000 shares;									
issued and outstanding 3,744 shares						93,600			
Common shares, unlimited authorized;									
issued and						159,000			

outstanding, 15,900 shares									
Total contributed capital						252,600			
Retained earnings						1,240,400			
Total equity									1,493,000
Total liabilities and equity								$	1,977,500

Additional information:

Net sales for 2020 are $1,100,000; Cost of goods sold is $500,000; Net income is $544,960.

Market price per common share is currently $97.

Industry average ratios:		
Accounts payable turnover		2 times
Current ratio		2:1
Days' sales in inventory		28 days
Debt ratio		26%
Profit margin		45%
Total asset turnover		1 times

Required: Calculate all the ratios listed above and comment on this company's performance. Identify each ratio as either being a liquidity, activity, solvency or profitability, or coverage ratio. Explain the purpose of the ratio selected and comment on the company's performance. Round your answers to the nearest two decimal places. Use the current year closing account balances in lieu of averages when calculating ratios requiring averages.

23.11

Leo Creations Co. sells art supplies to retail outlets. Their financial statements are shown below:

Leo Creations Co.						
Income Statement						
For the Year Ended December 31, 2020						
Sales					$	1,500
Cost of goods sold						980
Gross profit					$	520
Operating expenses:						
Depreciation expense		$	48			
Other expenses			221			269
Operating income					$	251
Other revenues and expenses						
Interest expense		$	12			
Loss on sale of equipment			16			28
Net income					$	223

Leo Creations Co.						
Comparative Account Information						
December 31, 2020 and 2019						
		2020			2019	
Accounts payable		$	129		$	115
Accounts receivable (net)			310			180
Bonds payable (due 2030)			610			100
Cash			75			42
Common shares			850			450
Equipment			1,360			500
Inventory			250			210

Accumulated depreciation			206			282
Long-term investment			400			400
Retained earnings			500			310
Salaries payable			100			75

Following are industry averages:

Current ratio	2.5:1
Inventory turnover	5.5 times
Acid-test (quick) ratio	1.4:1
Return on assets	13.4%
Accounts receivable turnover	8.2 times
Return on common shareholders' equity	18.3%

Required: (Round all calculations to two decimal places.)

a. i. Calculate the acid-test ratio for 2020. What type of ratio is this and what is its purpose?
ii. Is the company's acid-test ratio favourable or unfavourable, as compared to the industry average?

b. i. Calculate the accounts receivable turnover for 2020.
ii. Is the company's accounts receivable turnover favourable or unfavourable, as compared to the industry average in 2020?

c. Do Leo Creations Co.'s assets generate profits favourably or unfavourably, as compared to the industry average in 2020?

23.12

The following information appeared on the alphabetized adjusted trial balance of Jill's Used Books Inc. for the year ended June 30, 2020. Assume all accounts have a normal balance.

Accounts payable		$	1,800
Accounts receivable			29,000
Accumulated depreciation, equipment			3,800
Advertising expense			20,000
Allowance for doubtful accounts			1,400
Cash			10,000
Cost of goods sold			123,900
Delivery expense			4,875
Depreciation expense			5,000
Equipment			15,000
Interest income			2,000
Common shares			49,325
Preferred shares			40,000
Retained earnings			50,000
Cash dividends			46,000
Merchandise inventory			17,000
Notes payable ($3,000 is due by June 30, 2021)			7,000
Notes receivable (due in 2023)			14,000
Office supplies			750
Long-term investment			75,000
Copyright			25,000
Office supplies expense			1,200
Patent			2,500
Petty cash			500
Rent expense			17,900
Salaries expense			41,750
Salaries payable			950
Sales			314,000
Sales returns and allowances			22,000
Unearned sales			1,100

Additional information:

Assume total assets, liabilities, and equity at June 30, 2019 for Jill's Used Books Inc. were $120,000, $75,000, and $45,000, respectively.

Required: Explain whether the balance sheet was strengthened or not from June 30, 2019 to June 30, 2020.

23.13

The following selected financial statement information is available for Yeo Company.

	(000's)	
	December 31,	
	2020	**2019**
Cash	60	10
Accounts receivable (net)	80	70
Merchandise inventory	240	50
Equipment (net)	490	520
Accounts payable	180	75
Notes payable, due 2022	300	300

Required: Comment on the change in Yeo Company's ability to pay short-term debt. As part of your answer, include an explanation of the relationship between short-term debt paying ability and cash flow. Round to two decimal places.

23.14

The following are comparative debt ratios for two companies in the same industry:

	2020	**2019**
Dilly Inc.	40%	35%
Kevnar Corporation	70%	83%

Required: Which company has strengthened its balance sheet? Explain your answer.

1. https://s22.q4cdn.com/405442328/files/doc_financials/en/2015/annual/Canadian-Tire-Corporation_2015-Annual-Report_ENG.pdf

2. This rule doesn't apply if the exchange is of assets held for sale in the normal course of operations that will be sold in the same line of business.

3. http://www.suncor.com/investor-centre/financial-reports/annual-disclosure

4. http://www.suncor.com/investor-centre/financial-reports/annual-disclosure

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CHAPTER OVERVIEW

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24.1: Chapter 13 Solutions

13.1

a. CL

b. CL

c. CL

d. CL

e. Both

f. Not recorded

g. CL and possibly NCL if goods/services provided more than one year in the future

h. NCL, unless decommissioning will happen within one year, then CL

i. Not recorded unless lawsuit is settled/resolved

j. CL

k. CL

l. Both

m. CL or NCL, depending on term of note

n. CL

o. Both, depending on expiry date of points

13.2

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accounts payable Accounts payable		8,000	
	Note payable Note payable			8,000

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Interest expense Interest expense		171.62	
	Interest payable Interest payable			171.62
	($8,000×9%×87÷365)			

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Note payable Note payable		8,000	
	Interest expense Interest expense		65.10	
	Interest payable Interest payable		171.62	
	Cash Cash			8,236.72
	For interest expense: (8,000×9%×33÷365)			

13.3

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Inventory (incl. prov. tax) Inventory (incl. prov. tax)		10,400	
	Federal sales tax recoverable Federal sales tax recoverable		600	
	Accounts payable Accounts payable			11,000

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Equipment (incl. prov. tax) Equipment (incl. prov. tax)		3,120	
	Federal sales tax recoverable Federal sales tax recoverable		180	
	Cash Cash			3,300

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accounts receivable Accounts receivable		17,600	
	Federal sales tax payable Federal sales tax payable			960
	Provincial sales tax payable Provincial sales tax payable			640
	Sales revenue Sales revenue			16,000

d.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		5,500	
	Federal sales tax payable Federal sales tax payable			300
	Provincial sales tax payable Provincial sales tax payable			200
	Sales revenue Sales revenue			5,000

e.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Federal sales tax payable Federal sales tax payable		1,260	
	Federal sales tax recoverable Federal sales tax recoverable			780
	Cash Cash			480
	For federal sales tax payable: (960+300)			
	For federal sales tax recoverable: (600+180)			
	Provincial sales tax payable Provincial sales tax payable		840	
	Cash Cash			840
	For provincial sales tax payable: (640+200)			

13.4

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Wage expense Wage expense		73,000	
	Government pension expense Government pension expense		1,200	
	Government pension payable Government pension payable			2,200
	Tax withholding payable Tax withholding payable			19,000
	Employee receivable Employee receivable			50,000
	Cash Cash			3,000

Note: The cash represents the total of the individual payroll cheques that would be written to each employee, less the amount of the advances paid.

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Wage expense Wage expense		36,500	
	Government pension expense Government pension expense		600	
	Accrued payroll Accrued payroll			37,100

Note:

Wage expense=73,000×5÷10=36,500 (based on 5 working days per week)

Government pension expense=1,200×5÷10=600

In practice, the calculation of the government pension expense would be more complicated than this. However, the company would likely omit this part of the calculation, as it is not material to the accrual.

13.5

a.

	January 2021	**Factor**	**Revenue**
One-year subscription	17×$120	12/12	$2,040
Two-year subscription	24×$200	12/24	$2,400
Three-year subscription	30×$280	12/36	$2,800

	July 2021	**Factor**	**Revenue**
One-year subscription	18×$120	6/12	$1,080
Two-year subscription	20×$200	6/24	$1,000
Three-year subscription	22×$280	6/36	$1,027

	December 2021	**Factor**	**Revenue**
One-year subscription	12×$120	1/12	$120
Two-year subscription	30×$200	1/24	$250
Three-year subscription	36×$280	1/36	$280

Total of all revenue amounts recognized = $10,997

Note: This calculation assumes that services are provided in equal proportions throughout the contract term. If a different assumption is more accurate, then the calculations would be adjusted to reflect the expected pattern of service.

b.

c. Total contract payments received:

[(17+18+12)×$120]+[(24+20+30)×$200]+[(30+22+36)×$280]	=	$	45,080
Less revenue recognized in 2021		$	10,997
Total deferred revenue at December 31, 2021		$	34,083

This will be reported as:

Current liability		$	18,013
Non-current liability		$	16,070

Calculation:

	January 2021	**Factor**	**Current Liability**
One-year subscription	17×$120	0/12	$0
Two-year subscription	24×$200	12/24	$2,400
Three-year subscription	30×$280	12/36	$2,800

	July 2021	**Factor**	**Current Liability**
One-year subscription	18×$120	6/12	$1,080
Two-year subscription	20×$200	12/24	$2,000
Three-year subscription	22×$280	12/36	$2,053

	December 2021	**Factor**	**Current Liability**
One-year subscription	12×$120	11/12	$1,320
Two-year subscription	30×$200	12/24	$3,000
Three-year subscription	36×$280	12/36	$3,360

Total current liability = $18,013

Total non-current liability = (34,083−18,013)=$16,070

13.6

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1 2021	Cash Cash		21,000,000	
	Sales revenue – yachts Sales revenue – yachts			20,930,000
	Unearned revenue – warranty Unearned revenue – warranty			70,000
Dec 31 2021	Unearned revenue – warranty Unearned revenue – warranty		23,333	
	Sales revenue – warranty Sales revenue – warranty			23,333
	($70,000÷3)			
Dec 31 2021	Warranty expense Warranty expense		12,000	
	Cash Cash			12,000
Dec 31 2022	Unearned revenue – warranty Unearned revenue – warranty		23,333	
	Sales revenue – warranty Sales revenue – warranty			23,333
	($70,000÷3)			
Dec 31 2022	Warranty expense		30,000	

	Warranty expense			
	Cash Cash			30,000
Dec 31 2023	Unearned revenue – warranty Unearned revenue – warranty		23,333	
	Sales revenue – warranty Sales revenue – warranty			23,333
	($70,000÷3)			
Dec 31 2023	Warranty expense Warranty expense		35,000	
	Cash Cash			35,000

b. Unearned revenue at December 31, 2022 = (70,000−23,333−23,333)=$23,334

13.7

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Wage expense Wage expense		24,720	
	Accrued vacation pay Accrued vacation pay			24,720
	(10 employees×$160×15 days×103%)			
	Sick pay expense Sick pay expense		15,360	
	Wage expense Wage expense			15,360
	(96 days×$160=$15,360)			

Note: This is simply a reclassification, as the employee would have been paid his or her regular pay on a sick day.

b. Vacation pay liability at December 31 = $24,720, per part (a)

Sick pay liability at December 31 = $0 (these benefits do not accumulate)

13.8

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		97,200	
	Sales revenue Sales revenue			92,080
	Unearned revenue – loyalty card Unearned revenue – loyalty card			5,120

Total sales generated = 36,000 cups×$2.70=$97,200

Fair value per cup = $97,200÷(36,000+2,000)=$2.56 per cup

(Denominator is total cups sold plus expected redemptions.)

Unearned revenue = 2,000 expected redemptions×$2.56=$5,120 (rounded)

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Unearned revenue – loyalty card Unearned revenue – loyalty card		2,560	
	Revenue – loyalty card Revenue – loyalty card			2,560

This records the redemption of the first 1,000 free cups.

b. Liability at the end of 2020 will be the unearned revenue balance:

= $5,120−$2,560 = $2,560

This will be reported as a current liability, as all loyalty cards expire within one year.

13.9

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Factory Factory		1,232,646	
	Obligation for site restoration Obligation for site restoration			1,232,646

Present value of legal and constructive obligation	=(FV 3,500,000, n 10, i 11%)
	=$1,232,646

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Year 1	Depreciation expense Depreciation expense		123,265	
	Accumulated depreciation – factory Accumulated depreciation – factory			123,265
	(1,232,646÷10 years)			
Year 1	Interest expense Interest expense		135,591	
	Obligation for site restoration Obligation for site restoration			135,591
	(1,232,646×11%)			
Year 2	Depreciation expense Depreciation expense		123,265	
	Accumulated depreciation – factory Accumulated depreciation – factory			123,265
Year 2	Interest expense Interest expense		150,506	
	Obligation for site restoration Obligation for site restoration			150,506
	((1,232,646+135,591)×11%)			

13.10

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
2021	Cash Cash		33,000,000	
	Sales revenue Sales revenue			33,000,000
	(3,000 machines×$11,000 each)			
2021	Warranty expense Warranty expense		1,800,000	
	Provision for warranty liability Provision for warranty liability			1,800,000
	(3,000 machines×$600 per machine)			
2021	Provision for warranty liability Provision for warranty liability		975,000	
	Cash, inventory, etc. Cash, inventory, etc.			975,000
2022	Provision for warranty liability Provision for warranty liability		345,000	
	Cash, inventory, etc. Cash, inventory, etc.			345,000
2023	Provision for warranty liability Provision for warranty liability		480,000	
	Cash, inventory, etc.			425,000

	Cash, inventory, etc.			
	Recovery of warranty costs Recovery of warranty costs			55,000

Note: This journal entry assumes that the three-year warranty period for all machines sold in 2021 has now expired. The balance of the provision must be reduced to zero once the warranty period ends. If there were still machines with remaining warranty rights, the balance of the provision would be carried forward to 2024 until the warranty period expired.

b. 2021 warranty liability = 1,800,000−975,000=$825,000

2022 warranty liability = 825,000−345,000=$480,000

2023 warranty liability = 480,000−480,000=$0

(assuming all warranty periods have expired by the end of 2023)

Note: In 2021, the liability would be separated into current and non-current portions, based on management's best estimate of the pattern of future warranty repairs. In 2022, the liability would be reported only as current.

13.11

a.

If contract is completed:

Sales revenue=10,000 grams×$45 per gram	=	$	450,000
Cost of product=10,000 grams×$50 per gram	=		500,000
Loss on contract		$	(50,000)

If contract is cancelled and sales still made:

Sales revenue (as above)		$	450,000
Cost of product=10,000 grams×$31 per gram	=		310,000
Cancellation penalty			75,000
Profit on contract		$	65,000

If contract is cancelled and no sales made, the $75,000 penalty still applies.

Because the option of cancelling the contract and continuing to make sales results in a profit, this is not an onerous contract. No journal entry is required.

b.

If contract is completed, loss is as calculated in part (a)	$	(50,000)
If contract is cancelled and sales made:		
Sales revenue (as above)	$	450,000
Cost of product=10,000 grams×$31 per gram=		310,000
Cancellation penalty		150,000
Loss on contract	$	(10,000)
If contract is cancelled and no sales, penalty applies	$	(150,000)

In this case, all options result in a loss, so this is an onerous contract. A journal entry is required to recognize the least costly option available:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Loss on onerous contract Loss on onerous contract		10,000	
	Provision for onerous contract Provision for onerous contract			10,000

13.12

a.

Ratio	2021	2020
Current	1.14	1.13
Quick	0.74	0.79
Days' sales uncollected	66 days	58 days
Days' payable outstanding	140 days	120 days

Current:		2021		323,000÷284,000=1.14
		2020		294,000÷261,000=1.13
Quick:		2021		(323,000−113,000)÷284,000=0.74
		2020		(294,000−88,000)÷261,000=0.79

Days' sales uncollected:		2021		(175,000÷975,000)×365=66 days
		2020		(150,000÷950,000)×365=58 days
Days' payable outstanding:		2021		(229,000÷595,000)×365=140 days
		2020		(201,000÷610,000)×365=120 days

b. The company's cash decreased from the previous year, but this does not reveal much. The ratio analysis, however, does reveal some worrying trends in liquidity. The current ratio has been maintained at almost exactly the same level as the previous year, but it is only slightly above 1. This may indicate that the company will have difficulty meeting its short-term obligations when they come due. The quick ratio further emphasizes this point. The quick ratio declined from the previous year and is now less than 1. This means the company would not be able to fully pay its current obligations if they were to become immediately due. This could cause problems with trade creditors and the company's bank, which could lead to further actions taken by those parties that could negatively affect the business.

The collection period for receivables has also slowed by 8 days from the previous year, which indicates that it is taking longer to collect from customers. This trend will further exacerbate any cash flow problems the company has in meeting its current payment obligations. The actual collection period of 66 days may be reasonable, but the company's credit terms and general industry conditions would need to be examined to see if this is in line with what is expected for this type of business.

The payment period for the company's suppliers shows the most alarming trend. The company is now taking 140 days to pay its payable, an increase of 20 days over the previous year. This could indicate serious cash flow problems, and may cause loss of credit with suppliers which could, ultimately, result in an inability to obtain a supply of inventory. The standard credit terms offered by suppliers will need to be examined to put this calculation into context. As well, the supplier list should be examined to see if there are any related parties involved that are granting more favourable credit terms than would be normally expected.

Overall, the company appears to have some problems in managing its working capital, which could lead to more serious liquidity problems in the future. The company seems to be using trade creditors as its main source of short term financing, which may cause a degrading of the company's credit and reputation with those suppliers. However, more information is required to fully understand these trends.

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24.2: Chapter 14 Solutions

14.1

a. Financing is generally obtained through three sources: borrowing the funds, issuing shares, and using internally generated funds. Using borrowed money to leverage, where the interest rate from the borrowing is less than the return from generating the profit, can maximize the returns paid to shareholders, and the related interest paid is tax deductible. However, borrowed funds must be repaid, which affects the company's liquidity and solvency risk. Issuing shares, on the other hand, does not impact liquidity and solvency risk, but it may result in the dilution of ownership and associated lower market value and less dividends per share. Using internally generated funds may be appropriate if the company has excess cash profits and has determined that this project is the best use for these funds.

b. Based on the information provided, borrowing is the most suitable source of financing for Evergreen Ltd. With a debt to total assets ratio of 56%, Evergreen Ltd. is underleveraged as compared with competitors operating in the same industry, averaging 60%. As a result, Evergreen Ltd. will likely be able to finance the expansion by borrowing and still maintain an acceptable level of liquidity and solvency risk lower than, or equal to, the 60% industry standard benchmark. If Evergreen Ltd. has significant amounts of property, plant, and equipment, it may be able to obtain the loan and secure it with its existing tangible assets. However, more information would be required before making a concrete recommendation.

14.2

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		400,000	
	Note payable Note payable			400,000

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Interest expense Interest expense		20,000	
	Cash Cash			20,000
	($400,000×5%)			

c. The market interest rate at the time of signing the note would have been 5% because the note was issued at face value, meaning that the 5% stated rate was the same as the market rate at that time.

d. The yield is the same as the market or effective rate, which is 5% in this case. Had the market rate been greater or lower than the face rate, the yield would be equal to the market rate.

e. The current portion of the long-term debt is the principal portion of the debt that will be paid within one year of the reporting (balance sheet) date. In this case, as no principal portions are due until the note's maturity on January 1, 2024, no amount will be reported as a current portion of long-term debt as at the December 31, 2021, reporting date. However, when the balance sheet at December 31, 2023, is prepared, the long-term note payable of $400,000 will be classified as a current liability because it will be due within one year of the December 31, 2023, reporting date.

14.3

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		535,531	
	Bonds payable Bonds payable			535,531
	PV = (20,000 PMT, 3.5%, 20 N, 500,000)			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jun 30	Interest expense Interest expense		18,744	
	Bonds payable Bonds payable		1,256	
	Cash Cash			20,000
	For Interest expense: (535,531×3.5%)			
	For Bonds payable: (20,000−18,744)			
	For Cash: (500,000×8%×50%)			

c.

Face value of bond		$	500,000
Present value of bond			535,531
Premium		$	35,531

14.4

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		95,260	
	Note payable Note payable			95,260
	PV = (8 I/Y, 3 N, 120,000 FV)			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Interest expense Interest expense		7,621	
	Note payable Note payable			7,621
	(95,260×0.08)			

c. If the note face value is $120,000, the duration is three years, and the PV is equal to $95,260, the interest rate would be:

Interest rate = (+/- 95,260 PV, 3 N, 120,000 FV) = 7.999 (or 8%)

d.

Date		Interest @ 8%		Balance
Jan 1, 2021				95,260
Dec 31, 2021		7,621		102,881
Dec 31, 2022		8,230		111,111
Dec 31, 2023		8,889		120,000

14.5

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Equipment Equipment		74,326	
	Note payable Note payable			74,326
	PV = (2,400 PMT, 4 N, 5 I/Y, 80,000 FV)			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Interest expense Interest expense		3,716	
	Note payable Note payable			1316
	Cash Cash			2,400
	For Interest expense: (74,326×0.05)			
	For Cash: (80,000×0.03)			

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Interest expense Interest expense		3,819	
	Note payable Note payable			1,419
	Cash Cash			2,400
	For Note payable: (80,000−74,326)÷4			

14.6

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Cash Cash		$200,000	
	Note payable Note payable			176,771
	Unearned revenue Unearned revenue			23,229
	For Note payable: PV = (2.5 I/Y, 5 N, 200,000 FV)			

14.7

PMT = (+/- 25,000 PV, 3 N, 8 I/Y) = 9,700.84 (or 9,701)

Payments each December 31 would be $9,701.

14.8

1.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		324,500	
	Bond payable Bond payable			324,500
	(350,000−25,500)			

2.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Interest expense Interest expense		19,200	
	Bond payable Bond payable			1,700
	Cash Cash			17,500
	For Bond payable: (25,500÷15)			
	For Cash: (350,000×5%)			

14.9

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		196,000	
	Bonds payable Bonds payable			196,000
	(200,000×0.98)			

To calculate the market rate (yield) at the time of the issuance to two decimal places:

I/Y = (+/- 196,000 PV, 7,000 PMT, 10 N, 200,000 FV) = 3.74%

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 1	Interest expense Interest expense		7,330	
	Bond payable Bond payable			330
	Cash Cash			7,000
	For Interest expense: (196,000×0.0374)			
	For Cash: (200,000×0.07×6÷12)			

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Interest expense Interest expense		7,343	
	Bond payable Bond payable			343
	Interest payable Interest payable			7,000
	For Interest expense: ((196,000+330)×0.0374)			

b.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	7,000
Long-term liabilities:			
Long-term bonds payable, 7%, due January 1, 2026		$	196,673

Check Figures:

Date	Payment	Interest @ 3.74%	Amortization	Balance	
Jan 1, 2021				196,000	
Jul 1, 2021	7,000.00	7,400	400	196,400	
Jan 1, 2022	7,000.00	7,400	400	196,800	← Balance owing, Dec 31, 2021
Jul 1, 2022	7,000.00	7,400	400	197,200	
Jan 1, 2023	7,000.00	7,400	400	197,600	
Jul 1, 2023	7,000.00	7,400	400	198,000	
Jan 1, 2024	7,000.00	7,400	400	198,400	
Jul 1, 2024	7,000.00	7,400	400	198,800	
Jan 1, 2025	7,000.00	7,400	400	199,200	
Jul 1, 2025	7,000.00	7,400	400	199,600	
Jan 1, 2026	7,000.00	7,400	400	200,000	

Note: There is no current portion of long-term debt in this case because there is no pay-down of the principal. Looking at the payment schedule, the balance owing is increasing due to the amortization of the discount.

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		196,000	
	Bonds payable Bonds payable			196,000
	(200,000×0.98)			
Jul 1	Interest expense Interest expense		7,400	
	Bond payable Bond payable			400
	Cash Cash			7,000
	For Bond payable: (200,000−196,000)÷10			
	For Cash: (200,000×0.07×6÷12)			
Dec 31	Interest expense Interest expense		7,400	
	Bond payable Bond payable			400
	Interest payable Interest payable			7,000

d.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	7,000
Long-term liabilities:			
Long-term bonds payable, 7%, due January 1, 2026		$	196,800

e. The total cost of borrowing will be the same for both methods, though the pattern of recognition as illustrated in the two interest schedules above is different throughout the life of the bonds.

14.10

a. Effective interest rate:

$800,000×0.99=$792,000−7,000=$785,000 bond value

$800,000×5%=40,000÷2=20,000 semi-annual interest payment

I/Y = (+/- 785,000 PV, 20,000 PMT, 40 N, 800,000 FV) = 2.5756% every 6 months

Date	Payment	Interest @ 2.5756%	Amortization	Balance	
May 1, 2021				785,000*	
Jul 1, 2021	20,000	20,218	218	785,218	
Jan 1, 2022	20,000	20,224	224	785,442	← Bond payable balance, Dec 31, 2021
Jul 1, 2022	20,000	20,230	230	785,672	
Jan 1, 2023	20,000	20,236	236	785,908	
Jul 1, 2023	20,000	20,242	242	786,150	

* Fee is capitalized and will be amortized over the life of the bond. See full amortization schedule above.

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
May 1, 2021	Cash Cash		798,333	
	Bond payable Bond payable			785,000
	Interest expense Interest expense			13,333
	For Cash: (800,000×0.99)+(800,000×0.05×4÷12)−7,000			
	For Bond payable: (800,000×0.99)−7,000			
Jul 1, 2021	Interest expense Interest expense		20,218	
	Bond payable Bond payable			218
	Cash Cash			20,000
	For Interest expense: (785,000×2.5756%)			
Dec 31, 2021	Interest expense Interest expense		20,224	
	Bond payable Bond payable			224
	Interest payable Interest payable			20,000
	For Interest expense: ((785,000+218)×2.5756%)			
	For Interest payable: (800,000×0.05×6÷12)			

c.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	20,000
Long-term liabilities:			
Long-term bonds payable, 5%, due January 1, 2041		$	785,442

d. When a note or bond is issued, the brokerage fees and any other directly attributable costs should be included in the fair value and amortized over the life of the debt. As a result, these types of additional costs will affect both the amount of the bond discount (or premium) amortized and the interest expense over the term of the bond. Exceptions to this are where the debt will subsequently be measured at fair value under the fair value option. In this case, the transaction costs would be expensed at the time of issuance and not included in the initial fair value measurement. [*CPA Handbook*, Accounting, Part II, Section 3856.07 and Part I, IFRS 9].

14.11

When a note or bond is issued, the brokerage fees and any other directly attributable costs should be included in the fair value and amortized over the life of the debt. As a result, these types of additional costs will affect both the amount of the bond discount or premium amortized and the interest expense over the term of the bond. Exceptions to this are where the debt will subsequently be measured at fair value under the fair value option. In this case, the transaction costs would be expensed at the time of issuance and not included in the initial fair value measurement. (*CPA Handbook*, Accounting, Part II, Section 3856.07 and Part I, IFRS 9)

a. **ASPE**

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2022	Interest expense Interest expense		40,000	
	Cash Cash			40,000
	($1M×4%)			
Dec 31, 2022	Bonds payable Bonds payable		50,000	
	Unrealized gain Unrealized gain			50,000
	($1M−$950,000)			

b. **IFRS (IFRS 9)**

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2022	Interest expense Interest expense		40,000	
	Cash Cash			40,000
	($1M×4%)			
Dec 31, 2022	Bonds payable Bonds payable		50,000	
	Unrealized gain Unrealized gain			50,000
	($1M−$950,000)			

c. The risk for Tribecca increased in this case, so the fair value of its debt owing decreased. The offsetting entry to the decrease (debit) to bonds payable is an unrealized gain. An entry booking a gain seems like an illogical outcome, given that the company is now worse off than before due to higher risk.

14.12

General Journal				
Date	Account/Explanation	F	Debit	Credit
July 31	Bond payable Bond payable		289,850	
	Loss on bond retirement Loss on bond retirement		7,150	
	Cash Cash			297,000
	For Bond payable: (300,000−10,150)			
	For Cash: (300,000×0.99)			

14.13

a. Under IFRS, this debt is to be reported as a current liability on the December 31, 2021, financial statements because it was not refinanced by the reporting date. The only exception is if the refinancing was done under an agreement that existed at December 31, 2021, and the decision about the refinancing was solely up to management's discretion.

b. Under ASPE, this debt can be reported as a long-term liability because it has been refinanced on a long-term basis before the financial statements are completed. In this case, the entity's financial statements are not yet finalized, so ASPE would permit the debt to be included with long-term liabilities.

14.14

Settlement or modification:

Old debt: $25,000 (amount due):

New annual interest payment: $18,000×6%=1,080

New debt (PV using the old rate): PV (1,080 PMT, 8 I/Y, 3 N, 18,000 FV) = 17,072

The new debt is more than 10% difference of the old debt's value, so the renegotiation would be considered a settlement and not a modification in terms. A settlement requires the old debt to be removed from the records and the present value amount of the note payable with the new terms be recorded.

The PV of the new note payable at the current market rate would be:

PV (1080 PMT, 7 I/Y, 3 N, 18,000 FV) = 17,527.62

The entries would be:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Notes payable Notes payable		25,000	
	Gain on restructuring of debt Gain on restructuring of debt			7,472
	Note payable Note payable			17,528*
	* rounded			
Dec 31, 2022	Interest expense Interest expense		1,227	
	Note payable Note payable			147
	Cash Cash			1,080
	For Interest expense: (17,528×0.07)			
	For Cash: (18,000×0.06)			
Dec 31, 2023	Interest expense Interest expense		1,237	
	Note payable Note payable			157
	Cash Cash			1,080
	For Interest expense: ((17,528+147)×0.07)			
Dec 31, 2024	Interest expense Interest expense		1,248	

	Note payable Note payable			168
	Cash Cash			1,080
	For Interest expense ((17,528+147+157)×0.07)			
Dec 31, 2024	Note payable Note payable		18,000	
	Cash Cash			18,000

14.15

a. Initial fair value amount of the house on January 1, 2021:

PV = (5.75%, 6 N, 800,000 FV)	=	$	572,015
Dec 31, 2021 Interest: (572,015×5.75%)	=		32,891
Carrying value of the note, Dec 31, 2021	=	$	604,906

b. The assessed value for the house of $590,000 is only a tax assessment notice for purposes of tax levies and payments. Though it is intended to reflect some sort of value of the house, it may not necessarily be an accurate measure. The more accurate measure in this case would be the present value of the future cash flows of the note, using a known, agreed-upon bank rate. The tax assessment amount of $590,000 can be compared to the present value of $572,015 for consistency and reasonableness. In this case, the amounts are close.

14.16

a. The purchase price of the equipment should be recorded at the present value of the future cash flows of the instalment note at the imputed interest rate of 7%. This is the best measure of the fair value of the asset because it represents the present value of an agreed series of future cash flows at a known market rate. The listing price represents a tentative amount asked for the equipment and could be above or below the price that is agreed to between both parties.

b. PV = (40,541 PMT, 7 I/Y, 4 N) = 137,321

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Equipment Equipment		137,321	
	Note payable Note payable			137,321
Dec 31	Interest expense Interest expense		9,612	
	Note payable Note payable		30,929	
	Cash Cash			40,541
	For Interest expense: (137,321×0.07)			

c. From the perspective of a creditor, an instalment note payment includes both the interest and principal, whereas, for an interest-bearing note, the principal amount is not due until maturity. In other words, the instalment note provides a regular reduction of the principal balance as part of every payment received, reducing the creditor's investment in the debt and freeing up cash to use elsewhere.

14.17

For Hornblower Corp.:

a. Determine if this is a modification of terms or settlement:

Present value of old debt is $700,000.

Present value of new debt using the historic rate:

PV = (45,500 PMT, 8 I/Y, 2 N, 650,000 FV) = 638,409

This loan is deemed as a modification in terms because the present value of the future cash flows of the new debt using the old rate of $638,409 does not differ by an amount greater than 10% of the present value of the old debt of $700,000.

There will be no entry for Hornblower Corp. due to the restructure of the loan. The old debt remains on the books of Hornblower Corp. at $700,000 and no gain or loss is recognized. A note disclosure regarding the modification of terms is required.

b. The interest expense is based on the future cash flows specified by the new terms with the pre-restructuring carrying amount of the debt of $700,000. The effective interest rate is calculated as follows:

I/Y = (+/- 700,000 PV, 45,500 PMT, 2 N, 650,000 FV) = 2.98% (rounded)

c.

Date	Payment	Interest @ 2.98%	Reduction in Carrying Amount	Balance
Dec 31, 2021				700,000
Dec 31, 2022	45,500	20,860	24,640	675,360
Dec 31, 2023	45,500	20,140*	25,360	650,000
		* Rounded		

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2022	Interest expense Interest expense		20,860	
	Note payable Note payable		24,640	
	Cash Cash			45,500

d.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2024	Note payable Note payable		650,000	
	Cash Cash			650,000

For Firstly Trust:

e. Present value of old debt is $700,000.

Present value of new debt using the historic rate:			
PV = (45,500 PMT, 8 I/Y, 2 N, 650,000 FV)	=	$	638,409
Loss		$	61,591

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Bad debt expense Bad debt expense		61,591	
	Note receivable Note receivable			61,591

Note: If Firstly Trust had previously recorded an allowance for doubtful accounts for this note, the debit entry would be to the AFDA account instead of the bad debt expense.

f.

		Payment		**Interest**		**Reduction in**		
Date		**7%**		**@ 8%**		**Carrying Amount**		**Balance**
Dec 31, 2021								638,409
Dec 31, 2022		45,500		51,072		5,572		643,981
Dec 31, 2023		45,500		51,519*		6,019		650,000
				* Rounded				

g.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2022	Cash Cash		45,500	
	Note receivable Note receivable		5,572	
	Interest income Interest income			51,072

h.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2024	Cash Cash		650,000	
	Note receivable Note receivable			650,000

14.18

a. Determine if the changes should be accounted for as a settlement or as a modification:

Old debt: $150,000

New terms using old rate of 10%:

PV = (11,700 PMT, 10 I/Y, 2 N, 130,000 FV) = 127,744

The present value of the new terms using the old rate of 10% differs by an amount larger than 10% of the present value of the old debt of $150,000. As a result, the renegotiated debt is considered a settlement. The old debt is removed from the books of Ulting Ltd. with a gain/loss being recognized, and the new debt is recorded.

General Journal				
Date	Account/Explanation	F	Debit	Credit
2021	Note payable Note payable		150,000	
	Gain on restructuring of debt Gain on restructuring of debt			10,331
	Note payable Note payable			139,669
	PV = (11,700 PMT, 5 I/Y, 2 N, 130,000 FV)			

Interest Schedule:

Payment		Interest		Reduction in		
9%		@ 5%		Carrying Amount		Balance
						139,669
11,700		6,983.45		4,717		134,952
11,700		6,747.62		4,952		130,000

General Journal				
Date	Account/Explanation	F	Debit	Credit
2022	Interest expense Interest expense		6,983	
	Note payable Note payable		4,717	
	Cash Cash			11,700
	For interest expense: (139,669×5%)			
	For Cash: (130,000×9%)			
2023	Interest expense Interest expense		6,748	
	Note payable Note payable		4,952	
	Cash Cash			11,700
	For interest expense: (139,669−4,717)×5%			
2024	Note payable Note payable		130,000	
	Cash			130,000

	Cash			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
2021	Allowance for doubtful accounts Allowance for doubtful accounts		22,256	
	Note receivable Note receivable			22,256
	($150,000−$127,744)			

Interest schedule:

Payment		Interest		Adjust to		
9%		@ 10%		Carrying Amount		Balance
						127,744
11,700		12,774		1,074		128,818
11,700		12,882		1,182		130,000

General Journal				
Date	Account/Explanation	F	Debit	Credit
2022	Cash Cash		11,700	
	Note receivable Note receivable		1,074	
	Interest income Interest income			12,774
2023	Cash Cash		11,700	
	Note receivable Note receivable		1,182	
	Interest income Interest income			12,882
2024	Cash Cash		130,000	
	Note receivable Note receivable			130,000

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24.3: Chapter 15 Solutions

15.1

a. PV = (60,000 PMT, 8 I/Y, 4 N, 1,000,000 FV) = $933,757

b. For IFRS, the residual method is used. This allocates the proceeds first to the liability component and the residual to the equity component. The debt component is measured first as the par value compared to the present value of future cash flows without the convertible feature:

Total proceeds at par		$	1,000,000
PV of the debt component by itself			(933,757)
Incremental value of option		$	66,243

Entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		1,000,000	
	Bonds payable Bonds payable			933,757
	Contributed surplus – convertible bond options Contributed surplus – convertible bond options			66,243

c. Under ASPE, the zero-equity method can be used as a policy choice. The equity component would be measured at $0 and the rest to the debt component.

Entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		1,000,000	
	Bonds payable Bonds payable			1,000,000

Also, the residual method can also be used as explained above. Entry is the same as the entry for IFRS:

Entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		1,000,000	
	Bonds payable Bonds payable			933,757
	Contributed surplus – convertible bond options Contributed surplus – convertible bond options			66,243

15.2

a. Under IFRS, the residual method is applied whereby cash is allocated to the value of the debt instrument first, and the residual is allocated to equity. The debt value is calculated as $576,000 and the warrants are accounted for as equity instruments.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		612,000	
	Bonds payable Bonds payable			576,000
	Contributed surplus – warrants Contributed surplus – warrants			36,000
	For Cash: (600×$1,000×1.02), for Bonds payable: (600×$1,000×0.96)			

b. Under ASPE one option is to measure the component that is most easily measurable first (usually the debt component) and apply the residual to the other equity component. This is the option under IFRS, and the journal entry will, therefore, be the

same:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		612,000	
	Bonds payable Bonds payable			576,000
	Contributed surplus – warrants Contributed surplus – warrants			36,000
	For Cash: (600×$1,000×1.02)			

Another option is to measure the equity component using the zero-equity method. This means that equity is measured at $0 and the journal entry would be:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		612,000	
	Bonds payable Bonds payable			612,000
	(600×$1,000×1.02)			

c. Allocating the entire issuance to the debt component, and therefore zero to equity, results in a higher debt to total assets ratio as compared with the residual method. A lower debt to total assets ratio indicates better debt paying ability and long-run solvency.

15.3

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Preferred shares Preferred shares		80,000	
	Contributed surplus – convertible preferred shares options Contributed surplus – convertible preferred shares options		12,000	
	Common shares Common shares			92,000
	For Preferred shares: (8,000×$10)			

15.4

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 31	Bonds payable* Bonds payable*		648,000	
	Contributed surplus – convertible bonds** Contributed surplus – convertible bonds**		90,000	
	Common shares Common shares			738,000

* ($1,000,000 par value+$80,000 unamortized premium)×($600,000÷$1,000,000)
** $150,000×($600,000÷$1,000,000)

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 31	Bonds payable Bonds payable		400,000	
	Contributed surplus – convertible bonds Contributed surplus – convertible bonds		60,000	
	Contributed surplus – conversion rights expired Contributed surplus – conversion rights expired			60,000
	Cash Cash			400,000
	For Bonds payable: ($1,000,000−$600,000 converted), for Contributed surplus: ($150,000−$90,000)			

Note: The bonds payable carrying value would no longer include any unamortized premium, so the face value or par value would be the carrying value at maturity.

c. Due to common shares market price volatility, there is a risk in waiting to convert the bonds. If the bondholder does not convert when the common share market value is high, no gain will be realized. Conversely, if the common shares market price declines too far, the bondholder risks not being able to sell the bonds, rendering the conversion rights worthless.

15.5 Residual method, using the fair value of the warrants first and the residual to the bonds:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		5,940,000	
	Bonds payable Bonds payable			5,640,000
	Contributed surplus – stock warrants Contributed surplus – stock warrants			300,000
	For Cash: ($6,000,000×0.99), for Bonds payable: ($5,940,000−300,000), for Contributed surplus: (6,000,000÷100×$5)			

Zero-equity method, which measures the equity component at $0:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		5,940,000	
	Bonds payable Bonds payable			5,940,000

15.6 Residual method:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		1,960,000	
	Bonds payable Bonds payable			1,940,000
	Contributed surplus – convertible bonds Contributed surplus – convertible bonds			20,000
	For Cash: ($2,000,000×0.98), for Bonds payable: ($2,000,000×0.97)			

Zero-equity method, which measures the equity component at $0:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		1,960,000	
	Bonds payable Bonds payable			1,960,000

15.7

Fair value of bonds without warrants is ($400,000×0.99) = $396,000

General Journal				
Date	Account/Explanation	F	Debit	Credit
Aug 1	Cash Cash		408,000	
	Bonds payable Bonds payable			396,000
	Contributed surplus – stock warrants Contributed surplus – stock warrants			12,000
	For Cash: ($400,000×1.02)			

15.8

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Nov 1	Loss on redemption of bonds*		300,000	
	Retained earnings**		50,000	
	Bonds payable		5,650,000	
	Contributed surplus – Conversion rights		125,000	
	Common shares			5,775,000
	Cash			350,000

Must be equal

* $5,950,000−($6,000,000−$350,000)

** $350,000−$300,000

15.9 Residual method:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Sept 1, 2020	Cash Cash		4,635,000	
	Bonds payable Bonds payable			4,491,000
	Contributed surplus – stock warrants Contributed surplus – stock warrants			54,000
	Interest expense Interest expense			90,000
	To record the issuance of the bonds.			
	For Cash: ((4,500×$1,000×1.01)+90,000), for Bonds payable: ((4,500×$1,000×1.01)−54,000), for Contributed surplus: (4,500×2=9,000×$6), for Interest expense: ($4,500,000×8%×3÷12)			

Zero-equity method:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Sept 1, 2020	Cash Cash		4,635,000	
	Bonds payable Bonds payable			4,545,000
	Interest expense Interest expense			90,000
	For Cash: ((4,500×$1,000×1.01)+90,000), for Bonds payable: (4,500×$1,000×1.01), for Interest expense: ($4,500,000×8%×3÷12)			

15.10

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,500,000	
	Bonds payable			1,443,138*
	Contributed surplus, conversion rights			56,862

* PV (10%, 5N, 135,000 PMT, 1,500,000 FV)

b. IFRS:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		1,462,697*	
	Contributed surplus, conversion rights		56,862	
	Loss on redemption of bonds		10,000	
	Common shares			1,519,559
	Cash			10,000

*	1,443,138×10%−135,000=9,314
	1,443,138+9,314=1,452,452×10%−135,000=10,245
	1,452,452+10,245=1,462,697

Or: Using present values and changing the number of periods from five years to three years: PV (10%, (5−2)N, 135,000 PMT, 1,500,000 FV) = $1,462,697

c. ASPE:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		1,462,697*	
	Contributed surplus, conversion rights		56,862	
	Loss on redemption of bonds		7,303**	
	Retained earnings		2,697***	
	Common shares			1,519,559
	Cash			10,000

NB: These 2 amounts must be equal to the cash payout amount of $10,000 credit.

* Same calculation as in previous part

** 1,462,697−1,470,000=7,303

*** 10,000−7,303=2,697

15.11

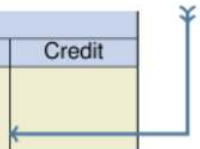
a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,000,000	
	Bonds payable			922,687*
	Contributed surplus, conversion rights			77,313

* PV(8%, 3N, 50,000 PMT, 1,000,000 FV)

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		972,222*	
	Loss on redemption of bonds		9,240**	
	Contributed surplus, conversion rights		77,313	
	Retained earnings		41,225	
	Cash			1,100,000



*	922,687×8%=73,815−50,000=23,815
	922,687+23,815=946,502×8%=75,720−50,000=25,720
	946,502+25,720=972,222

** 972,222−981,462=9,240

15.12

a. January 1, 2020: No journal entry necessary since the fair value of the forward contract would be $0.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 15, 2020	Derivatives – forward contract (asset) Derivatives – forward contract (asset)		25	
	Gain Gain			25

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2020	Derivatives – futures contract (asset) Derivatives – futures contract (asset)		20	
	Cash Cash			20
Jan 15, 2020	Derivatives – futures contract (asset) Derivatives – futures contract (asset)		5	
	Gain Gain			5
	($25−$20)			

15.13

January 1, 2020: No entry on the grant date.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2020	Compensation expense Compensation expense		100,000	
	Contributed surplus – Stock options Contributed surplus – Stock options			100,000
	(10,000×$20×1÷2)			
Dec 31, 2021	Compensation expense Compensation expense		100,000	
	Contributed surplus – Stock options Contributed surplus – Stock options			100,000
	(10,000×$20×1÷2)			
Jan 1, 2023	Cash Cash		238,000	
	Contributed surplus – Stock options Contributed surplus – Stock options		140,000	
	Common shares Common shares			378,000
	For Cash: (7,000×$34), for Contributed surplus: (10,000 shares×$20×7,000÷10,000)			
Dec 31, 2027	Contributed surplus – Stock options Contributed surplus – Stock options		60,000	
	Contributed surplus – Expired stock options Contributed surplus – Expired stock options			60,000
	((10,000×$20)−140,000)			

15.14

a. January 1, 2021: No entry on the grant date.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Compensation expense Compensation expense		100,000	
	Contributed surplus – Stock options Contributed surplus – Stock options			100,000
	(200,000×1÷2)			
Dec 31, 2022	Compensation expense Compensation expense		100,000	
	Contributed surplus – Stock options Contributed surplus – Stock options			100,000
May 1, 2023	Cash Cash		30,000	
	Contributed surplus – Stock options Contributed surplus – Stock options		75,000	
	Common shares Common shares			105,000
	For Cash: (3,000×$10), for Contributed surplus: ($200,000×3,000÷8,000)			
Dec 31, 2024	Contributed surplus – Stock options Contributed surplus – Stock options		125,000	
	Contributed surplus – Expired stock options Contributed surplus – Expired stock options			125,000
	($200,000−$75,000)			

b. The market price of the shares of $15 on May 1, 2023, is not used in recording the exercise of the stock options. From an accounting perspective, the market price is not relevant. It is, nonetheless, relevant to the employees in making their decision to exercise their stock options. The market price is mentioned to indicate that the timing of the exercise is justified, or at least makes sense. Employees exercising a stock option would have paid $10 and could resell the shares immediately for $15, for a gain of $5 per share.

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24.4: Chapter 16 Solutions

16.1

Item	Taxable Temporary Difference	Deductible Temporary Difference	Permanent Difference
A property owner collects rent in advance. The amounts are taxed when they are received.		X	
Depreciation claimed for tax purposes exceeds depreciation charged for accounting purposes.	X		
Dividends received from an investment in another company are reported as income, but are not taxable.			X
A provision for future warranty costs is recorded but is not deductible for tax purposes until the expenditure is actually incurred.		X	
Membership dues at a golf club are reported as a promotion expense but are not deductible for tax purposes.			X
Construction revenue is reported using the percentage of completion method but is not taxed until the project is finished.	X		
The present value of the costs for the future site remediation of an oil-drilling property has been capitalized as part of the asset's carrying value. This will increase the amount of depreciation claimed over the life of the asset. These costs are not deductible for tax purposes until they are actually incurred.		X	
A revaluation surplus (accumulated other comprehensive income) is reported for assets accounted for under the revaluation model. The gains will not be taxed until the respective assets are sold.	X		
Included in current assets is a prepaid expense that is fully deductible for tax purposes when paid.	X		
A penalty is paid for the late filing of the company's income tax return. This penalty is not deductible for tax purposes.			X

16.2

		Amount	
Accounting profit		$	350,000
Permanent difference:			
Life insurance not taxable			(100,000)
Temporary difference:			
Depreciation not deductible			20,000
Taxable profit			270,000
Tax rate			20%
Current tax payable		$	54,000

Tax expense comprised of:			
Current tax expense		$	54,000
Deferred tax income (20,000×20%)			(4,000)
Total tax expense		$	50,000

16.3

a. Current Tax:

		Amount	
Accounting profit		$	3,500,000
Permanent differences:			
None			
Temporary differences:			
Construction not yet taxable			(900,000)
Capital allowance > depreciation			(1,100,000)
Taxable profit			1,500,000
Tax rate			30%
Current tax payable		$	450,000

Temporary difference re: depreciation calculated as follows:

Cost of asset		$	6,800,000
Accumulated depreciation			1,200,000
Carrying value			5,600,000
Less tax base			4,500,000
Excess capital allowance		$	1,100,000

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Construction revenue	900,000	0	(900,000)	30%	(270,000)
PPE	5,600,000	4,500,000	(1,100,000)	30%	(330,000)
Total					(600,000)

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Current tax expense Current tax expense		450,000	
	Current taxes payable Current taxes payable			450,000
	Deferred tax expense Deferred tax expense		600,000	
	Deferred tax liability Deferred tax liability			600,000

c.

Profit before tax					$	3,500,000
Income taxes						
Current expense			(450,000)			
Deferred expense			(600,000)			
						(1,050,000)
Net profit for the year					$	2,450,000

16.4

a. Current Tax:

		Amount	
Accounting profit		$	3,700,000
Permanent differences:			
None			
Temporary differences:			
Construction now taxable			900,000
Capital allowance < depreciation			400,000
Taxable profit			5,000,000
Tax rate			30%
Current tax payable		$	1,500,000

Temporary difference re: depreciation calculated as follows:

Cost of asset		$	6,800,000
Accumulated depreciation			2,600,000
Carrying value			4,200,000
Less tax base			3,500,000
Excess capital allowance		$	700,000

Since last year's excess was $1,100,000, $400,000 of the temporary difference reversed during the year.

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Const. rev.	0	0	0	30%	0
PPE	4,200,000	3,500,000	(700,000)	30%	(210,000)
Total					(210,000)
Opening bal.					(600,000)
Adjustment					390,000

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Current tax expense Current tax expense		1,500,000	
	Current taxes payable Current taxes payable			1,500,000
	Deferred tax liability Deferred tax liability		390,000	
	Deferred tax income Deferred tax income			390,000

c.

Profit before tax					$	3,700,000
Income taxes						
Current expense			(1,500,000)			
Deferred income			390,000			
						(1,110,000)
Net profit for the year					$	2,590,000

16.5

a. Opening deferred tax liability balance of $17,500 implies an opening temporary difference of (17,500÷25%)=$70,000. If the carrying amount at 31 December 2021 was $320,000, then the tax base must have been (320,000−70,000)=$250,000.

At 31 December 2022, the carrying amount will be (320,000−50,000)=$270,000

At 31 December 2022, the tax base will be (250,000−58,000)=$192,000

Current Tax:

		Amount	
Accounting profit		$	416,000
Permanent differences:			
Non-deductible entertainment			21,000
Temporary differences:			
Warranty not deductible in 2022			56,000
Capital allowance > depreciation			(8,000)
Taxable profit			485,000
Tax rate			25%
Current tax payable		$	121,250

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Warranty	(56,000)	0	56,000	25%	14,000
PPE	270,000	192,000	(78,000)	25%	(19,500)
Total					(5,500)
Opening bal.					(17,500)
Adjustment					12,000

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Current tax expense Current tax expense		121,250	
	Current taxes payable Current taxes payable			121,250
	Deferred tax liability Deferred tax liability		12,000	
	Deferred tax income Deferred tax income			12,000

c.

Profit before tax					$	416,000
Income taxes						
Current expense			(121,250)			
Deferred income			12,000			
						(109,250)
Net profit for the year					$	306,750

d.

Current Liabilities			
Income taxes payable		$	121,250
Non-Current Liabilities			
Deferred income taxes			5,500

16.6

a. Current Tax:

	2021	2022	2023
Accounting profit	110,000	242,000	261,000
Permanent differences:			
Dividend	(10,000)	(10,000)	(10,000)
Temporary differences:			
(plug to balance)	(15,000)	(36,000)	34,000
Taxable profit	85,000	196,000	285,000
Tax rate	20%	23%	23%
Current tax payable/exp.	17,000	45,080	65,550

Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	15,000	0	(15,000)	20%	(3,000)
Opening bal.					0
Adjustment					(3,000)

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	51,000	0	(51,000)	23%	(11,730)
Opening bal.					(3,000)
Adjustment					(8,730)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	17,000	0	(17,000)	23%	(3,910)
Opening bal.					(11,730)
Adjustment					(7,820)

b. Summary: Income Statement

	2021	2022	2023
Current tax expense	17,000	45,080	65,550
Deferred tax expense (income)	3,000	8,730	(7,820)

Balance Sheet

	2021	2022	2023
Deferred tax liability	3,000	11,730	3,910

c.

Profit before tax		$ 242,000
Income taxes		
Current	45,080	
Deferred resulting from temporary differences	8,280	
Deferred resulting from tax rate change	450	
		53,810
Net profit for the year		$ 188,190

Note: The deferred tax resulting from the rate change is calculated as the opening temporary difference from 2021 multiplied by the rate differential: $15,000×(23%−20%)=$450. The deferred tax resulting from temporary differences is calculated as the current year temporary differences multiplied by the current rate: $36,000×23%=$8,280. Deferred tax adjustments resulting from rate changes must be disclosed separately from deferred tax adjustments resulting from changes in temporary differences.

16.7

a. Current Tax:

	2021	2022	2023
Accounting profit	110,000	242,000	261,000
Permanent differences:			
Dividend	(10,000)	(10,000)	(10,000)
Temporary differences:			
(plug to balance)	(15,000)	(36,000)	34,000
Taxable profit	85,000	196,000	285,000
Tax rate	20%	23%	23%
Current tax payable/exp.	17,000	45,080	65,550

Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	15,000	0	(15,000)	23%	(3,450)
Opening bal.					0
Adjustment					(3,450)

NOTE: Deferred tax is recorded at the rate expected to be in effect. This is substantively enacted rate at the end of 2021.

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	51,000	0	(51,000)	23%	(11,730)
Opening bal.					(3,450)
Adjustment					(8,280)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	17,000	0	(17,000)	23%	(3,910)
Opening bal.					(11,730)
Adjustment					7,820

b. Summary:

	2021	2022	2023
Current tax expense	17,000	45,080	65,550
Deferred tax expense (income)	3,450	8,280	(7,820)
Deferred tax liability	3,450	11,730	3,910

c.

Profit before tax		$	242,000
Income taxes			
Current	45,080		
Deferred	8,280		
			53,360
Net profit for the year		$	188,640

Note: The deferred tax resulting from the rate change does not need to be reported as it was already accounted for in 2021.

16.8

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
2021	Current tax expense Current tax expense		2,500	
	Tax payable Tax payable			2,500
	(10,000×25%)			
2022	Current tax expense Current tax expense		11,000	
	Tax payable Tax payable			11,000
	(50,000×20%)			
2023	Income tax receivable Income tax receivable		13,500	
	Current tax income Current tax income			13,500
	(2,500+11,000)			
2023	Deferred tax asset Deferred tax asset		9,400	
	Deferred tax income Deferred tax income			9,400
	(112,000−55,000−10,000)=47,000;			
	47,000×20%			

2024	Deferred tax expense Deferred tax expense		4,720	
	Deferred tax asset Deferred tax asset			4,720

(47,000−21,000)=26,000 ending balance of carry forward after applying loss to reduce current taxable income to 0
Ending deferred tax = 26,000×18%=4,680
Adjustment to deferred tax asset = 9,400−4,680=4,720

There is no adjustment for current taxes in 2024 because taxable income has been reduced to 0 by the carryforward.

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
2021	Current tax expense Current tax expense		2,500	
	Tax payable Tax payable			2,500
	(10,000×25%)			
2022	Current tax expense Current tax expense		11,000	
	Tax payable Tax payable			11,000
	(50,000×20%)			
2023	Income tax receivable Income tax receivable		13,500	
	Current tax income Current tax income			13,500
	(2,500+11,000)			

No j/e in 2023 for the benefit of the loss carry forward, as the asset is not recognized. However, disclosure will be made of the unrecorded carry forward amount (47,000).

No j/e in 2024, as current tax will be 0 and no deferred tax asset will be established. However, disclosure is required of the current tax expense components:

Current tax expense 21,000×18%	$	3,780
Less benefit of loss carried forward		(3,780)
Current tax expense	$	0

As well, disclosure of the remaining, unrecorded loss carried forward (26,000) would continue.

16.9

a. Current Tax:

		Amount
Accounting profit	$	750,000
Permanent differences:		
Non-deductible fines		12,000
Non-taxable dividends		(7,500)
Temporary differences:		
Previously taxed revenue now earned		(95,000)
New subscriptions taxed but not earned		68,000
Capital allowance < depreciation		13,000
Taxable profit		740,500
Tax rate		30%
Current tax payable	$	222,150

Deferred Tax:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Unearned revenue	(220,000)	0	220,000	30%	66,000
PPE	298,000	192,000	(106,000)	30%	(31,800)
Total					34,200
Opening bal.					38,400
Adjustment					(4,200)

Unearned revenue $=247{,}000-95{,}000+68{,}000=220{,}000$
Carrying amount PPE $=357{,}000-59{,}000=298{,}000$
Tax base PPE $=238{,}000-46{,}000=192{,}000$

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Current tax expense Current tax expense		222,150	
	Current taxes payable Current taxes payable			222,150
	Deferred tax expense Deferred tax expense		4,200	
	Deferred tax asset Deferred tax asset			4,200

c.

Profit before tax					$	750,000
Income taxes						
Current expense			(222,150)			
Deferred expense			(4,200)			
						(226,350)
Net profit for the year					$	523,650

d.

	2022	2021
Current assets		
Income taxes receivable	–	16,250
Non-current assets		
Deferred income taxes	34,200	38,400
Current liabilities		
Income taxes payable	222,150	–

16.10

a. Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	180,000	165,000	(15,000)	25%	(3,750)
Opening bal.					0
Adjustment					(3,750)

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	160,000	135,000	(25,000)	30%	(7,500)
Opening bal.					(3,750)
Adjustment					(3,750)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	140,000	135,000	(5,000)	35%	(1,750)
Opening bal.					(7,500)
Adjustment					5,750

Deferred Tax Liability/Asset – 2024:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	120,000	135,000	15,000	35%	5,250
Opening bal.					(1,750)
Adjustment					7,000

Deferred Tax Asset – 2025:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	100,000	110,000	10,000	30%	3,000
Opening bal.					5,250
Adjustment					(2,250)

NOTE: The carrying amount/tax base are determined by taking the original cost of $200,000 and deducting the accumulated depreciation/accumulated capital allowances at the end of each year.

b. Current taxes

	2021	2022	2023	2024	2025
Accounting profit (loss) reported	150,000	60,000	(440,000)	(80,000)	350,000
Temporary difference:					
Depreciation expense	20,000	20,000	20,000	20,000	20,000
Capital allowance claimed for tax purposes	(35,000)	(30,000)	0	0	(25,000)
Taxable profit (loss)	135,000	50,000	(420,000)	(60,000)	345,000
Enacted tax rate	25%	30%	35%	35%	30%
Tax payable (refund)	33,750	15,000	(48,750)*	0**	15,000***

* In 2023, a tax refund is generated as follows:

Tax loss applied to 2021 taxable profit	135,000	
Rate	25%	
Refund		33,750
Tax loss applied to 2022 taxable profit	50,000	
Rate	30%	
Refund		15,000
Total refund and tax income for the year		$ 48,750

** In 2024, the additional loss cannot be carried back, as there are no further taxable profits to apply it against. Therefore, no tax refund is generated.

*** In 2025, the current tax payable is determined as follows:

Taxable profit						345,000
Less loss carry forward applied:						
2023 tax loss			(420,000)			
Applied to 2021			135,000			
Applied to 2022			50,000			
2024 loss			(60,000)			
Total loss available in 2025						(295,000)
Taxable profit after loss carry forward applied						50,000
Tax rate						30%
Tax payable						15,000

c.

		2023		**2024**
Opening balance of loss		0		(235,000)
Current tax loss/profit		(420,000)		(60,000)
Carried back to 2021 and 2022		185,000		–
Balance to carry forward		(235,000)		(295,000)
Probability of use		80%		10%
Expected benefit		(188,000)		0
Tax rate		35%		35%
Deferred tax asset		65,800		0
Opening balance		0		65,800
Adjustment required		65,800		(65,800)

In 2024, management's estimate of its ability to utilize the tax losses has dropped to 10%, which means it is no longer probable that the asset can be realized. At this point, the asset should be derecognized.

In 2025, the balance of the loss ($295,000) can be fully used against current taxable profit ($345,000). In 2025, the company will record current tax income of $295,000×30%=$88,500. This will offset the current tax expense of $345,000×30%=$103,500, leaving a net current tax expense of $15,000. Although there is no deferred tax adjustment as the asset was previously derecognized, disclosure of the two different components of current tax expense will be required.

d.

	2021	2022	2023	2024	2025
Current tax expense (income) (from part b)	33,750	15,000	(48,750)	0	15,000
Deferred tax expense (income) – PPE (from part a)	3,750	3,750	(5,750)	(7,000)	2,250
Deferred tax (income) expense – loss (from part c)	0	0	(65,800)	65,800	0
Total tax expense (income)	37,500	18,750	(120,300)	58,800	17,250

16.11

a. Current Tax:

	Amount
Accounting profit	$ 150,000
Permanent differences:	
None	
Temporary differences:	
Unearned rent taxed in current year	96,000
Construction revenue not taxable	(90,000)
Capital allowance > depreciation	(4,000)
Taxable income	152,000
Tax rate	30%
Current tax payable	$ 45,600

Future Tax:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Unearned rent revenue	(96,000)	0	96,000	30%	28,800
Construction revenue	90,000	0	(90,000)	30%	(27,000)
PPE	108,000	119,000	11,000	30%	3,300
Total					5,100
Opening bal.					4,500
Adjustment					600

NOTE: Opening balance = (135,000−120,000)×30%=4,500 DR

Summary:

Current tax expense		$	(45,600)
Future tax benefit			600
Total tax expense		$	(45,000)

b. Balance sheet presentation

Non-current assets			
Future income taxes		$	17,700
Current liabilities			
Income taxes payable			45,600
Future income taxes			12,600

NOTE:

Non-current future tax asset=3,300+(1÷2×28,800)

Current future tax liability=27,000−(1÷2×28,800)

One-half of the future tax related to unearned revenue is classified as current and one-half as non-current because this is way in which the underlying unearned revenue would be classified. The future tax related to construction revenue is classified as current because the underlying construction in process account would be classified this way. The future tax related to the PPE is classified as non-current because PPE would be classified as non-current.

c. Income Statement Presentation:

Income tax expense		$	(45,600)

Balance Sheet Presentation:

Current liabilities			
Income tax payable		$	45,600

No future tax amounts are recorded.

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24.5: Chapter 17 Solutions

17.1

	DC or DB
The employer has no obligation to the fund beyond the required payment	DC
Accounting for this type of plan is more complicated	DB
The employer bears the investment risk with this type of plan	DB
A liability is only recorded when the required payment is not made by year-end	DC
Accounting for this type of plan will likely require the use of actuarial specialists	DB

17.2

a. $10,500,000÷12=$875,000 monthly salary

Employee contribution=$875,000×4%=$35,000

Employer contribution=$875,000×6%=$52,500

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		630,000	
	Pension liability Pension liability			87,500
	Cash (to the pension plan) Cash (to the pension plan)			962,500
	Payroll expense Payroll expense		10,500,000	
	Cash (to the employees) Cash (to the employees)			10,080,000

Note:

Pension expense=$52,500×12=$630,000

Pension liability=$52,500+$35,000=$87,500

Cash paid to the pension plan=($52,500+$35,000)×11=$962,500

Cash paid to the employees=$10,500,000−($35,000×12)=$10,080,000

b. The company will report a pension expense of $630,000 in the appropriate section of the income statement.

c. The company will report a pension liability of $87,500 on December 31, 2022. This will be reported as a current liability, as the funds are remitted to the plan in January 2023.

17.3

a. Pension expense=($832,000−$750,000)+$57,000=$139,000

b. Pension expense=($832,000−$750,000)+$57,000−$12,000=$127,000

17.4

Current Service Cost		$	1,600,000
Interest on DBO			936,000
Interest on Assets			(900,000)
Pension Expense		$	1,636,000

17.5

a.

	Pension Plan		**Company Accounting Records**			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	6,300,000 CR	5,950,000 DR	350,000 CR			
Service cost	575,000 CR				575,000 DR	
Interest: DBO	441,000 CR				441,000 DR	
Interest: assets		416,500 DR			416,500 CR	
Contribution		682,000 DR		682,000 CR		
Benefits paid	186,000 DR	186,000 CR				
Remeasurement		20,500 DR				20,500 CR
gain: assets						
Journal entry			103,000 DR	682,000 CR	599,500 DR	20,500 CR
Closing balance	7,130,000 CR	6,883,000 DR	247,000 CR			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		599,500	
	Other comprehensive income Other comprehensive income			20,500
	Net defined benefit liability Net defined benefit liability		103,000	
	Cash Cash			682,000

c. The company will report a non-current liability of $247,000 on December 31, 2021.

17.6

a.

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	4,400,000 CR	4,550,000 DR	150,000 DR			
Service cost	565,000 CR				565,000 DR	
Interest: DBO	352,000 CR				352,000 DR	
Interest: assets		364,000 DR			364,000 CR	
Contribution		422,000 DR		422,000 CR		
Benefits paid	166,000 DR	166,000 CR				
Remeasurement		52,000 CR				52,000 DR
loss: assets						
Remeasurement	176,000 CR					176,000 DR
loss: DBO						
Journal entry			359,000 CR	422,000 CR	553,000 DR	228,000 DR
Closing balance	5,327,000 CR	5,118,000 DR	209,000 CR			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		553,000	
	Other comprehensive income Other comprehensive income		228,000	
	Net defined benefit liability Net defined benefit liability			359,000
	Cash Cash			422,000

c.

Non-Current Liabilities:			
Net defined benefit liability		$	209,000
Accumulated Other Comprehensive Income:			
Net remeasurement losses on defined benefit liability		$	(228,000)

17.7

a. 2020:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	0 CR	0 DR	0 CR			
Service cost	389,000 CR				389,000 DR	
Interest: DBO	0 CR				0 DR	
Interest: assets		0 DR			0 CR	
Contribution		348,000 DR		348,000 CR		
Benefits paid	0 DR	0 CR				
Remeasurement		2,000 DR				2,000 CR
gain: assets						
Remeasurement	27,000 DR					27,000 CR
gain: DBO						
Journal entry			12,000 CR	348,000 CR	389,000 DR	29,000 CR
Closing balance	362,000 CR	350,000 DR	12,000 CR			

Remeasurement gains are derived by working backwards from the ending balances of the DBO and plan assets. No interest is calculated as the opening balances were zero and it is assumed that transactions occur at the end of the period.

2021:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	362,000 CR	350,000 DR	12,000 CR			
Service cost	395,000 CR				395,000 DR	
Interest: DBO*	25,340 CR				25,340 DR	
Interest: assets**		24,500 DR			24,500 CR	
Contribution		301,000 DR		301,000 CR		
Benefits paid	50,000 DR	50,000 CR				
Remeasurement		15,500 CR				15,500 DR
loss: assets***						
Remeasurement	0 CR					0 DR
loss: DBO						
Journal entry			110,340 CR	301,000 CR	395,840 DR	15,500 DR
Closing balance	732,340 CR	610,000 DR	122,340 CR			

* $362,000×7%=$25,340
** $350,000×7%=$24,500
*** $610,000−$350,000−$24,500−$301,000+$50,000=$15,500 CR (Work backwards from the ending balance to determine the balancing figure.)

2022:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	732,340 CR	610,000 DR	122,340 CR			
Service cost	410,000 CR				410,000 DR	
Interest: DBO*	58,587 CR				58,587 DR	
Interest: assets**		48,800 DR			48,800 CR	
Contribution		265,000 DR		265,000 CR		
Benefits paid	54,000 DR	54,000 CR				
Remeasurement		15,000 CR				15,000 DR
loss: assets						
Remeasurement	42,000 CR					42,000 DR
loss: DBO						
Journal entry			211,787 CR	265,000 CR	419,787 DR	57,000 DR
Closing balance	1,188,927 CR	854,800 DR	334,127 CR			

* $732,340×8%=$58,587
** $610,000×8%=$48,800

b.

2020:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		389,000	
	Other comprehensive income Other comprehensive income			29,000
	Net defined benefit liability Net defined benefit liability			12,000
	Cash Cash			348,000

2021:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		395,840	
	Other comprehensive income Other comprehensive income		15,500	
	Net defined benefit liability Net defined benefit liability			110,340
	Cash Cash			301,000

2022:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		419,787	
	Other comprehensive income Other comprehensive income		57,000	
	Net defined benefit liability Net defined benefit liability			211,787
	Cash Cash			265,000

c.

2020:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	12,000
Accumulated Other Comprehensive Income:			
Net remeasurement gains on defined benefit liability		$	29,000

2021:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	122,340
Accumulated Other Comprehensive Income:			
Net remeasurement gains on defined benefit liability		$	13,500*

* Note: Balance=$29,000 CR−$15,500 DR

2022:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	334,127
Accumulated Other Comprehensive Income:			
Net remeasurement losses on defined benefit liability		$	(43,500)*

* Note: Balance=$13,500 CR−$57,000 DR

17.8

a.

	Pension Plan		**Company Accounting Records**		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	6,246,000 CR	6,871,000 DR	625,000 DR		
Past service cost	215,000 CR				215,000 DR
Service cost	510,000 CR				510,000 DR
Interest:	581,490 CR				581,490 DR
Health Benefit Obligation*					
Interest: assets**		618,390 DR			618,390 CR
Contribution		430,000 DR		430,000 CR	
Benefits paid	850,000 DR	850,000 CR			
Journal entry			258,100 CR	430,000 CR	688,100 DR
Closing balance	6,702,490 CR	7,069,390 DR	366,900 DR		

* ($6,246,000+$215,000)×9%=$581,490
** $6,871,000×9%=$618,390

The post-employment health benefit expense will be $688,100 for the year. Note that the interest on the health benefit obligation is calculated after taking the past service adjustment into account. This is necessary as the past service adjustment was made on January 1.

b. The company will report a non-current asset of $366,900, subject to any adjustment required as a result of the asset ceiling test.

17.9

a.

	Pension Plan		Company Accounting Records		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	6,300,000 CR	5,950,000 DR	350,000 CR		
Service cost	575,000 CR				575,000 DR
Interest: DBO	441,000 CR				441,000 DR
Interest: assets		416,500 DR			416,500 CR
Contribution		682,000 DR		682,000 CR	
Benefits paid	186,000 DR	186,000 CR			
Remeasurement		20,500 DR			20,500 CR
gain: assets					
Journal entry			103,000 DR	682,000 CR	579,000 DR
Closing balance	7,130,000 CR	6,883,000 DR	247,000 CR		

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		579,000	
	Net defined benefit liability Net defined benefit liability		103,000	
	Cash Cash			682,000

c. The company will report a non-current liability of $247,000 on December 31, 2021.

17.10

a.

	Pension Plan		Company Accounting Records		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	4,400,000 CR	4,550,000 DR	150,000 DR		
Service cost	565,000 CR				565,000 DR
Interest: DBO	352,000 CR				352,000 DR
Interest: assets		364,000 DR			364,000 CR
Contribution		422,000 DR		422,000 CR	
Benefits paid	166,000 DR	166,000 CR			
Remeasurement		52,000 CR			52,000 DR
loss: assets					
Remeasurement	176,000 CR				176,000 DR
loss: DBO					
Journal entry			359,000 CR	422,000 CR	781,000 DR
Closing balance	5,327,000 CR	5,118,000 DR	209,000 CR		

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Pension expense Pension expense		781,000	
	Net defined benefit liability Net defined benefit liability			359,000
	Cash Cash			422,000

c.

Non-Current Liabilities:			
Net defined benefit liability		$	209,000

No accumulated other comprehensive income is reported. The remeasurement losses would simply be included in retained earnings through the closing of the pension expense account at the end of the year.

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24.6: Chapter 18 Solutions

18.1

a. **Lessee analysis (ASPE):**

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? Yes
- Is the lease term 75% or more of the asset's estimated economic or useful life? No

  6 years/10 years = 60%, which does not meet the 75% threshold
- Does the present value of the minimum lease payments exceed 90% of the leased asset's fair value? Yes, as calculated below.

  Present value of minimum lease payments:

  PV = (25,100 PMT/AD, 7 I/Y, 6 N, 3,000 FV) = $130,014 (rounded)

  ASPE interest rate used must be the lower of the two rates, since both are known.

  The present value compared to the fair value of $130,000 exceeds the 90% numeric threshold. Note that the leased asset and obligation cannot exceed fair value, so $130,000 will be the amount used as the valuation in the journal entries below.

Any one of the criteria met will result in a classification of a capital lease. In this case, the lease agreement has met two criteria: a bargain purchase option, and a present value of the minimum lease payments that exceeds 90% of the fair value of the asset.

Lessor Analysis (ASPE)

The lease agreement meets the capitalization criteria for the lessee above. Additionally, there are no uncertainties regarding the collectability of the lease payments and the costs yet to be incurred by the lessor (both must be met). This would, therefore, be classified as a capital lease for the lessor. The initial amount of net investment (fair value) of $130,000 exceeds the lessor's cost of $90,000, making the lease a sales-type lease to the lessor.

b. Gross investment (lease receivable) for the lessor:

The minimum lease payments regarding this lease are:

Calculation:	6×$25,100	=	$	150,600
BPO		+		3,000
Gross investment at inception			$	153,600

Net investment for the lessor:

The $130,000 fair value in this case (or the present value if it does not exceed the fair value).

c.

Lessee and Lessor				
Lease Amortization Schedule				
	Annual Lease Payment Plus BPO	Interest @ 7%	Reduction of Lease Obligation	Balance Lease Obligation
Date				
Jul 1, 2021	$ 25,100			$ 130,000
Jul 1, 2021	25,100		$ 25,100	104,900
Jul 1, 2022	25,100	$ 7,343	17,757	87,143
Jul 1, 2023	25,100	6,100	19,000	68,143
Jul 1, 2024	25,100	4,770	20,330	47,813
Jul 1, 2025	25,100	3,347	21,753	26,060
Jul 1, 2026	25,100	1,824	23,276	2,784
Jun 30, 2027	3,000	216*	2,784	0
	$ 153,600	$ 23,600	$ 130,000	

* Note: The lease valuation is limited to its fair value of $130,000 instead of the present value of $130,014. The difference ($14) is insignificant, thus a new interest rate is not required for the amortization schedule above. Had the present value been significantly higher than the fair value, a new effective interest rate would be required and calculated using the following methodology.

I/Y = (+/- 130,000 PV, 25,100 PMT/AD, 6 N, 3,000 FV) = 7.004876% or 7%

As can be seen, the 7% rate for the lessor has not significantly changed, so 7% will be the rate used in the amortization schedule above.

d. Lessee journal entries:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 1, 2021	Equipment under lease Equipment under lease		130,000	
	Obligations under lease Obligations under lease			130,000
	Note: Leased asset present value cannot exceed its fair value of $130,000.			
	Obligations under lease Obligations under lease		25,100	
	Cash Cash			25,100

Year-end adjusting entries:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Interest expense		3,672	
	Interest payable			3,672
	($7,343 × 6 ÷ 12 = $3,672)			
	Depreciation expense		6,425	
	Accumulated depreciation – leased equipment*			6,425
	(($130,000 – 1,500) ÷ 10 years economic life) × 6 ÷ 12)			
Jul 1, 2022	Interest payable		3,672	
	Interest expense		3,671	
	Obligations under lease		17,757	
	Cash			25,100
	For Interest expense: ($7,343 – $3,672 payable), some rounding involved			

* Note: Because there is a bargain purchase option, the leased asset is depreciated over its economic life rather than over the lease term. This is because the BPO, much less than the market price at that time, will be exercised by the lessee and the asset will be used beyond the lease term.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 13, 2022	Interest expense Interest expense		3,050	
	Interest payable Interest payable			3,050
	($6,100×6÷12)			
Dec 31, 2022	Depreciation expense Depreciation expense		12,850	
	Accumulated depreciation – leased equipment Accumulated depreciation – leased equipment			12,850
	(($130,000−1,500)÷10 years economic life)			

e. Lessor entries

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 1, 2021	Lease receivable Lease receivable		153,600	
	Cost of goods sold Cost of goods sold		90,000	
	Sales revenue Sales revenue			130,000
	Unearned interest income Unearned interest income			23,600
	Inventory Inventory			90,000
Jul 1, 2021	Cash Cash		25,100	
	Lease receivable Lease receivable			25,100

Year-end adjusting entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Unearned interest income Unearned interest income		3,672	
	Interest income Interest income			3,672
	($7,343×6÷12)			

2022 payment:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jul 1, 2022	Cash Cash		25,100	
	Lease receivable Lease receivable			25,100

Year-end adjusting entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2022	Unearned interest income Unearned interest income		6,722	
	Interest income Interest income			6,722
	($7,343×6÷12)+(6,100×6÷12)			

Note: The lessor could record six months of interest income in July, and six months of interest income on December 31 to match the lessee interest entries. However, the minimum reporting requirement would be to recognize interest income each reporting date (December 31). If the lessor also had interim reporting every six months within the fiscal year, interest income would be accrued every six months to ensure that both the interim and year-end financial statements were complete.

f. For the lessee:

Rather than using quantitative factors, such as the 75% and the 90% hurdles, the IFRS (IAS 17) criteria use qualitative factors to establish whether the risks and rewards of ownership have transferred to the lessee, which supports the classification as a capitalized lease:

- There is reasonable assurance that the lessee will obtain ownership of the leased property by the end of the lease term. If there is a bargain purchase option in the lease, it is assumed that the lessee will exercise it and obtain ownership of the asset (same as with ASPE).
- The lease term is long enough that the lessee will receive substantially all of the economic benefits that are expected to be derived from using the leased property over its life (equivalent to the 75% numeric threshold for ASPE).
- The lease allows the lessor to recover substantially all of its investment in the leased property and to earn a return on the investment. Evidence of this is provided if the present value of the minimum lease payments is close to the fair value of the leased asset (equivalent to the 90% numeric threshold for ASPE).
- The leased assets are so specialized that, without major modification, they are of use only to the lessee (IFRS (IAS 17) only).

If the lease is deemed as a lease subject to capitalization, the accounting treatment of the lease by the lessee would be the same as ASPE, although it would be referred to as a finance lease, rather than a capital, direct financing lease.

The treatment of the lease by the lessor would be the same as the lessee above, using qualitative criteria rather than numeric thresholds used for ASPE. (The criteria will not include the two-revenue recognition-based tests for uncertainty regarding collectability of lease payments and estimated un-reimbursable costs for the lessor.) The lease would be referred to as a finance lease, manufacturer or dealer rather than a sales-type lease.

g. If the lease agreement included an unguaranteed residual, the leased asset would be physically returned to the lessor at the end of the lease term. The depreciation charge would, therefore, be over the lease term and not the asset's economic life, which is the case when a bargain purchase is involved. As well, the depreciation calculation would not include a residual value.

18.2

a. Lessee analysis (IFRS, IAS 17)

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No
- Is the lease term covering the majority of the asset's estimated economic or useful life? Consider that the lease term is eight years and the economic life is ten years, so this constitutes a major part of the economic life of the asset. Yes, capitalize leased asset.
- The leased asset is a specialized piece of landscaping machinery, so it will only benefit the lessee without major modifications. Yes, capitalize leased asset.
- Does the present value of the minimum lease payments allow the lessor to recover substantially all of the leased asset's fair value as well as realizing a return on the investment? Consider that the present value of the minimum lease payments shown below is nearly equal to the fair value of $270,000, so it appears that the lessor will be reimbursed for all of the leased investment, including a return on investment. Yes, capitalize leased asset.

  Present value calculation:

Yearly payment	$	46,754
Less: Executory costs		2,000
Minimum annual lease payment	$	44,754

  Present value of minimum lease payments:
  PV = (44,754 PMT/AD, 9 I/Y, 8 N, 0 FV) = $269,999 (which is virtually 100% of the fair value of $270,000)

Under IFRS (IAS 17), the lessee will classify this lease as a finance lease since the lease term covers substantially all of the asset's useful life, the present value of the minimum lease payments allows the lessor to recover almost all of the leased asset's fair value (as well as realizing a return on the investment), and the machinery is highly specialized. Three of the criteria considered were met so it is reasonable to assume that the lessee will capitalize the lease.

The treatment of the lease by the lessor would be the same as the lessee above, using the qualitative criteria rather than numeric thresholds used for ASPE. Except the lessor classification criteria will not include the two-revenue recognition-based tests for uncertainty regarding collectability of lease payments and estimated un-reimbursable costs for the lessor. Again, since three criteria were met, it is reasonable to assume that the lease would be classified as a finance lease.

b. IFRS (IAS 17) states that the rate implicit in the lease is to be used wherever it is reasonably determinable. Using the fair value of $270,000, the implicit rate can be calculated:

I/Y = (+/- 270,000 PV, 44,754 PMT/AD, 8 N) = 9% (rounded) which is the same rate as the lessee's

Mercy Ltd.					
Lease Amortization Schedule					
(Lessee)					
	Annual Lease				
	Payment		Reduction		Balance
	Excluding	Interest	of Lease		Lease
Date	Executory Costs)	@ 9%	Obligation		Obligation
				$	270,000
Jan 1, 2021	$ 44,754		$ 44,754		225,246
Jan 1, 2022	44,754	$ 20,272	24,482		200,764
Jan 1, 2023	44,754	18,069	26,685		174,079
Jan 1, 2024	44,754	15,667	29,087		144,992
Jan 1, 2025	44,754	13,049	31,705		113,287
Jan 1, 2026	44,754	10,196	34,558		78,729
Jan 1, 2027	44,754	7,086	37,668		41,061
Jan 1, 2028	44,754	3,693*	41,061		0
	$ 358,032	$ 88,032	$ 270,000		
* rounded					

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Equipment under lease Equipment under lease		270,000	
	Obligations under lease Obligations under lease			270,000
Jan 1, 2021	Insurance expense Insurance expense		2,000	
	Obligations under lease Obligations under lease		44,754	
	Cash Cash			46,754
Dec 31, 2021	Depreciation expense Depreciation expense		33,750	
	Accumulated depreciation–leased equipment Accumulated depreciation–leased equipment			33,750
	($270,000÷8)			
Dec 31, 2021	Interest expense Interest expense		20,272	
	Interest payable Interest payable			20,272
Jan 1, 2022	Insurance expense Insurance expense		2,000	

	Interest payable Interest payable		20,272	
	Obligations under lease Obligations under lease		24,482	
	Cash Cash			46,754
Dec 31, 2022	Depreciation expense Depreciation expense		33,750	
	Accumulated depreciation–leased equipment Accumulated depreciation–leased equipment			33,750
Dec 31, 2022	Interest expense Interest expense		18,069	
	Interest payable Interest payable			18,069

d.

Mercy Ltd.			
Statement of Financial Position			
December 31, 2022			
Non-current assets			
Equipment under lease		$	270,000
Accumulated depreciation			(67,500)
			202,500
Current liabilities			
Interest payable			18,069
Current portion of long-term lease obligation*			26,685

Non-current liabilities			
Long-term lease obligation (200,764−26,685)		$	174,079

* The principal portion of the lease payment over the next 12 months after the reporting date of December 31, 2022. Refer to the amortization schedule above.

Required disclosure in the notes:

The following is a schedule of future minimum lease payments under the finance lease, expiring December 31, 2028, together with the balance of the obligation under finance lease.

Year ending December 31			
2023		$	46,754
2024			46,754
2025			46,754
2026			46,754
2027			46,754
2028			46,754
			280,524
Less amount representing executory costs			12,000
Total minimum lease payments			268,524
Less amount representing interest at 9%*			67,760
Balance of the obligation, December 31, 2022		$	200,764

* $88,032 total interest from schedule above−$20,272 recorded interest

Note: Additional disclosures would also be required about material lease arrangements, including contingent rents, sub-lease payments, and lease-imposed restrictions. These do not apply in this case.

18.3

Lessee Analysis (IFRS, IAS 17)

- Does the ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No
- Does the lease term cover the majority of the asset's estimated economic or useful life? Consider that the lease term is eight years, and the economic life is twelve years, the lease covers a major part of the economic life of the asset. Yes, capitalize leased asset.
- As the leased asset is a specialized piece of landscaping machinery, it will only benefit the lessee without major modifications. Yes, capitalize leased asset.
- Does the present value of the minimum lease payments allow the lessor to recover substantially all of the leased asset's fair value, as well as realizing a return on the investment? Consider that the present value of the minimum lease payments is $288,960, compared to the fair value of $300,000, making the minimum lease payments nearly equal to the fair value at that

date. As such, the lessor will recover substantially all of the leased asset's fair value, as well as a return of 9% on the investment. Yes, as calculated below.

Present value calculation:

Yearly payment		$	50,397
Less: Executory costs			2,500
Minimum annual lease payment		$	47,897

Present value of minimum lease payments:
PV = (47,897 PMT/AD, 9 I/Y, 8 N, 0 FV) = 288,960 (which is substantially most of the fair value of $300,000)

Consider the following criteria: The lease term covers substantially all of the asset's useful life, the present value of the minimum lease payments recovers substantially most of the leased asset's fair value (as well as realizing a return on the investment), and the machinery is highly specialized for the lessee. As these three factors have been met, it is reasonable to assume that the lease will be classified as a finance lease for the lessee under IFRS (IAS 17).

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Equipment under lease Equipment under lease		288,960	
	Obligations under lease Obligations under lease			288,960
Jan 1, 2021	Prepaid repair and maintenance expense Prepaid repair and maintenance expense		2,500	
	Obligations under lease Obligations under lease		47,897	
	Cash Cash			50,397
Jun 30, 2021	Depreciation expense Depreciation expense		18,060	
	Accumulated depreciation – Leased equipment Accumulated depreciation – Leased equipment			18,060
	($288,960÷8×6/12)			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jun 30, 2021	Interest expense		10,848	
	Interest payable			10,848
	(($288,960 – 47,897) × 9% × 6 ÷ 12)			
Jun 30, 2021	Repair and maintenance expense		1,250	
	Prepaid repair and maintenance			1,250
	($2,500 × 6 ÷ 12) from Jan 1 to June 30			
Jan 1, 2022	Repair and maintenance expense		1,250	
	Prepaid repairs		1,250	
	Interest expense		10,848	
	Interest payable		10,848	
	Obligations under lease		26,201	
	Cash			50,397
	For Repair and maintenance: ($2,500 × 6 ÷ 12) from June 1 to Dec 31, 2021			
	For Interest expense: ($288,960 – 47,897) × 9% = 21,696 – 10,848 accrued June 30 = 10,848 interest from July 1 to Dec 31, 2021			

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jun 30, 2022	Depreciation expense Depreciation expense		36,120	
	Depreciation – Leased equipment Depreciation – Leased equipment			36,120
Jun 30, 2022	Interest expense Interest expense		9,669	
	Interest payable Interest payable			9,669
	(($288,960−47,897−26,201)×9%×6÷12			
Jun 30, 2022	Repair and maintenance expense Repair and maintenance expense		1,250	
	Prepaid repair and maintenance Prepaid repair and maintenance			1,250
	($2,500×6/12) from Jan 1 to June 30			

18.4

a. This is a finance lease to Oberton Ltd. The IFRS (IAS 17) criteria use qualitative factors to establish whether the risks and rewards of ownership are transferred to the lessee, and supports classification as a finance lease:

   1. There is reasonable assurance that the lessee will obtain ownership of the leased property by the end of the lease term. If there is a bargain purchase option in the lease, it is assumed that the lessee will exercise it and obtain ownership of the asset. No
   2. The lease term is long enough that the lessee will receive substantially all of the economic benefits that are expected to be derived from using the leased property over its life (as evidenced by a four-year lease compared to a six-year estimated economic life). Yes, this represents a major part of the economic life of the asset.
   3. The lease allows the lessor to recover substantially all of its investment in the leased property and to earn a return on the investment. Evidence of this is provided if the present value of the minimum lease payments is close to the fair value of the leased asset. Yes

      PV = (4,313 PMT/AD excl. executory costs, 8 I/Y, 4 N, 3,500 guaranteed residual) = 18,000

      Compared to a fair value of $18,000 = 100% recovery of investment + an 8% return on investment.
   4. The leased assets are so specialized that, without major modification and/or significant cost to the lessor, they are of use only to the lessee. **No**

   The standard also states that these indicators are not always conclusive. The decision has to be made on the substance of each specific transaction. If the lessee determines that the risks and benefits of ownership have not been transferred to it, the lease is classified as an operating lease. In this case, two factors have been met so it would be reasonable to classify this lease as a finance lease for the lessee.

   For Black Ltd. (the lessor) under IFRS (IAS 17), the lease would receive the same treatment as for the lessee using the qualitative factors. Black Ltd. reasonably meets the factors, and is not a manufacturer or dealer, and so this is a finance lease.

b. Calculation of annual rental payment:

   PMT = +/- 18,000 PV, 8 I/Y, 4 N, 3,500 FV = $4,313+$20 executory costs = $4,333 lease payment, including executory costs of $20.

   This confirms that the interest rate used to calculate the lease payment was 8% per annum.

c.

Lease Amortization Schedule				
	Lease			
	Payment		Reduction	Balance
	Excluding	Interest	of Lease	Lease
Date	Executive Costs)	@ 8%	Obligation	Obligation
				$ 18,000
Jan. 1, 2021	$ 4,313		$ 4,313	13,687
Jan. 1, 2022	4,313	$ 1,095	3,218	10,469
Jan. 1, 2023	4,313	838	3,475	6,994
Jan. 1, 2024	4,313	560	3,753	3,241
Jan. 1, 2025	3,500	259	3,241	0
	$ 20,752	$ 2,752	$ 18,000	

d.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Asset under lease Asset under lease		18,000	
	Obligations under lease Obligations under lease			18,000
	PV = (4,313 PMT/AD, 8 I/Y, 4 N, 3,500 FV for guaranteed residual)			
Jan 1, 2021	Obligations under lease Obligations under lease		4,313	
	Insurance expense Insurance expense		20	
	Cash Cash			4,333
Dec 31, 2021	Interest expense Interest expense		1,095	
	Interest payable Interest payable			1,095
Dec 31, 2021	Depreciation expense Depreciation expense		3,625	
	Accumulated depreciation – asset under lease Accumulated depreciation – asset under lease			3,625
	($18,000−$3,500)÷4			
Jan 1, 2022	Obligations under lease		3,218	

	Obligations under lease			
	Interest payable Interest payable		1,095	
	Insurance expense Insurance expense		20	
	Cash Cash			4,333

e.

Oberton Ltd.			
Statement of Financial Position			
December 31, 2021			
Non-current assets			
Property, plant, and equipment			
Vehicles under lease		$	18,000
Less accumulated depreciation			3,625
			14,375
Current liabilities			
Interest payable			1,095
Obligations under lease (Note 1)			3,218
Non-current liabilities			
Obligations under lease (Note 1)		$	10,469

Note 1: The following is a schedule of future minimum payments under finance lease expiring January 1, 2025, together with the present balance of the obligation under the lease.

Year ending December 31, 2021			
2022		$	4,333
2023			4,333
2024			4,333
2025			3,500
			16,499
Amount representing executory costs			(60)
Amount representing interest			(2,752)
Balance of obligation December 31, 2021		$	13,687

Oberton Ltd.			
Statement of Income			
For the Year Ended December 31, 2021			
Administrative expense			
Depreciation expense		$	3,625
Insurance expense			20
Other expenses			
Interest expense			1,095

* from lease amortization schedule part (c)

f.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2025	Interest payable Interest payable		259	
	Obligations under lease Obligations under lease		3,241	
	Accumulated depreciation Accumulated depreciation		14,500	
	Loss on lease Loss on lease		300	
	Asset under lease Asset under lease			18,000
	Cash Cash			300

g. Entries for Black Ltd.:

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Lease receivable Lease receivable		20,752	
	Equipment acquired for lessee Equipment acquired for lessee			18,000
	Unearned interest income Unearned interest income			2,752
Jan 1, 2021	Cash Cash		4,333	
	Insurance expense Insurance expense			20
	Lease receivable Lease receivable			4,313
Dec 31, 2021	Unearned interest income Unearned interest income		1,096	
	Interest income Interest income			1,095

h.

Black Ltd.			
Income Statement			
For the Year Ended December 31, 2021			
Revenue			
Interest income (leases)*		$	1,095

* from lease amortization schedule part (c)

Note: The insurance recovery of $20 per year would offset the original insurance expense incurred by Black Ltd.

18.5

a. **Lessor Analysis (ASPE)**

The lease is a capital lease for the following reasons: the lease term exceeds 75% of the asset's estimated economic life (10÷12 years=83%), the collectability of payments is reasonably assured, and there are no further costs to be incurred. Furthermore, it is a sales-type lease because Helmac Ltd. will realize a gross profit of $199,122 ($283,774−$84,652) in addition to the financing charge of $75,878 to be amortized over the lease term using the effective interest method.

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Lease receivable* Lease receivable*		375,000	
	Cost of goods sold Cost of goods sold		84,652	
	Sales revenue** Sales revenue**			283,774
	Inventory Inventory			100,000
	Unearned interest income*** Unearned interest income***			75,878

* (35,000×10 years)+25,000 unguaranteed residual value Note: The unguaranteed residual value is included in the lessor's gross investment even though the lessee does not guarantee it. From the lessor's perspective, it anticipates receiving $25,000 from a

third party at the end of the lease term and it does not matter who they receive it from. ** The residual value is unguaranteed, so its present value must be removed from the sale price to the lessee. Present value of the minimum lease payments = (35,000 PMT/AD, 5 I/Y, 10 N, 25,000 FV) = $299,122 Sales price ($299,122−$15,348)=$283,774 OR remove the $25,000 residual value from the present value calculation above. PV = (35,000 PMT/AD, 5 I/Y, 10 N) = $283,774 *** The unearned interest income of $75,878 is calculated as the lease receivable (gross investment) less the present value of the minimum lease payments ($375,000−$299,122).

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Selling expense Selling expense		10,000	
	Cash Cash			10,000
	(expensed per Section 3065.43)			
Jan 1, 2021	Cash Cash		35,000	
	Lease receivable Lease receivable			35,000
May 31, 2021	Unearned interest income Unearned interest income		5,503	
	Interest income Interest income			5,503
	(((($299,122−$35,000)×5%)×5÷12)			

c. Assuming the $25,000 residual value was guaranteed by the lessee, this would change the initial entry for the sale as follows:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Lease receivable Lease receivable		375,000	
	Cost of goods sold Cost of goods sold		100,000	
	Sales revenue Sales revenue			299,122
	Inventory Inventory			100,000
	Unearned interest income Unearned interest income			75,878

The sales revenue and cost of goods sold would not need to be reduced by the present value of the estimated residual value ($15,348) calculated in part (b). The sales revenue would, therefore, be the amount equalling the present value of the minimum lease payments.

d. Lease payment PMT/AD = (299,122 PV, 5 I/Y, 12 N, 40,000 FV) = $29,748 (rounded)

18.6

a. Lessee Analysis (ASPE)

- Does ownership title pass? Yes, legal title passes to the lessee at the end of the lease term.
- Is there a BPO or a bargain renewal option? N/A, title passes, so BPO is not relevant.
- Is the lease term 75% or more of the asset's estimated economic or useful life? Yes

  10 years/10 years = 100% which meets the 75% threshold
- Does the present value of the minimum lease payments exceed 90% of the leased asset's fair value? Yes, as calculated below.

  Present value of minimum lease payments:

  PV = (61,507 PMT/A, 7 I/Y, 10 N, 0 FV) = $432,000 (rounded)

  The ASPE interest rate used must be the lower of the two, since both are known.

  The present value is equal to the fair value of $432,000, so it exceeds the 90% numeric threshold.

  Any one of the criteria met will result in a classification of a *capital lease for the lessee*. In this case, the lease agreement has met three criteria: legal title passes to the lessee, a lease term that exceeds 75% of the estimated economic life of the leased asset, and a present value of the minimum lease payments that exceeds 90% of the fair value of the asset.

Lessor Analysis (ASPE)

The lease agreement meets the capitalization criteria for the lessee above. In addition, there are no uncertainties regarding the collectability of the lease payments or the costs yet to be incurred by the lessor (both must be met). This would, therefore, be classified as a capital lease for the lessor. Additionally, as the lessor is a financing company this lease would be classified as a direct-financing lease by the lessor.

b. **Kimble Ltd. (lessee) entries**

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1, 2021	Cash Cash		432,000	
	Equipment (net) Equipment (net)			385,000
	Deferred profit on sale – leaseback Deferred profit on sale – leaseback			47,000
Jan 1, 2021	Equipment under lease Equipment under lease		432,000	
	Obligations under lease Obligations under lease			432,000
	(PV = (61,507 PMT/A, 7 I/Y, 10 N, 0 FV))			

Note: The present value calculation in this case will involve the annual payment (PMT) of an ordinary annuity (paid at the end of each year) for 10 periods at 7%. The interest rate under ASPE is to be the lower of the two rates, if both are known.

Earlier leasing questions involved the annual payment of an annuity due at the beginning of each year over the lease term.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31, 2021	Operating expenses Operating expenses		7,200	
	Accounts payable (or cash) Accounts payable (or cash)			7,200
Dec 31, 2021	Deferred profit on sale-leaseback Deferred profit on sale-leaseback		4,700	
	Depreciation expense Depreciation expense			4,700
	($47,000÷10 years lease term)			
Dec 31, 2021	Depreciation expense Depreciation expense		43,200	
	Accumulated depreciation – leased equipment Accumulated depreciation – leased equipment			43,200
	Interest expense Interest expense		30,240	
	Obligations under lease Obligations under lease		31,267	
	Cash Cash			61,507

Note: Under ASPE, Kimble Ltd. is to use the lower of the two rates. The deferred profit on the sale-leaseback is to be amortized on the same basis that the asset is being depreciated, which, in this case, is ten years.

Quick Finance Corp. (lessor) entries

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 2, 2021	Equipment acquired for lease Equipment acquired for lease		432,000	
	Cash Cash			432,000
Jan 2, 2021	Lease receivable Lease receivable		615,070	
	Equipment acquired for lease Equipment acquired for lease			432,000
	Unearned interest income Unearned interest income			183,070
	For Lease receivable: ($61,507×10)			
Dec 31, 2021	Cash Cash		61,507	
	Lease receivable Lease receivable			61,507
Dec 31, 2021	Unearned interest income Unearned interest income		30,240	
	Interest income Interest income			30,240
	(432,000×7%)			

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24.7: Chapter 19 Solutions

19.1

Transaction	Effect
Issuance of common shares	NE
Share split	NE
A revaluation of surplus resulting from a remeasurement of an available-for-sale asset	NE
Declaration of a cash dividend	D
Net income earned during the year	I
Declaration of a share dividend	D
Payment of a cash dividend	NE
Issuance of preferred shares	NE
Re-acquisition of common shares	D or NE
Appropriation of retained earnings for a reserve	D
A cumulative, preferred dividend that is unpaid at the end of the year	NE

19.2

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		300,000	
	Common shares Common shares			300,000
	(20,000×$15)			
Feb 1	Incorporation costs Incorporation costs		9,000	
	Common shares Common shares			9,000
Mar 15	Cash Cash		500,000	
	Preferred shares Preferred shares			500,000
	(10,000×$50)			
Apr 30	Equipment Equipment		50,000	
	Common shares Common shares			50,000
Jun 15	Cash Cash		125,000	
	Common shares Common shares			125,000

	(5,000×$25)			

19.3

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		500,000	
	Share subscription receivable Share subscription receivable		1,000,000	
	Common shares subscribed Common shares subscribed			1,500,000
	For Cash: (100,000×$5)			
	For Share subscription: (100,000×($15−$5))			

b.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		1,000,000	
	Share subscription receivable Share subscription receivable			1,000,000
	Common shares subscribed Common shares subscribed		1,500,000	
	Common shares Common shares			1,500,000

c.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		900,000	
	Share subscription receivable Share subscription receivable			1,000,000
	Common shares subscribed Common shares subscribed		1,500,000	
	Common shares Common shares			1,350,000
	Accounts payable Accounts payable			50,000
	For Cash: ($1,000,000×90%)			
	For Common shares: ($1,500,000×90%)			
	For Accounts payable: ($500,000×10%)			

d.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		900,000	
	Share subscription receivable Share subscription receivable			1,000,000
	Common shares subscribed Common shares subscribed		1,500,000	
	Common shares Common shares			1,350,000
	Contributed surplus Contributed surplus			50,000
	For Cash: ($1,000,000×90%)			
	For Common shares: ($1,500,000×90%)			
	For Contributed surplus: ($500,000×10%)			

e.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		900,000	
	Share subscription receivable Share subscription receivable			1,000,000
	Common shares subscribed Common shares subscribed		1,500,000	
	Common shares Common shares			1,400,000
	For Cash: ($1,000,000×90%)			
	For Common shares: ($1,500,000×90%+(100,000×10%×($5÷$15)×$15))			

19.4

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Treasury shares Treasury shares		55,000	
	Cash Cash			55,000
	(5,000×$11)			
	Cash Cash		80,000	
	Treasury shares Treasury shares			55,000
	Contributed surplus Contributed surplus			25,000
	For Cash: (5,000×$16)			

19.5

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 1	Cash Cash		340,000	
	Common shares Common shares			100,000
	Contributed surplus Contributed surplus			240,000
	For Cash: (20,000×$17)			
	For Common shares: (20,000×$5)			
	For Contributed surplus: (20,000×($17−$5))			
Jun 30	Common shares Common shares		50,000	
	Contributed surplus Contributed surplus		120,000	
	Retained earnings Retained earnings		20,000	
	Cash Cash			190,000
	For Common shares: (10,000×$5)			
	For Contributed surplus: (10,000×($17−$5))			
	For Cash: (10,000×$19)			

Note: The contributed surplus is reduced on a pro-rata basis, as this surplus resulted from a share premium on issue, and not from a previous re-acquisition.

19.6

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 15	Cash Cash		3,750,000	
	Common shares Common shares			3,750,000
	(150,000×$25)			
Mar 30	Common shares Common shares		250,000	
	Contributed surplus Contributed surplus			50,000
	Cash Cash			200,000
	For Common shares: (10,000×$25)			
	For Cash: (10,000×$20)			
Jul 31	Cash Cash		440,000	
	Common shares Common shares			440,000
	(20,000×$22)			
Oct 31	Common shares Common shares		369,375	
	Contributed surplus Contributed surplus		50,000	
	Retained earnings Retained earnings		15,625	

	Cash Cash			435,000
	For Common shares: (15,000×$24.625)			
	For Cash: (15,000×$29)			

Note: Average issue cost of shares	=((150,000−10,000)×$25)+(20,000×$22)160,000 shares
	=$24.625 per share

Also, note that the contributed surplus is fully utilized because it resulted from a previous re-acquisition of the same class of shares. As such, we do not need to allocate it on a pro-rata basis.

19.7

General Journal				
Date	Account/Explanation	F	Debit	Credit
May 5	Retained earnings Retained earnings		250,000	
	Common shares Common shares			250,000
	(100,000×10%×$25)			
May 15	Retained earnings Retained earnings		88,000	
	Dividend payable Dividend payable			88,000
	(100,000×110%×$0.80)			

May 20 – no journal entry required

General Journal				
Date	Account/Explanation	F	Debit	Credit
May 25	Dividend payable Dividend payable		88,000	
	Cash Cash			88,000
May 27	Retained earnings Retained earnings		660,000	
	Dividend payable Dividend payable			660,000
	(100,000×110%×8×$0.75)			

May 30 – no journal entry required

General Journal				
Date	Account/Explanation	F	Debit	Credit
May 31	Dividend payable Dividend payable		660,000	
	Inventory Inventory			660,000
	(100,000×110%×8×$0.75)			

19.8

a.

Calculation	**Preferred**	**Common**	**Total**
Current year: (50,000 shares×$3)	$ 150,000		$ 150,000
Balance of dividends	–	$ 1,050,000	1,050,000
	$ 150,000	$ 1,050,000	$ 1,200,000

b.

Calculation	Preferred	Common	Total
Arrears: (50,000 shares×$3×2 years)	$ 300,000		$ 300,000
Current year: (50,000 shares×$3)	150,000		150,000
Balance of dividends	–	$ 750,000	750,000
	$ 450,000	$ 750,000	$ 1,200,000

c.

Calculation	Preferred	Common	Total
Arrears, as before	$ 300,000		$ 300,000
Current year year basic dividend	150,000	$ 240,000	390,000
Current year participating dividend	196,146	313,854	510,000
	$ 646,146	$ 553,854	$ 1,200,000

Note: The basic preferred dividend is calculated as before. Then, a like amount is allocated to the common shares. The preferred dividend can be expressed as a percentage: $150,000÷$5,000,000=3% (or $3÷$100). Therefore, the common shares are also allocated a basic dividend of (3%×$8,000,000) = $240,000. This leaves a remaining dividend of $510,000, which is available for participation. The participation is allocated on a pro-rata basis as follows:

Carrying amounts of each class:

Preferred	$	5,000,000	38.46%
Common		8,000,000	61.54%
Total	$	13,000,000	100%

The participating dividend is therefore:

Preferred:	$510,000×38.46%	=	$196,146
Common:	$510,000×61.54%	=	$313,854

19.9

a. Implied value of the company before the dividend:

5,000,000 shares×$12=$60,000,000

50% share dividend would issue an additional 5,000,000×50%=2,500,000 shares

The ex-dividend price should be $60,000,000÷7,500,000=$8 per share

A 3-for-2 share split results in the same number of shares being issued as above, making the share price $8.

b. For the 50% share dividend, the dividend amount will be calculated as 2,500,000×$8=$20,000,000

Therefore, after the dividend, the equity section will appear as follows:

Common shares		$	32,500,000
Retained earnings			22,000,000
Total equity		$	54,500,000

A 3-for-2 share split has no effect on the accounts, as it simply increases the number of outstanding shares. Therefore, the equity section will appear as follows:

Common shares		$	12,500,000
Retained earnings			42,000,000
Total equity		$	54,500,000

c. Either action will result in the share price dropping to $8 per share from $12. However, the total reported equity will not change as it's just a question of how the deck will be shuffled, so to speak, in the equity section. The decision will depend on both the legal framework in the company's jurisdiction and the corporate objectives of the distribution. There may be legal restrictions and tax implications, with respect to the share dividend, which would make the share split easier to implement. On the other hand, if the directors would like to capitalize some of the retained earnings to potentially reduce future shareholder demands for dividends, then the share dividend would be the better approach. The directors will also have to consider if the shareholder response will be different for each scenario. The directors should also consider if there are any other contracts or agreements, such as loan covenants, that would be affected by the decision.

19.10

a.

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Cash Cash		45,000	
	Common shares Common shares			45,000
	Common shares Common shares		81,250	
	Contributed surplus Contributed surplus		7,000	
	Retained earnings Retained earnings		51,750	
	Cash Cash			140,000

Average issue price = ($280,000+$45,000)÷(35,000+5,000)=$8.125

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Retained earnings Retained earnings		48,000	
	Dividend distributable Dividend distributable			48,000
	((35,000+5,000−10,000)×10%×$16)			
	Dividend distributable Dividend distributable		48,000	
	Common shares Common shares			48,000
	Land Land		19,000	
	Preferred shares Preferred shares			19,000
	Retained earnings Retained earnings		44,000	
	Cash Cash			44,000

Preferred dividend: (4,500+1,000)×$2=$11,000
Common dividend: (35,000+5,000−10,000+3,000)×$1=$33,000

b.

Ocampo Inc.												
Statement of Changes in Shareholders' Equity												
Year Ended 31 December 2022												
												Accumulated
			Preferred		Common		Contributed		Retained		Other Comp.	
	Total		Shares		Shares		Surplus		Earnings		Income	
Balance on January 1	$	1,217,000	$	225,000	$	280,000	$	7,000	$	590,000	$	115,000
Comprehensive Income:												
Net income		120,000								120,000		
Revaluation		23,000										23,000
Total comprehensive income		143,000										
Shares issued		64,000		19,000		45,000						
Shares retired		(140,000)				(81,250)		(7,000)		(51,750)		
Cash dividend – common		(33,000)								(33,000)		
Cash dividend – preferred		(11,000)								(11,000)		
Share dividend – common		–				48,000				(48,000)		
Balance on December 31	$	1,240,000	$	244,000	$	291,750		–	$	566,250	$	138,000

Note: Additional details of the transactions and the authorized and issued shares would be contained in the notes to the financial statements.

19.11

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jan 15	Cash Cash		130,000	
	Treasury shares Treasury shares			110,000
	Contributed surplus Contributed surplus			20,000

Note: Treasury shares were acquired at a price of $440,000÷40,000=$11 per share. This is the price used to remove the treasury shares on resale.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Feb 28	Common shares Common shares		760,000	
	Cash Cash			705,000
	Contributed surplus Contributed surplus			55,000

Average issue price = $3,800,000÷250,000=$15.20 per share

50,000×$15.20=$760,000

General Journal				
Date	Account/Explanation	F	Debit	Credit
Jun 30	Preferred shares Preferred shares		625,000	
	Retained earnings Retained earnings		150,000	
	Cash Cash			775,000

Average issue price = $1,875,000÷75,000=$25 per share

25,000×$25=$625,000

There is no contributed surplus balance associated with preferred share re-acquisitions, so the full difference is charged to retained earnings.

General Journal				
Date	Account/Explanation	F	Debit	Credit
Dec 31	Retained earnings Retained earnings		294,500	
	Common shares Common shares			144,500
	Cash Cash			150,000

Common dividend: (250,000−30,000−50,000)×5%×$17=$144,500

Note: The shares remaining in treasury are excluded from the dividend calculation, as the company cannot pay itself a dividend. The company's issued share capital includes the treasury shares, although they are not outstanding.

Preferred dividend: (75,000−25,000)×$1×3 years=$150,000

Note: This calculation assumes that the cumulative, unpaid dividend on the retired preferred shares was not paid. Depending on the articles of incorporation and local legislation, the cumulative, unpaid dividend may need to be paid prior to retirement of the shares. This would result in an additional dividend of $50,000 (25,000×$1×2) paid on the date of retirement.

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24.8: Chapter 20 Solutions

20.1

a. Basic earnings per share calculation:

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting. An event is where the outstanding number of shares changes.

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event point when it initially occurs and backwards to the beginning of the fiscal year.

Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Sha Outstanc ×Facto ×Fracti of the Ye
2021						
1	Jan 1	Opening balance	100,000	2 × 1.15	2/12	38,
	Jan 1 – Mar 1					
2	Mar 1	6,000 shares issued	6,000			
	Mar 1 – Jul 1		106,000	2 × 1.15	4/12	81,
3	Jul 1	retired 2,000 shares	(2,000)			
	Jul 1 – Oct 1		104,000	2× 1.15	3/12	59,
4	Oct 1	15% stock dividend	×1.15			
	Oct 1 – Dec 1		119,600	2×	2/12	39,
5	Dec 1	10,000 shares issued	10,000			
	Dec 1 – Dec 31		129,600	2×*	1/12	21,
6	Subsequent event	Stock split 2-for-1	×2			
	Total WACS		259,200		12/12	240,

*Work restatements backwards to the beginning of the year

	Income	WACS	Basic EPS
Net income from continuing operations			
($310,000+(35,000×0.75))	$336,250		
Less preferred dividends	0		
Net income available to common shareholders	$336,250	240,865	$1.40

Disclosures:

Earnings per share:			Basic
Income from continuing operations		$	1.40
Loss from discontinued operations, net of tax*			(0.11)
Net income		$	1.29

* $35,000×(1−0.25)=26,250÷240,865

b. Common shareholders need to know how much of a company's available income can be attributed to the shares they own. This helps them assess future dividend payouts and the value of each share. Earnings per share (EPS) becomes a per share way of describing net income, making EPS a good metric for shareholders and investors. When the income statement reports discontinued operations, EPS should be disclosed for income from continuing operations, discontinued operations, and net income. These disclosures make it possible for shareholders and potential investors to know the specific impact of income from continuing operations on earnings per share, as opposed to a single EPS number, that includes income or loss from non-continuing operations not expected to continue.

c. EPS is used in the calculation of the price earnings ratio (market price of shares÷EPS), which compares the market price of the company's shares with income generated on a per-share basis. Market price of the company's shares will generally adjust after issuance of a stock dividend or a stock split. For the calculation of price earnings ratio to remain valid after a stock dividend or stock split, EPS should also be adjusted in the company's financial statements to assume that the additional shares have been outstanding since the beginning of the year in which the stock dividend or stock split occurred.

20.2

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting. An event is where the outstanding number of shares changes.

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event point it when initially occurs and backwards to the beginning of the fiscal year.

Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

a.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year
2021						
1	Jan 1	Opening balance	475,000	1.1	4/12	174,167
	Jan 1 – May 1					
2	May 1	25,000 shares issued	25,000			
	May 1 – Jul 1		500,000	1.1	2/12	91,667
3	Jul 1	10% stock dividend	×1.1			
	Jul 1 – Oct 1		550,000		3/12	137,500
4	Oct 1	Repurchased	(15,000)			
	Oct 1 – Dec 31	15,000 shares	535,500		3/12	133,750
	Total WACS		535,500		12/12	537,084

b.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year	
2021							
1	Jan 1	Opening balance	475,000	0.2	4/12		31,667
	Jan 1 – May 1						
2	May 1	25,000 shares issued	25,000				
	May 1 – Jul 1		500,000	0.2	2/12		16,667
3	Jul 1	1:5 reverse stock	×0.2				
	Jul 1 – Oct 1	split (1÷5=0.2)	(400,000)				
			100,000		3/12		25,000
4	Oct 1	Repurchased	(15,000)				
	Oct 1 – Dec 31	15,000 shares	85,000		3/12		21,250
	Total WACS		85,000		12/12		94,584

20.3

a.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year
2021						
1	Jan 1	Opening balance	500,000	3×1.1	1/12	137,500
	Jan 1 – Feb 1					
2	Feb 1	180,000 shares issued	180,000			
	Feb 1 – Mar 1		680,000	3×1.1	1/12	187,000
3	Mar 1	10% stock dividend	×1.1			
	Mar 1 – May 1		748,000	3×	2/12	374,000
4	May 1	Repurchased	(200,000)			
	May 1 – Jun 1	200,000 shares	548,000	3×	1/12	137,000
5	Jun 1	3-for-1 stock split	×3			
	Jun 1 – Oct 1		1,644,000		4/12	548,000
6	Oct 1	60,000 shares issued	60,000			
	Oct 1 – Dec 31		1,704,000		3/12	426,000
	Total WACS		1,704,000		12/12	1,809,500

b. Earnings per share:

$3,500,000−01,809,500 (declared dividend for non-cumulative preferred shares)

EPS = $1.93

c. Earnings per share:

$3,500,000−(100,000×$100×8%)1,809,500 (dividend entitlement for non-cumulative preferred shares)

EPS = $1.49

d. Earnings per share:

EPS				
Income from continuing operations		$	2.17	
Discontinued operations, net of tax*			(0.24)	
Net income		$	1.93	from part (b)

* ($432,000÷1,809,500)

e. The earnings process occurs continuously throughout the fiscal year and the capital basis can fluctuate during that time. It is, therefore, necessary to adjust the denominator of the EPS ratio to reflect the various lengths of time during the year that the different amounts of capital from the different number of shares outstanding were available to generate earnings during the year.

20.4

a. Basic earnings per share=$385,000÷700,000 = $0.55

Diluted EPS:

Bonds interest saved $757,232×6%×(1−0.25)×6÷12=$17,038

Additional shares $800,000÷$1,000×100×6÷12=40,000 shares

Individual effect 17,038÷40,000=$0.43 therefore, dilutive

Diluted EPS=($385,000+17,038)÷(700,000+40,000)=0.5433 = $0.54

Required disclosures:

Basic EPS $0.55

Diluted EPS $0.54

b. Earnings per share=$280,000÷700,000 = $0.40

Diluted EPS:

Bonds interest saved $757,232×6%×(1−0.25)×6÷12=$17,038

Additional shares $800,000÷$1,000×100×6÷12=40,000 shares

Individual effect 17,038÷40,000=$0.43 therefore, anti-dilutive

Required disclosures:

Basic and diluted EPS $0.40

Note that the company has convertible bonds, which means that it has a complex capital structure. This requires both basic and diluted EPS to be reported, even if they are the same amount.

20.5

a. Follow the three steps identified earlier in the chapter to calculate the WACS in the schedule below:

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year
2021						
1	Jan 1	Opening balance	550,000	×2	2/12	183,333
	Jan 1 – Mar 1					
2	Mar 1	Issued shares	50,000			
	Mar 1 – Jun 1		600,000	×2	3/12	300,000
3	Jun 1	Repurchased shares	(100,000)			
	Jun 1 – Aug 1		500,000	×2	2/12	166,667
4	Aug 1	2-for-1 stock split	×2			
	Aug 1 – Dec 31		1,000,000		5/12	416,667
	Total WACS				12/12	1,066,667

Basic EPS=($4,500,000−240,000)*÷1,066,667 = $3.99

* (40,000×$6)=$240,000

Note that the preferred shares are not convertible, so this company has a simple capital structure and needs only report its basic EPS.

b. The basic EPS will remain the same as the amount calculated in part (a). This is because the preferred shares are cumulative, so the dividend entitlement amount would be used to reduce the income available to common shareholders. For this reason, any dividends in arrears will not be included, since they would have already been included in the previous years' respective EPS calculations. To include dividends in arrears for cumulative preferred shares in 2021 would be, in effect, double counting.

c. The basic EPS will be the same amount as calculated in part (a). If the preferred shares are non-cumulative, only dividends that are declared are deducted from net income. Since they are paid up to date, they will be the same amount as the dividend amount used in part (a), making the EPS calculation the same.

d. If the preferred shares are non-cumulative, only dividends declared would be used in the numerator to reduce net income available to common shareholders. In this case, no dividends were declared in 2021, so the calculation would be:

Basic EPS=($4,500,000)÷1,066,667=$4.22

e. A stock split, which only increases the number of shares outstanding, will result in a decreased market price per share, making the shares more affordable to potential investors. If the company's shares are made more affordable to potential investors, the shares may become more marketable, causing an increase in the market value because of the stock split.

f. The weighted average number of shares outstanding provides the correct basis for EPS to be reported because the number of common shares outstanding throughout the year can fluctuate due to various in-year capital transactions. When stock dividends

or stock splits occur, a restatement of the weighted average number of shares to the beginning of the year must be made. This is done to allow valid comparisons can be made between periods before and after the stock dividend or stock split.

20.6

a. This company has a complex capital structure because it has options that can potentially be converted into common shares. Both basic and diluted EPS are required to be disclosed, even if the amounts are the same.

b. Basic EPS=$350,000÷200,000 = $1.75

Diluted EPS=$350,000÷200,000+4,091* = $1.71

* Additional common shares using the treasury method:

Shares purchased		45,000	
Less shares retired (45,000×$10)÷$11		(40,909)	
Net additional shares		4,091	shares

Note: A quick way to calculate the net additional common shares due to options (treasury method) is:

45,000 options×(($11−$10)÷$11)=4,091 additional shares

Required disclosures:

Basic EPS		$	1.75
Diluted EPS		$	1.71

c. Basic EPS=$350,000÷200,000 = $1.75

Diluted EPS = $1.75

Options are not in the money because the market price is $9, and the exercise price is $10. Options holders would not be motivated to purchase any common shares using their options because they can buy them directly from the market at a lower price.

Required disclosures:

Basic and diluted EPS		$	1.75

20.7

a. There will be no incremental shares in this case as these options are anti-dilutive. Recall that only an increase in additional shares will be dilutive since the net income (numerator) will remain unchanged. If call options have an exercise price ($10) that is lower than the market price ($13), these options will be anti-dilutive, as fewer shares will need to be issued (at $13) in order to obtain sufficient cash to exercise the options to purchase the 20,000 shares at $10. The net result would be a reduction of 4,615 outstanding shares, making these options anti-dilutive as calculated below:

Shares issued at $13 to obtain $200,000	15,385 increase
Using proceeds to exercise options at $10 per share	20,000 reduction

As this results in a net reduction of 4,615 common shares, these options are considered anti-dilutive and would be excluded from the diluted EPS calculation.

b.

Proceeds required to exercise options (20,000×$14)	$280,000
Shares issued at $13 to obtain $280,000	21,538 increase
Using proceeds to exercise options at $14 per share	20,000 reduction

There is a net increase of 1,538 common shares, making this dilutive. The diluted EPS calculation would include the additional 1,538 common shares.

If the exercise price is $12 instead of $14:

Proceeds required to exercise options (20,000×$12)	$240,000
Shares issued at $13 to obtain $240,000	18,462 increase
Using proceeds to exercise options at $12 per share	20,000 reduction

There is a net decrease of 1,538 common shares, making this anti-dilutive and, therefore, excluded from the diluted EPS calculation.

c. The company would not exercise the option to sell its common shares for $11 because the option price per share of $11 is lower than the market price of $13. These are, therefore, not dilutive.

20.8

a. Basic EPS=$400,000−10,000*÷60,000 = $6.50

* $50,000÷$100=500 shares×$20=$10,000 dividend annual entitlement

This company has a complex capital structure due to the convertible securities. As a result, diluted EPS is also required to be calculated and reported.

Individual effects:

4% convertible bonds:

Interest saved $97,277×5%×(1−0.24)	$3,697
Additional shares ($100,000÷$1,000)×25	2,500 shares

Individual EPS effects=$3,697÷2,500=$1.48 (therefore dilutive)

$20, convertible preferred shares:

Dividends saved	$10,000
Additional shares (500 preferred shares×10)	5,000

Individual EPS effects=$10,000÷5,000=$2.00 (therefore dilutive)

Ranking:	Convertible bonds	$1.48	#1
	Preferred shares	$2.00	#2

	Income (Numerator)	**Number of Shares (Denominator)**	**Individual EPS Effect**
Basic EPS	$390,000	60,000	$6.50
4% bonds – Interest saved	3,697		
Additional shares		2,500	
Subtotal	393,697	62,500	6.30
$20 convertible preferred shares	10,000		
Additional shares ($250,000÷$20)×7÷12		5,000	
Diluted EPS	403,697	67,500	$5.98

Required disclosures:

Basic EPS		$	6.50
Diluted EPS		$	5.98

b. Discontinued operations gain before tax $20,000

Discontinued operations gain, net of tax ($20,000−(1−0.24)) = $15,200
Net income from continuing operations = $400,000−$15,200 = $384,800
Basic EPS, continuing operations = $384,800−10,000÷60,000 = $6.25

Both the bonds and preferred shares remain dilutive with the same ranking as in part (a) as they continue to be less than the basic EPS from continuing operations for $6.25, and their individual EPS effects have not changed.

	Income (Numerator)	**Number of Shares (Denominator)**	**Individual EPS Effect**
Basic EPS (from continuing operations)	$374,800	60,000	$6.25
4% bonds – Interest saved	3,697		
Additional shares		2,500	
Subtotal	378,497	62,500	6.06
$20 convertible preferred shares			
Dividends saved	10,000		
Additional shares		5,000	
Diluted EPS	388,497	67,500	$5.76

Required disclosures:

	Basic	Diluted
Income from continuing operations	$ 6.25	$ 5.76
Discontinued operations gain, net of tax*	0.25	0.23
Net income	$ 6.50	$ 5.99

* Basic ($15,200÷60,000); Diluted ($15,200÷67,500)

20.9

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year	
2021							
1	Jan 1	Opening balance	70,000	×1.1	2/12		12,833
	Jan 1 – Mar 1						
2	Mar 1	Issued shares	30,000				
	Mar 1 – Jun 1		100,000	×1.1	3/12		27,500
3	Jun 1	10% stock dividend	10,000				
	Jun 1 – Nov 1		110,000		5/12		45,833
4	Nov 1	Repurchase					
	Nov 1 – Dec 31	common shares	(20,000)		2/12		15,000
	Total WACS		90,000		12/12		101,166

Basic EPS=$350,000−2,000*÷101,166 = $3.44

* ($2×1,000)

This company has convertible bonds and preferred shares, so its capital structure is complex and, therefore, requires calculation and disclosure of diluted EPS.

Individual effects:

Options:		
At an exercise price of $16, they are in the money.		
Additional shares issued	10,000	
Shares retired (10,000×$16=$160,000÷$18) =	8,889	
Net additional shares	1,111	dilutive

6%, convertible bonds:	
Interest saved ($80,000×0.06×(1−0.25)×8÷12)	$2,400
Additional common shares (8,000×8÷12)	5,333
Individual EPS effect=$2,400÷5,333=$0.45 (therefore dilutive)	

$2, convertible preferred shares:	
Dividends saved ($2×1,000)	$2,000
Additional shares	10,000
Individual EPS effect $2,000÷10,000=$0.20 (therefore dilutive)	

Ranking: Most to least dilutive

#1 Options	– no income effect
	– 1,111 shares

#2 Preferred shares	– income effect – $2,000
	– 10,000 shares

#3 Bonds – income effect	– $2,400
	– 5,333 shares

	Income (Numerator)	Number of Shares (Denominator)	Individual EPS Effect
Basic EPS (from continuing operations)	$348,000	101,166	$3.44
Options		1,111	
Subtotal	348,000	102,277	3.40
Preferred shares	2,000	10,000	
Subtotal	350,000	112,277	3.12
Bonds	2,400	5,333	
Diluted EPS	$352,400	117,610	$3.00

None of the securities failed to remain dilutive so all of them will remain in the diluted EPS calculation.

Disclosures:

Basic EPS		$	3.44
Diluted EPS		$	3.00

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21.1

Description	Section	Cash Flow
		In (Out)
Issue of bonds payable of $500 cash	Financing	500
Sale of land and building of $60,000 cash	Investing	60,000
Retirement of bonds payable of $20,000 cash	Financing	(20,000)
Redemption of preferred shares classified as debt of $10,000	Financing	(10,000)
Current portion of long-term debt changed from $56,000 to $50,000	Financing	*
Repurchase of company's own shares of $120,000 cash	Financing	(120,000)
Amortization of a bond discount of $500	Operating	Add $500 to net income
Issuance of common shares of $80,000 cash	Financing	80,000
Payment of cash dividend of $25,000 recorded to retained earnings	Financing	(25,000)
Purchase of land of $60,000 cash and a $100,000 note (the note would be a non-cash transaction that is not directly reported within the body of the SCF but requires disclosure in the notes to the SCF)	Investing	(60,000)
Cash dividends received from a trading investment of $5,000	Operating	5,000
Increase in an available for sale investment due to appreciation in the market price of $10,000	None – non-cash gain through OCI	–
Interest income received in cash from an investment of $2,000	Operating	2,000
Leased new equipment under an operating lease for $12,000 per year	Operating	Already in net income
Interest and finance charges paid of $15,000	Operating	(15,000)
Purchase of equipment of $32,000	Investing	(32,000)
Increase in accounts receivable of $75,000	Operating	(75,000)
Leased new equipment under a finance lease with a present value of $40,000	None – non-cash	–
Purchase of 5% of the common shares of a supplier company for $30,000 cash	Investing	(30,000)
Decrease in a sales related short term note payable of $10,000	Operating	(10,000)
Made the annual contribution to the employee's pension benefit plan for $220,000	Operating	(220,000)
Increase in income taxes payable of $3,000	Operating	3,000
Purchase of equipment in exchange for a $14,000 long-term note	None – non-cash	–

* The current portion of long-term debt for both years would be added to their respective long-term debt payable accounts and reported as a single line item in the financing section.

21.2

a.

Rorrow Ltd.
Balance Sheet
as at December 31, 2020

	2020	2019	Total W/C accounts except Cash*		Net Change
Current assets					
Cash	$ 152,975	$ 86,000			
Accounts receivable (net)	321,640	239,080			
Inventory	801,410	855,700	1,160,890	1,124,880	(36,010)
Prepaid insurance expenses	37,840	30,100			
Equipment	2,564,950	2,156,450			
Accumulated depreciation, equipment	(625,220)	(524,600)			
Total assets	$3,253,595	$2,842,730			
Current liabilities					
Accounts payable	$ 478,900	$ 494,500			
Salaries and wages payable	312,300	309,600	897,410	901,280	(3,870)
Accrued interest payable	106,210	97,180			
Bonds payable, due July 31, 2028	322,500	430,000			
Common shares	1,509,300	1,204,000			
Retained earnings	524,385	307,450			
Total liabilities and shareholders' equity	$3,253,595	2,842,730		Net change	(39,880)

* exclude current portion of long-term debt as this account is not a working capital account

Rorrow Ltd.
Income Statement
For the year ended December 31, 2020

Sales	$ 5,258,246
Expenses	
Cost of goods sold	3,150,180
Salaries and benefits expense	754,186
Depreciation expense	100,620
Interest expense	258,129
Insurance expense	95,976
Income tax expense	253,098
	4,612,189
Net income	$ 646,057

Rorrow Ltd.
SCF – Direct Method Worksheet

	I/S Accounts	Changes to Working Capital Accounts	Net Cash Flow In (Out)
Cash received from sales	$ 5,258,246	$ (82,560)	$ 5,175,686
Cash paid for goods and services	(3,150,180)	54,290	
	(95,976)	(7,740)	
		(15,600)	(3,215,206)
Cash paid to or on behalf of employees	(754,186)	2,700	(751,486)
Cash paid for interest	(258,129)	9,030	(249,099)
Cash paid for income taxes	(253,098)		(253,098)
Memo items:			
Depreciation expense	(100,620)		
Net cash flows from operating activities	$ 646,057	$ (39,880)	$ 706,797

This amount balances to net change in W/C accounts shown above

b.

Rorrow Ltd.			
Statement of Cash Flows – Operating Activities			
For the Year Ended December 31, 2020			
Cash flows from operating activities			
Cash received from sales		$	5,175,686
Cash paid for goods and services			3,215,206
Cash paid to or on behalf of employees			751,486
Cash paid for interest			249,099
Cash paid for income taxes			253,098
Net cash flows from operating activities		$	706,797

21.3

a.

Carmel Corp.						
Statement of Cash Flows						
For the Year Ended December 31, 2021						
Cash flows from operating activities						
Net Income					$	105,000
Adjustments for non-cash revenue and expense						
items in the income statement:						
Depreciation expense		$	48,000			
Gain on sale of investments			(2,200)			
Loss on sale of building			5,000			
Decrease in investments – trading			136,600			
Increase in accounts receivable						
($109,040−$89,040)			(20,000)			
Decrease in accounts payable						
($146,000−$55,200)			(90,800)			76,600
Net cash from operating activities						181,600
Cash flows from investing activities						
Proceeds from						

sale of building						
($225,000−$5,000)			220,000			
Purchase of land			(220,000)			
Net cash from investing activities						0
Cash flows from financing activities						
Reduction in long-term mortgage principal			(30,000)			
Issuance of common shares			20,000			
Payment of cash dividends			(8,000)			
Net cash from financing activities						(18,000)
Net increase in cash						163,600
Cash at beginning of year						84,000
Cash at end of year					$	247,600

Supplemental Disclosures:

1. The purchase of equipment through the issuance of $50,000 of common shares is a significant non-cash financing transaction that would be disclosed in the notes to the financial statements.

Cash paid interest		$	35,000

2. Note: Had there been cash paid income taxes, this would also be disclosed.

b. Free cash flow:

Net cash from operating activities		$	181,600
Capital expenditures – land			(220,000)
Cash paid dividends			(8,000)
Free cash flow		$	(46,400)

In the analysis of Carmel's free cash flow above, we see that it is negative. While including dividends paid is optional, it would not have made a difference in this case. What does make a difference, however, is that the capital expenditures are those needed to sustain the current level of operations. In the case of Carmel Corp., the land was purchased for investment purposes, and not to meet operational requirements. With this in mind, the free cash flow would more accurately be:

Net cash from operating activities		$	181,600
Capital purchases			0
Cash paid dividends			(8,000)
Free cash flow		$	173,600

This makes intuitive sense and it is supported by the results from one of the coverage ratios.

The current cash debt coverage provides information about how well Carmel Corp. can cover its current liabilities from its net cash flows from operations:

Net cash from operating activitiesAverage current liabilities

Carmel Corp.'s current cash debt coverage is 1.38 ($181,600÷((87,200+176,000)×50%)). The company has adequate cash flows to cover its current liabilities as they come due and so, overall, its financial flexibility looks positive.

In terms of cash flow patterns, we see a positive trend, as Carmel Corp. has managed to more than triple its cash balance in the year, mainly from cash generated from operating activities. They were able to pay $8,000 in dividends, or a 1.7% return. And if dividends are paid several times throughout the year, then the return is more than adequate for investors. Carmel Corp. also sold off its traded investments for a profit, and some idle buildings at a small loss, to obtain sufficient internal funding for some land that they want to purchase as an investment. They also managed to lower their accounts payable levels by close to 60%. All of this supports the assessment that Carmel Corp.'s financial flexibility looks reasonable.

c. The information reported in the statement of cash flows is useful for assessing the amount, timing, and uncertainty of future cash flows. The statement identifies the specific cash inflows and outflows from operating activities, investing activities, and financing activities. This gives stakeholders a better understanding of the liquidity and financial flexibility of the enterprise. Some stakeholders have concerns about the quality of the earnings because of the variety and subjectivity of the bases that can be used to record accruals and estimates. As a result, the higher the ratio of cash provided by operating activities to net income, the more stakeholders can rely on the earnings reported.

21.4

Lambrinetta Industries Ltd.						
Statement of Cash Flows						
Year Ended December 31, 2021						
Cash flows from operating activities						
Net income					$	161,500
Changes and Adjustments						
Depreciation expense*		$	25,500			
Change in A/R			27,200			
Change in A/P			11,900			
Change in investments, trading			(6,800)			
						57,800
Net cash from operating activities						219,300
Cash flows from investing activities						
Sold plant assets			37,400			
Purchase plant assets**			(130,900)			
Net cash from investing activities						(93,500)
Cash flows from financing activities						
Note issued***			42,500			
Shares issued for cash						
(81,600+37,400 in exch for land−						
			11,900			

130,900 ending balance)						
Cash dividends paid****			(188,700)			
Net cash from financing activities						(134,300)
Net decrease in cash						(8,500)
Cash at beginning of year						40,800
Cash at end of year					$	32,300

* $136,000−$13,600−$147,900
** $345,100−$51,000−$425,000
*** $75,000+$10,000−$119,500−$8,000
**** $314,500+$161,500−$287,300

Disclosures:

Additional land for $37,400 was acquired in exchange for issuing additional common shares.

21.5

a.

Egglestone Vibe Inc.						
Statement of Cash Flows						
For the Year Ended December 31, 2021						
Cash flows from operating activities						
Net income					$	24,700
Adjustments to reconcile net income to						
net cash provided by operating activities						
Depreciation expense (note 1)		$	55,900			
Loss on sale of equipment (note 2)			10,100			
Gain on sale of land (note 3)			(38,200)			
Impairment loss – goodwill			63,700			
Increase in accounts receivable			(36,400)			
Increase in inventory			(67,600)			
Decrease in accounts payable			(28,200)			(40,700)
Net cash used by operating activities						(16,000)
Cash flows from investing activities						
Purchase of investments – available for sale			(20,000)			
Proceeds from sale of equipment			27,300			
Purchase of land (note 4)			(62,400)			

Proceeds from sale of land			150,000			
Net cash provided by investing activities						94,900
Cash flows used by financing activities						
Payment of cash dividends (note 5)			(42,600)			
Issuance of notes payable			10,500			
Net cash used by financing activities						(32,100)
Net increase in cash						46,800
Cash at beginning of year						37,700
Cash at end of year					$	84,500

General note: During the year, Egglestone Vibe retired $160,000 in notes payable by issuing common shares.

Notes to statements:

1. $111,800−$15,600+X=$152,100;X=$55,900
2. $27,300−($53,000−$15,600)
3. $150,000−$111,800
4. $133,900−111,800+X=$84,500
5. Retained earnings account: $370,200+$24,700−X=$374,400; Dividend declared but not paid = $20,500

   Dividends payable account: $41,600+$20,500−$19,500=$42,600 cash paid dividends

b. Negative cash flows from operating activities may signal trouble ahead with regard to Egglestone's daily operations, including profitability of operations and management of its current assets, such as accounts receivable, inventory and accounts payable. All three of these increased the cash outflows over the year. In fact, net cash provided by investing activities funded the net cash used by both operating and financing activities. Specifically, proceeds from sale of equipment and land were used to fund operating and financing activities, which may be cause for concern if the assets sold were used to generate significant revenue. Shareholders did receive cash dividends, but investors may wonder if these payments will be sustainable over the long term. Consider that dividends declared were $20,500, which was quite high compared to the net income of $24,700. In addition, the dividends payable account still had a balance payable of $41,600 from prior dividend declarations not yet paid. This creates increased pressure on the company to find sufficient funds to catch-up with the cash payments owed to investors. Egglestone may not be able to sustain payment of cash dividends of this size in the long-term if improvement of its profitability and management of its receivables, payables, and inventory are not implemented quickly.

21.6

a. For operating activities, use the steps from earlier in the chapter for the direct method:

Step 3 – enter all the line items from the income statement to the most appropriate direct method category so that the total matches the income statement.

Step 4 – enter all the changes to the non-cash working capital accounts (except current portion of LT debt) to the most appropriate direct method category, and use the accounting equation technique to determine if the cash flow change for each account is positive or negative.

Complete the investing and financing sections as usual.

Bognar Ltd.								
Statement of Cash Flows Worksheet – Direct Method								
For the Year Ended December 31, 2020								
	Step 3			Step 4			Step 5	
						Changes to		
						W/C +/- add'l		Net
Cash flows from operating activities:	I/S Accounts			adjustments			cash flow	
Cash received from sales – Sales		$	1,852,400					
– Accounts receivable					$	(108,000)		$ 1,744,400
Cash paid for goods and services – COGS			(1,213,300)					
– Other operating expenses			(342,100)					
– Inventory						(146,000)		
– Accounts payable						(37,300)		(1,738,700)
Cash paid to employees								N/A
Cash received for interest income								0
Cash paid for interest for Bonds payable, net								
of discount ($1,034,250−1,089,000)=								
$54,750 non-cash interest expense			(126,500)			54,750*		(71,750)
Cash received for income taxes ($69,300−26,400)			59,400			(42,900)**		16,500
Cash received for dividends								0

Memo Items:										
Depreciation			(121,000)							
Depreciation			(82,500)							
Goodwill impairment			(66,000)							
Loss on Held for Trading investments			(32,500)			32,500***				
Gain on sale of land			24,200							
Loss on sale of machine			(10,800)							
Net cash flows from operating activities			(58,700)							(49,550)
Cash flows from investing activities:										
Proceeds from sale of land ($430,500−363,000+24,200 gain)										91,700
Proceeds from sale of building ($1,176,000−1,144,000=32,000) less accum. depr.										
($399,000+121,000−517,000)=$3,000 accum. depr. for the sold building										29,000
Sale of machinery										50,000
($918,750−125,000−1,188,000)=$394,250 less										
$166,000 = $228,250. $166,000 is a non-cash entry in exchange for shares										
($199,500−60,000−305,500)=$166,000)										(228,250)
Net cash flows from investing activities										(57,550)
Cash flows from financing activities:										

Issuance of preferred shares		
($885,150−$1,152,800)		267,650
Repurchase of common shares		(65,000)
Dividends paid ($326,550−5,000 common shares retirement−$58,700 net loss−		
$151,800)=$111,050 dividends for both preferred and common shares.		
Preferred shares dividend is $40,000. Common shares dividend is $71,050.		(111,050)
Net cash flows from financing activities		91,600
Net increase in cash		(15,500)
Cash, opening		21,000
Cash, closing	$	5,500

Supplemental Disclosures:

Cash paid interest and income taxes are already reported as categories in operating activities when using the direct method. Only the non-cash items require supplementary disclosure (below).

Non-cash:

Machinery for $394,250 ($918,750−$125,000−$1,188,000) was purchased in exchange for $166,000 in common shares and $228,250 in cash.

Solution Notes: * Bond amortization is a non-cash adjusting entry that affects interest expense in the income statement, therefore net income must be adjusted by $54,750 ($1,089,000−$1,034,250) bond amounts, net of discount. ** Deferred tax is a non-cash transaction affecting income tax expense in the income statement, therefore net income must be adjusted by $42,900 ($69,300−$26,400). *** The change in investments held for trading is due to the unrealized loss included in the income statement. This has already been adjusted in step 3, so no further action is required. Memo item only.

b.

Bognar Ltd.			
Statement of Cash Flows			
For the Year Ended December 31, 2020			
Cash flows from operating activities:			
Cash received from sales		$	1,744,400
Cash paid for goods and services			(1,738,700)
Cash paid for interest			(71,750)
Cash received for income taxes			16,500
Net cash flows from operating activities		$	(49,550)

c. Indirect Method

Bognar Ltd.						
Statement of Cash Flows (Indirect method)						
For the Year Ending December 31, 2020						
Cash flows from operating activities:						
Net loss		$	(58,700)			
Non-cash items (adjusted from net income)						
Gain on sale of land			(24,200)			
Depreciation ($121,000+82,500)			203,500			
Loss on impairment of goodwill			66,000			
Loss on sale of machine			10,800			
Loss on Held for Trading investment			32,500***			
Interest expense for bond payable			54,750*			
Cash in (out) from operating working capital:						
Increase in accounts receivable			(108,000)			
Increase in inventory			(146,000)			
Decrease in accounts payable			(37,300)			
Decrease in deferred taxes payable			(42,900)**			
Net cash flows from operating activities					$	(49,550)

* Bond amortization is a non-cash adjusting entry that affects interest expense in the income statement and is not included in the adjustments. Net income must, therefore, be adjusted by $54,750 ($1,089,000−$1,034,250) bond amounts, net of discount. ** Deferred tax is a non-cash transaction affecting income tax expense in the income statement and is not included in the adjustments. Net income must, therefore, be adjusted by $42,900 ($69,300−$26,400). *** The change in investments held for trading asset account is due to the unrealized loss included in the income statement.

Supplemental Disclosures (Indirect Method):

Interest paid		$	71,750

($126,500 interest expense−bonds payable, net of discount of $54,750 ($1,034,250−$1,089,000))

Non-cash:

Machinery for $394,250 ($918,750−$125,000−$1,188,000) was purchased in exchange for $166,000 in common shares and $228,250 in cash.

21.7

a. Land – Entry #1

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Land (new)		100,000	
	Cash			5,000
	Land (old)			80,000
	Gain on disposal of land			15,000

Land – Entry #2

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Land		78,000	
	Cash			78,000
	($98,000−$100,000+$80,000)			

Equipment – Entry #1

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation, equipment		15,000	
	Cash		2,000	
	Equipment			15,000
	Gain on sale of equipment			2,000

Equipment – Entry #2

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation, equipment		2,800	
	Loss on disposal of equipment		1,200	
	Equipment			4,000

Equipment – Entry #3

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Equipment		9,000	
	Cash ($60,000+$15,000+$4,000−$70,000)			9,000

Equipment – Entry #4

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Depreciation expense		4,400	
	Accumulated depreciation, equipment ($6,600−$20,000+$15,000+$2,800)			4,400

Lease – Entry #1

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Equipment under lease		99,854	
	Obligations under lease			99,854
	PV = 20,000 PMT/AD, 8 I/Y, 6 N = $99,854			

Lease - Entry #2

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Obligations under lease		20,000	
	Cash			20,000

Lease – Entry #3

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Interest expense		3,194	
	Interest payable			3,194
	(($99,854−$20,000)×8%×6÷12)			

Lease – Entry #4

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Depreciation expense		8,321	
	Accumulated depreciation, lease			8,321
	($99,854÷6 years×6÷12)			

b.

Investing activities:			
Payment on exchange of land			(5,000)
Purchase of land			(78,000)
Proceeds from sale of equipment			2,000
Purchase of equipment			(9,000)
Financing activities:			
Payment on capital lease			(20,000)

c.

Partial statement of cash flows – indirect method			
Cash flows from operating activities:			
Net income			N/A
Non-cash items (adjusted from net income):			
Gain on disposal of land			(15,000)
Gain on sale of equipment			2,000
Loss on disposal of equipment			1,200
Depreciation expense on equipment			4,400
Depreciation expense on leased equipment			8,321
Cash in (out) from operating working capital:			
Increase in interest payable			3,994
Net cash flows from operating activities			N/A

Disclosures:

Interest paid ($3,994 interest expense−$3,994 increase in interest payable)		$	0

Non-cash items:

Land that originally cost $80,000 was exchanged for another tract of land with a fair value of $100,000 and a cash payment of $5,000.

Equipment worth $99,854 was acquired in exchange for a six year capital lease at an annual interest rate of 8%.

21.8

Aegean Anchors Ltd.			
Statement of Cash Flows (Indirect method)			
For the Year Ended December 31, 2020			
Cash flows from operating activities:			
Net income		$	288,000
Non-cash items (adjusted from net income)			
Depreciation			217,000
Equity in earnings of Vogeller			(26,400)
Loss on sale of equipment			3,000
Cash in (out) from operating working capital:			
Increase in accounts receivable			(95,640)
Decrease in inventory			(51,120)
Decrease in accounts payable			(73,200)
Decrease in income taxes payable			(10,800)
Net cash flows from operating activities			250,840
Cash flows from investing activities:			
Loan to Vancorp Ltd.			(350,000)
Cash payment received from Vancorp Ltd.			48,200
Sale of equipment			50,000
Net cash flows from investing activities			(251,800)
Cash flows from financing activities:			
Cash dividends paid			(102,000)
Net cash flows from financing activities			(102,000)
Net decrease in cash			(102,960)
Cash and cash equivalent, opening			(34,200)
Cash and cash equivalent, closing		$	(137,160)

Disclosures:

Interest paid	$	18,000
Interest received		11,300
Income taxes paid		181,000

Non-cash:

Aegean Anchors acquired equipment in exchange for a financing lease of $324,000. (Interest rate is 8%.)

Cash and cash equivalents:

	2020	2019
Cash	$ 33,960	$ 53,280
Bank overdraft	(171,120)	(87,480)
Total cash and cash equivalents	$ (137,160)	$ (34,200)

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22.1

Item	Type of Change
The useful life of a piece of equipment was revised from five years to six years.	**AE**
An accrued litigation liability was adjusted upwards once the lawsuit was concluded.	**AE**
An item was missed in the year-end inventory count.	**E**
The method used to depreciate a factory machine was changed from straight-line to declining balance as it was felt this better reflected the pattern of use.	**AE**
A company adopted the new IFRS for revenue recognition.	**P**
The accrued pension liability was adjusted downwards as the company's actuary had not included one employee group when estimating the remaining service life.	**E**
The allowance for doubtful accounts was adjusted upwards due to current economic conditions.	**AE**
The allowance for doubtful accounts was adjusted downwards because the previous estimate was based on an aged trial balance that classified some outstanding invoices into the wrong aging categories.	**E**
A company changed its inventory cost flow assumption from LIFO to FIFO, as the newly appointed auditors indicated that LIFO was not allowable under IFRS.	**E**
A company began to apply the revaluation model to certain property, plant, and equipment assets, as it was felt this presentation would be more useful to investors.	**P**

22.2

a. Because the change in the useful life of the copyright is based on the existence of new information and new conditions, this would be a change in estimate and should be treated prospectively by adjusting amortization only for current and future years. The recording of the insurance premium is an accounting error as it should have originally been recorded as a prepaid expense. As such, this error should be accounted for retrospectively, correcting the error in the appropriate period and restating comparative information.

b. Original amortization=(100,000−10,000)÷10 years=9,000 per year

Amortization to 1 January 2021=9,000×3 years=27,000

NBV at 1 January 2021=(100,000−27,000)=73,000

New rate=73,000÷2 years=36,500 per year

Note: Because the books are still open for 2021, we can correct the error for the current year as well as for the future year. However, the company would have to consider when the conditions changed that led to the estimate revision.

Journal entry:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Amortization expense Amortization expense		36,500	
	Copyright Copyright			36,500

The insurance premium should have been reported as a prepaid asset when purchased, and recognized as an expense at $1,500÷12=$125 per month. Thus, for the year ended December 31, 2020, only $125×2=$250 should have been expensed. The following adjustment is required to correct this error:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Insurance expense Insurance expense		1,250	
	Retained earnings Retained earnings			1,250

Note that this entry simply moves ten months of the insurance expense from 2020 to 2021. There is no need to adjust the prepaid as the insurance was fully utilized by the end of 2021. However, a comparative balance sheet, if presented, would need to include the prepaid expense of $1,250.

22.3

In this case, there is both an accounting error and a change in accounting estimate. The error should be corrected first, retrospectively, and then the change in estimate can be applied.

Depreciation as originally calculated: $50,000÷5 years=$10,000 per year

Depreciation should have been: $50,000−$5,000÷5 years=$9,000 per year

The following journal entry corrects the 2021 accounts:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation Accumulated depreciation		1,000	
	Retained earnings Retained earnings			1,000

The carrying amount is now $50,000−$10,000+$1,000=$41,000

As one year has passed, the remaining useful life is now 5−1=4 years.

Double declining balance rate=(1÷4)×2=50%.

Therefore, 2022 depreciation will be $41,000×50%=$20,500

Note: Remember that residual values are not used in DDB calculations.

The following journal entry will record current year depreciation:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Depreciation expense Depreciation expense		20,500	
	Accumulated depreciation Accumulated depreciation			20,500

22.4

This is an accounting policy change that should be applied retrospectively. It means that the effect of the revaluations on prior years will need to be recorded, as well as the effects on depreciation expense. The changes are summarized below:

Year	Depr. Taken	Carrying Value	Revaluation	Revised Depr.	New CV
2018	25,000	725,000	800,000		800,000
2019	25,000	700,000	800,000	27,586	772,414
2020	25,000	675,000	800,000	27,586	744,828
2021	25,000	650,000	825,000	30,556	794,444

Note: On December 31, 2018, the building is revalued, creating a revaluation surplus of 75,000 (800,000−725,000). The revised depreciation is calculated as 800,000÷29 years=27,586. This depreciation rate is used for 2019 and 2020. On December 31, 2020, the building is revalued creating a valuation surplus of 80,172 (825,000−744,828). The new depreciation rate to be used for 2021 and 2022 is 825,000÷27 years=30,556.

On January 1, 2022, the total depreciation actually recorded is $100,000 (25,000×4). Total depreciation that would have been recorded under the revaluation model is $110,728 (25,000+27,586+27,586+30,556). The additional depreciation of 10,728 (110,728−100,000) needs to be adjusted to retained earnings. As well, the two revaluation surplus amounts 155,172 (80,172+75,000) need to be reflected in the revaluation surplus account.

The following journal entry adjusts the opening balances on January 1, 2022:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Retained earnings Retained earnings		10,728	
	Building Building		75,000	
	Accumulated depreciation Accumulated depreciation		69,444	
	Revaluation surplus (OCI) Revaluation surplus (OCI)			155,172

Note: Remember that when using the revaluation model, previous accumulated depreciation amounts are eliminated when a revaluation occurs. Thus, the accumulated depreciation on December 31, 2021, would be $30,556, so the adjustment needs to be 69,444 (100,000−30,556). The building cost adjustment is based on the revised value (825,000) less the original cost recorded (750,000). This solution also assumes that there is no reclassification of OCI to retained earnings, as this is an optional treatment.

In 2022, the depreciation would be recorded as follows:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Depreciation expense Depreciation expense		30,556	
	Accumulated depreciation Accumulated depreciation			30,556

When the revaluation occurs on December 31, 2022, previous accumulated depreciation (the prior two years) is reversed and the revaluation is recorded:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation Accumulated depreciation		61,112	
	Building Building			61,112

The carrying value of the building, prior to revaluation, is 763,888 (825,000−61,112).

The entry to record the revaluation on December 31, 2022, is:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Revaluation surplus (OCI) Revaluation surplus (OCI)		23,888	
	Building Building			23,888

This will reduce the carrying value of the building to $740,000.

22.5

a. This is an accounting policy change that should be applied retrospectively. The following journal entry is required on January 1, 2021, to reflect the adjustment:

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Inventory (opening)* Inventory (opening)*		70,000	
	Retained earnings Retained earnings			49,000
	Income taxes payable Income taxes payable			21,000

* The account used here will depend on whether the company uses a perpetual or periodic inventory system. With a periodic system, opening inventory is adjusted. With a perpetual system, cost of sales would be adjusted.

Note: Only the effect in 2020 needs to be considered. Inventory adjustments are self-correcting over a two-year period, so only the difference in the 2020 ending inventory needs to be adjusted.

b. The comparative column (2020) of the retained earnings statement would look like this:

		2020
		(Restated)
Opening retained earnings as previously stated	$	1,100,000
Accounting policy change, net of tax of $18,000		42,000
Opening balance, restated		1,142,000
Net income (restated)		282,000
Closing retained earnings	$	1,424,000

The effect on opening retained earnings (i.e., January 1, 2020) reflects the inventory difference on December 31, 2019 (650,000−590,000) less tax. The net income for 2020 is calculated as follows:

Income as previously reported	$	275,000
Reversal of 2019 difference, less tax		(42,000)
2020 difference, less tax		49,000
Revised net income	$	282,000

22.6

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Salaries payable Salaries payable		7,000	
	Salaries expense Salaries expense			7,000
	Miscellaneous revenue Miscellaneous revenue		8,000	
	Accumulated depreciation Accumulated depreciation		31,000	
	Vehicle Vehicle			40,000
	Depreciation expense Depreciation expense			5,000
	Retained earnings Retained earnings		6,000	
	Bad debt expense Bad debt expense		12,500	
	Allowance for doubtful accounts Allowance for doubtful accounts			12,500

AFDA s/b $1,500,000×2%	=	$30,000
Current AFDA balance=$1,750,000×1%	=	$17,500
Adjustment required		$12,500

General Journal				
Date	Account/Explanation	F	Debit	Credit

	Inventory Inventory		12,000	
	Retained earnings Retained earnings		8,000	
	Cost of sales Cost of sales			20,000

22.7

Repair Expense Error

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation Accumulated depreciation		2,250	
	Equipment Equipment			9,000
	Depreciation expense Depreciation expense			1,500
	Retained earnings Retained earnings		8,250	

2021 depreciation recorded=$9,000÷6 years×1÷2=$750

2022 depreciation recorded=$9,000÷6 years=$1,500

Accrued Interest Omission

Accrued interest receivable on December 31, 2022=$150,000×8%×1÷12=$1,000

Note: This represents the interest accrued between November 30 and December 31.

As the balance of the interest receivable account is $1,000, no adjustment is required as the balance is already correct.

Land Depreciation Error

Building depreciation as recorded:

2020: (1,000,000−50,000)÷50×12=	$	9,500
2021:	$	19,000
2022:	$	19,000
Total	$	47,500

Building depreciation should be:

2020: (750,000−50,000)÷50×12=	$	7,000
2021:	$	14,000
2022:	$	14,000
Total	$	35,000

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Land Land		250,000	
	Building Building			250,000
	Accumulated depreciation Accumulated depreciation		12,500	
	Depreciation expense Depreciation expense			5,000
	Retained earnings Retained earnings			7,500

Note: Adjustment to accumulated depreciation is 12,500 (35,000−47,500), which is allocated to depreciation expense (14,000−19,000=5,000) for the current year, with the remainder allocated to retained earnings.

Machine Disposal Error

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Accumulated depreciation Accumulated depreciation		52,000	
	Factory machine Factory machine			50,500
	Gain on disposal Gain on disposal			1,500

22.8

Depreciation charges should be:

2020: 35,000×33.33%=11,666

2021: (35,000−11,666)×33.33%=7,778

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Automobile Automobile		35,000	
	Accumulated depreciation Accumulated depreciation			19,444
	Depreciation expense Depreciation expense		7,778	
	Income tax expense Income tax expense			1,556
	Retained earnings Retained earnings			18,667
	Income tax payable or deferred taxes Income tax payable or deferred taxes			3,111

Retained earnings adjustment: (35,000−11,666)×80%

Tax payable (deferred) adjustment: (35,000−19,444)×20%

General Journal				
Date	Account/Explanation	F	Debit	Credit
	Provision for lawsuit liability Provision for lawsuit liability		750,000	
	Recovery of provision Recovery of provision			750,000
	Deferred tax asset Deferred tax asset			150,000
	Deferred tax expense Deferred tax expense		150,000	
	Inventory Inventory		11,500	
	Sales Sales		18,000	
	Cost of sales Cost of sales			11,500
	Accounts receivable Accounts receivable			18,000
	Income tax payable Income tax payable		1,300	
	Income tax expense Income tax expense			1,300
	Retained earnings Retained earnings		48,000	
	Revenue Revenue			60,000

	Income tax expense Income tax expense		12,000	

22.9

	2021		2020	
Reported net income	$	1,200,000	$	1,050,000
Adjustment for rent		60,000		(90,000)
Adjustment for office supplies		5,700		(4,500)
Adjustment for warranty		(6,000)		(38,000)
Corrected net income	$	1,259,700	$	917,500

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23.1

a. Sterling Inc. is owned by a close family member of a director of Kessel Ltd. This makes Kessel Ltd. and Sterling Inc. related parties. Disclosure is required for the relationship, any transactions during the period, and the fact that the amount was written off during the year.

b. Kessel Ltd.'s 35% share ownership of Saunders Ltd. would normally be presumed to give it significant influence, thus making the parties related. As such, the nature of the relationship and the transaction itself need to be disclosed. There is, however, no requirement to state that the transaction was at arm's length unless this fact can be verified.

c. Mr. Chiang is a member of the key management personnel of Kessel Ltd., making them related parties. Therefore, the details of the transaction need to be disclosed along with the nature of the relationship. As well, the guarantee of the mortgage should also be disclosed.

d. Even where there is economic dependence, regular supplier-customer relationships do not indicate related party relationships. Thus, no separate disclosure of this transaction is required.

23.2

a. Without any further information about cross shareholdings, the presence of a single common director between companies does not, in and of itself, indicate a related party relationship.

b. A single investor has influence, but not control, over the other two companies. This would not normally indicate a related party relationship between the two associate companies.

c. Each of the directors is individually related to each of the companies. The presence of common directors does not, in and of itself, indicate a related party relationship between the two companies. However, IAS 24 does require an examination of the substance, and not just the form, of the relationships. If the five directors have demonstrated a pattern of acting together as a single voting unit, then it can be argued that as a group, they control the two companies. In this case, the presence of a common controlling group would indicate that the companies are related.

23.3

a. January 8, 2023: The appropriation was approved after the year-end and there is no indication that this action was substantively enacted prior to the approval date. As such, this was not a condition present at year-end, and no adjustment is required. However, disclosure should be made, as this event will likely have a material effect on future operations.

b. January 27, 2023: Although the bonus was approved after year-end, it clearly relates to the financial results of the year and was committed under employment contracts that existed at the year-end. The bonus should thus be accrued on December 31.

c. February 3, 2023: The additional taxes should be accrued, as the tax dispute already existed at the year-end. The change will be treated prospectively, (i.e., adjust in 2022 only) unless it can be demonstrated that the previous provision was made in error.

d. February 21, 2023: This should be adjusted, as the error caused by the fraud existed at the reporting date. As well, because there is an illegal act involved, there may be further disclosures required.

e. March 16, 2023: Dividends should not be adjusted, as there is no obligation to pay them until they are declared. However, disclosure of the declaration should be made.

f. March 18, 2023: The condition did not exist at the reporting date, so no adjustment is required. If the loss of the machine will have a material effect on future operations, then disclosure should be made.

23.4

Although the damage only appeared after the reporting period, the engineers have indicated that the problem may have been present for several years. This would indicate the presence of an adjusting event. However, a provision should not be made as there is no legal obligation to make the repairs at year-end, that is, the building could simply be abandoned rather than repaired. What should be done, however, is an impairment review under IAS 36, and any impairment of the asset should be recorded.

23.5

The auditor needs to consider if there is sufficient evidence available to support a clean opinion, that is, that the financial statements have not been materially misstated. The correspondence with the legal counsel should be examined carefully in order to determine if the assertion that the outcome cannot be determined is supportable. Contingent liabilities are not accrued as provisions if there is only a possible, but not present, obligation that will only be settled by an uncertain future event, or if a present obligation cannot be reliably measured. If accrual of the provision is not warranted, disclosure in the notes is still required. In this case, the effects appear material, so the auditor will need to make sure that the appropriate note disclosures are made.

The auditor will also need to assess management's assertion that the plant will be closed if the legal case is lost as this may have a pervasive effect on future operations. The auditor may need to question the going concern assumption. Although it may be too early to make this determination, the compromise of the going concern assumption would lead to presentation of the financial statements using a different basis of accounting. If management refused to make this change, then the auditor would need to consider if a qualified, or adverse, opinion was warranted.

Even if the auditor is satisfied with the disclosures made, the pervasiveness of the matter may suggest the need for an emphasis of matter paragraph to be included in the audit report, thus drawing attention to the disclosures.

23.6

Revenue test:

($289,000×10%)=$28,900. Business lines 1 and 4 meet this threshold.

Profit/(Loss) Test:

The total profits of $52,000 are greater than the total losses of $14,000, therefore ($52,000×10%)=$5,200

In absolute terms, ignoring the + and – signs, business lines 1, 2, and 4 meet this threshold.

Assets test:

($478,000×10%)=$47,800. Business lines 1 and 4 meet this threshold.

Conclusion:

Based on the tests above, business lines 1, 2, and 4 all meet at least one of the three tests above.

For the 75% or greater test ($289,000×75%)=$216,750

Sum of business lines 1, 2, and 4 (90,000+25,000+140,000)=$255,000

This test has been met by all of the reportable segments, which are business lines 1, 2, and 4. However, management can override these tests and report a business line as a reportable segment if they consider the segmented information to be useful to the stakeholders.

23.7

Interim reporting has several challenges:

- Changes in accounting principles: If this change were to occur in the second or third quarter, how should this affect the first quarter interim financial statements? The general consensus is that, even if the change of a particular accounting policy, such as a depreciation method, is prospective, the annual change should be prorated to each of the interim accounting periods so as not to over/under state any specific quarter. This would lessen any tendency of management to manipulate accounting policies within a specific quarter to influence bonuses or operational results targets. Thus, even though the change in policy is applied prospectively for the fiscal year, if interim statements are prepared, the change in policy would be applied retroactively, but proportionally, between each quarterly period to smooth the results over each quarter for that fiscal year.
- Cyclical and seasonal swings experienced by businesses within a fiscal year: Revenue can be concentrated over a limited number of months, while expenses may be incurred monthly. If IFRS guidelines are followed, the principles of revenue recognition and matching (of expenses incurred to earn those revenues) will continue to be accrued and recorded within each of the interim periods and the same tests used for annual financial statements would be applied to the interim reports.

- Allocations for income taxes and earnings per share: The treatment requires each interim period to be independent of each other and for interim allocations to be determined by applying all the same tests as those used for the annual reports.
- Auditors: While some stakeholders continue to push for an examination of the interim reports in order to provide assurance, auditors are reluctant to express an opinion on interim financial statements. As such, there will always be a trade-off between the need for assurance through an audit opinion and the need to produce the interim report on a timely basis.

ASPE does not contain any guidance for reporting interim reporting or segmented information. The issues would be the same for companies following either IFRS or ASPE, except that IFRS requires more disclosures.

23.8

a. Percentage (common-size) vertical analysis is as follows:

	2021	2020	2019
Net sales	100%	100%	100%
Cost of goods sold (COGS)	65%	60%	63%
Gross profit	35%	40%	37%
Selling and administrative expenses	20%	21%	22%
Income from continuing operations before income taxes	15%	19%	15%

The company's income before taxes declines in 2021 due to higher cost of goods sold (COGS) as a percentage of net sales, as compared with 2020. Moreover, the COGS in 2020 decreased by 3% from the previous year followed by a more than offsetting increase back to greater than the 2019 percentage levels. Was there a write-off of inventory in 2021 that would cause COGS to sharply increase from the previous year? More investigation would be needed to determine the reason for the difference. Selling and administration continues to slowly decrease over the three-year period as a percentage of sales, suggesting that management may be taking steps to make operations more efficient. Separating the selling from the administration expenses would be a worthwhile drill-down into the numbers.

Horizontal (trend) analysis is as follows:

	2021	2020	2019
Net sales	119%	107%	100%
Cost of goods sold (COGS)	123%	102%	100%
Gross profit	113%	116%	100%
Selling and administrative expenses	109%	104%	100%
Income from continuing operations before income taxes	118%	132%	100%

This trend-line analysis highlights the jump in COGS between 2020 and 2021. Note how sales increased by 19% from 2019 while COGS increased by 23%. This divergent trend between these two accounts should be investigated further. Even though selling and administration expenses were shown to be dropping as a percentage of sales, these expenses actually increased over the two years. Further investigation of the increasing selling and administration costs might be necessary.

As can be seen from analysis of the two schedules above, different areas of operations may become targeted for further investigation depending on which schedule is examined. An area may not look particularly troublesome until another type of analyses is considered.

b. Limitations of these types of analyses include:

- Vertical/Common Size Analysis: The downside to this type of analysis is the need to avoid management bias, or the temptation to use various accounting policies to favourably change a gross margin for personal reasons such as bonuses or positive performance evaluations. For example, if a gross margin decreased from 40% to 35% over a two-year period, the decline could be a realistic reflection of operations, or it could be the result of a change in estimates or of accounting policy. For this reason, any change in the ratios should always be further investigated.
- Horizontal/Trend Analysis: If the company's operations are relatively stable each year, this analysis can be useful. However, changes in these ratios could also be due to a change in pricing policy and not due to actual transactions and economic events. Again, more investigation is necessary to determine if the increase is due to true economic events or changes in policy made by management.

It is important to remember that ratios are only as good as the data presented in the financial statements. For example, if quality of earnings is high, then ratio analysis can be useful, otherwise it may do more harm than good. Also, it is important to focus on a few key ratios for each category to avoid the risk of information overload; it is those few key ratios that should be investigated and tracked over time. It is also important to understand that industry benchmarks make no assurances about how a company compares to its competitors since the basis for the industry ratio may be different than the basis used for the company. As such, ratios provide good indicators for further investigation, but they are not the end-point of an evaluation.

23.9

a. Liquidity Ratio: Measures the enterprise's short-term ability to pay its maturing obligation:

Current ratio: $499,500 \div 393,200 = 1.27$

If a guideline of 2:1 is the norm for this industry, then this company's ratio is low. This company can meet its current debts provided that accounts receivable are collectible and inventory sellable. Too low could be an issue while too high could also be an issue and indicate an inefficient use of funds.

Quick ratio: $499,500 - 210,500 - 15,900 \div 393,200 = 0.69$

If a guideline of 1:1 is the norm for this industry, this company's ratio is low. More information is needed, such as historical trends or industry standards. Nearly 50% of the current assets are made up of inventory. Therefore, inventory risks such as obsolescence, theft, or competitors' products could affect this company.

b. Activity Ratio: Measures how effectively the enterprise is using its assets. Activity ratios also measure the liquidity of certain assets such as inventory and receivables (i.e., how fast the asset's value is realized by the company).

Receivables turnover: $550,000 \div 213,100 = 2.58$ times per year or every $365 \div 2.58 = 141$ days

If a guideline of 30 to 60 days is the norm for this industry, receivables are being collected too slowly and too much cash is being tied up in receivables. Comparison to industry standards or historical trends would be useful.

Inventory Turnover: $385,000 \div 210,500 = 1.83$ times per year or every $365 \div 1.83 = 199$ days

An inventory turnover of less than three times per year appears to be very low. Too low may mean that too much cash is being tied up in inventory or there is too much obsolete inventory that cannot be sold. Too high can signal that inventory shortages may be resulting in lost sales. More information about the industry is needed.

Asset Turnover: $550,000 \div 1,369,500 = 0.40$

This ratio appears low. Too low means that this company uses its assets less efficiently to generate sales. Industry standards and historical trends would be useful.

23.10

Liquidity:

Current ratio=Current assetsCurrent liabilities=1,296,500390,700=3.32 times

Current ratio describes the company's ability to pay current liabilities as they come due.

This company's comparable current ratio is favourable.

Activity:

Days' sales in inventory	=Ending inventoryCOGS×365
	=55,000500,000×365
	=40 days

Days' sales in inventory measures the liquidity of the company's inventory. This is the number of days that it takes for the inventory to be converted to cash. The company's days' sales in inventory are unfavourable when compared to the industry statistics.

Total asset turnover=Net sales (or revenues)Average total assets=1,100,0001,977,500=0.56 times

Total asset turnover describes the ability of a company to use its assets to generate sales—the higher the better.

This company's comparable asset turnover is unfavourable.

Accounts payable turnover	=COGSAverage accounts payable
	=500,000265,200
	=1.89 times or every 194 days

Accounts payable turnover describes how much time it takes for a company to meet its obligations to its suppliers. This company's accounts payable turnover is lower than the industry average which means they are preserving their cash longer by comparison.

Solvency/coverage:

Debt ratio=Total liabilitiesTotal assets=484,5001,977,500=24.50%

Debt ratio measure how much of the assets are financed by debt versus equity. The greater the debt ratio, the greater the risk associated with making interest and principal payments. This company's comparable debt ratio is favourable.

Profitability:

Profit margin=Net incomeNet sales (or revenues)=544,9601,100,000=49.54%

Measures the company's ability to generate a profit from sales. This company's profit margin is favourable.

Book value per common share	=Equity applicable to common sharesNumber of common shares outstanding
	=1,399,40015,900
	=$88.01 per share

When compared to its market price of $97, it appears that the market considers the earning power of its assets to be greater than the value of the company on its books. It follows that most profitable companies try to sustain a market value higher than the book value. Conversely, if the book value was higher than the market price, then the market considers that the company is worth less than the value on its books.

Book value per preferred share	=Equity applicable to preferred sharesNumber of preferred shares outstanding
	=93,6003,744
	=$25.00 per share

There are no dividends in arrears, so this ratio reflects the average paid-in amount, or the call price if they are callable.

23.11

a. i. Acid-test ratio for 2020:

75+310129+100=1.68:1

This is a liquidity ratio that is a more rigorous test of a company's ability to pay its short-term debts as they come due. Inventory and prepaid expenses are excluded from this ratio and only the most liquid assets are included.

ii. The company's acid-test ratio is favourable relative to the industry average.

b. i. Accounts receivable turnover for 2020.

1,500÷(310+180)2=6.12 times/year or every 59.64 days (365÷6.12)

ii. The company's accounts receivable turnover is unfavourable relative to the industry average because the company's turnover rate of 6.12 is lower than the industry rate of 8.2 times. In days, the company's rate is every 59.6 days (365÷6.12) as compared to industry's every 44.5 days (365÷8.2) which represents the average number of days to collect accounts receivable.

c. Using the return on assets ratio:

223÷(2,189+1,050)*2×100=13.77%

* (310+75+1,360+250−206+400)=2,189;
(180+42+500+210−282+400)=1,050

13.77% is higher (more favourable) than the industry average

23.12

The balance sheet was strengthened from June 30, 2019 to June 30, 2020:

Debt financing (percentage of liabilities to total assets) decreased significantly, from 62.5% at June 30, 2019 ($75,000÷$120,000)*×100 to 5.91% at June 30, 2020 ($10,850÷$183,550)×100

* (1,800+7,000+950+1,100)=10,850 total liabilities
(29,000−3,800−1,400+10,000+15,000+17,000+14,000+750+75,000+25,000+2,500+500)=183,550 total assets

Equity financing (percentage of equity to total assets) increased from 37.5% at June 30, 2019 ($45,000÷$120,000×100) to 94.09% at June 30, 2020 ($172,700÷$183,550)*×100

* (49,325+40,000+50,000−46,000+79,375 net income**)=172,700
** Net income (2,000+314,000−22,000−20,000−123,900−4,875−5,000−1,200−17,900−41,750)=79,375

23.13

Calculations:

	2020	**2019**
Current ratio	(60+80+240)÷180=2.11	(10+70+50)÷75=1.73
Acid-test ratio	(60+80)÷180=0.78	(10+70)÷75=1.07

Yeo Company's current ratio improved significantly from 1.73 in 2019 to 2.11 in 2020. This means that in 2020, Yeo Company had $2.11 of current assets available to pay each $1.00 of short-term debt. However, the acid-test is a more rigorous measure of short-term debt-paying ability because it excludes less liquid current assets such as Yeo Company's merchandise inventory. Merchandise inventory is excluded because it is not available to pay short-term debt until it has been sold; there is also the risk that it might not be sold, due to obsolescence, spoilage, or poor sales. The acid-test for 2019 showed that there was $1.07 of quick current assets, or liquid current assets, available to pay each $1.00 of short-term obligations. The acid-test decreased in 2020 indicating that there was $0.78 of quick current assets available to pay each $1.00 of current liabilities, highlighting a potential cash flow problem.

When there are insufficient current assets available to pay current liabilities, liquidity, or cash flow, is a concern, hence the relationship between short-term debt-paying ability and cash flow.

23.14

Kevnar Corporation has strengthened its balance sheet because its debt ratio decreased from 2019 to 2020. Strengthening the balance sheet refers to how assets are financed—through debt or equity. The greater the equity financing, the stronger the balance sheet. This is because there is risk associated with debt financing (i.e., the risk of being unable to meet interest and/or principal payments). Therefore, although Kevnar Corporation has a greater percentage of its assets financed through debt than does Dilly Inc., it has increased equity financing which indicates a strengthening of the balance sheet because of the decrease in risk associated with debt financing.

Financing through equity also has its disadvantages. Having more equity-based financing can mean a dilution of ownership that results from the issuance of more shares to outside investors. Having more shareholders also means that there will be additional claims to the equity in the business. Conversely, debt does not dilute the ownership of a business since a creditor is only entitled to the repayment of the agreed-upon principal plus interest, so there is no direct claim on future profits of the business. Moreover, if the company is successful, the existing owners will reap a larger portion of the rewards than they would have if they had issued more shares to outside investors in order to finance the growth. Additionally, interest on debt can reduce net income and, hence, reduce income taxes, making equity financing potentially a more costly source of financing than debt. Because of the requirement to comply with federal laws and securities legislation, financing through issuance of shares is usually a more complicated and lengthy process than acquiring funds from debt sources. This certainly slows the financing process down, but it can also add to the costs of equity based financing.

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Solutions

Chapter 12 Exercises

EXERCISE 12–1

a. CL
b. CL
c. CL
d. CL
e. Both
f. Not recorded
g. CL and possibly NCL if goods/services provided more than one year in the future
h. NCL, unless decommissioning will happen within one year, then CL
i. Not recorded unless lawsuit is settled/resolved
j. CL
k. CL
l. Both
m. CL or NCL, depending on term of note
n. CL
o. Both, depending on expiry date of points

EXERCISE 12–2

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accounts payable		8,000	
	Note payable			8,000

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Interest expense		171.62	
	Interest payable			171.62
	($8,000 × 9% × 87 ÷ 365)			

c.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Note payable		8,000	
	Interest expense		65.10	
	Interest payable		171.62	
	Cash			8,236.72
	For interest expense: (8,000 × 9% × 33 ÷ 365)			

EXERCISE 12–3

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Inventory (incl. prov. tax)		10,400	
	Federal sales tax recoverable		600	
	Accounts payable			11,000

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Equipment (incl. prov. tax)		3,120	
	Federal sales tax recoverable		180	
	Cash			3,300

c.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accounts receivable		17,600	
	Federal sales tax payable			960
	Provincial sales tax payable			640
	Sales revenue			16,000

d.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash		5,500	
	Federal sales tax payable			300
	Provincial sales tax payable			200
	Sales revenue			5,000

e.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Federal sales tax payable		1,260	
	Federal sales tax recoverable			780
	Cash			480
	For federal sales tax payable: (960 + 300)			
	For federal sales tax recoverable: (600 + 180)			
	Provincial sales tax payable		840	
	Cash			840
	For provincial sales tax payable: (640 + 200)			

EXERCISE 12–4

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Wage expense		73,000	
	Government pension expense		1,200	
	Government pension payable			2,200
	Tax withholding payable			19,000
	Employee receivable			50,000
	Cash			3,000

Note: The cash represents the total of the individual payroll cheques that would be written to each employee, less the amount of the advances paid.

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Wage expense		36,500	
	Government pension expense		600	
	Accrued payroll			37,100

Note:

Wage expense $= 73{,}000 \times 5 \div 10 = 36{,}500$ (based on 5 working days per week) Government pension expense $= 1{,}200 \times 5 \div 10 = 600$

In practice, the calculation of the government pension expense would be more complicated than this. However, the company would likely omit this part of the calculation, as it is not material to the accrual.

EXERCISE 12–5

a.

	January 2021	Factor	Revenue
One-year subscription	17 × $120	12/12	$2,040
Two-year subscription	24 × $200	12/24	$2,400
Three-year subscription	30 × $280	12/36	$2,800

	July 2021	Factor	Revenue
One-year subscription	18 × $120	6/12	$1,080
Two-year subscription	20 × $200	6/24	$1,000
Three-year subscription	22 × $280	6/36	$1,027

	December 2021	Factor	Revenue
One-year subscription	12 × $120	1/12	$120
Two-year subscription	30 × $200	1/24	$250
Three-year subscription	36 × $280	1/36	$280

Total of all revenue amounts recognized = $10,997

Note: This calculation assumes that services are provided in equal proportions throughout the contract term. If a different assumption is more accurate, then the calculations would be adjusted to reflect the expected pattern of service.

b.

c. Total contract payments received:

$(17 + 18 + 12) \times \$120) + ((24 + 20 + 30) \times \$200) + ((30 + 22 + 36) \times \$280$	=	$	45,080
Less revenue recognized in 2021		$	10,997
Total deferred revenue at December 31, 2021		$	34,083

This will be reported as:

Current liability		$	18,013
Non-current liability		$	16,070

Calculation:

	January 2021	Factor	Current Liability
One-year subscription	17 × $120	0/12	$0
Two-year subscription	24 × $200	12/24	$2,400
Three-year subscription	30 × $280	12/36	$2,800

	July 2021	Factor	Current Liability
One-year subscription	18 × $120	6/12	$1,080
Two-year subscription	20 × $200	12/24	$2,000
Three-year subscription	22 × $280	12/36	$2,053

	December 2021	Factor	Current Liability
One-year subscription	12 × $120	11/12	$1,320
Two-year subscription	30 × $200	12/24	$3,000
Three-year subscription	36 × $280	12/36	$3,360

Total current liability = $18,013

Total non-current liability = $(34,083 - 18,013) = \$16,070$

EXERCISE 12–6

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1 2021	Cash		21,000,000	
	Sales revenue – yachts			20,930,000
	Unearned revenue – warranty			70,000
Dec 31 2021	Unearned revenue – warranty		23,333	
	Sales revenue – warranty			23,333
	($70,000 ÷ 3)			
Dec 31 2021	Warranty expense		12,000	
	Cash			12,000
Dec 31 2022	Unearned revenue – warranty		23,333	
	Sales revenue – warranty			23,333
	($70,000 ÷ 3)			
Dec 31 2022	Warranty expense		30,000	
	Cash			30,000
Dec 31 2023	Unearned revenue – warranty		23,333	
	Sales revenue – warranty			23,333
	($70,000 ÷ 3)			
Dec 31 2023	Warranty expense		35,000	
	Cash			35,000

b. Unearned revenue at December 31, 2022 = (70,000 − 23,333 − 23,333) = $23,334

EXERCISE 12–7

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Wage expense		24,720	
	Accrued vacation pay			24,720
	(10 employees × $160 × 15 days × 103%)			
	Sick pay expense		15,360	
	Wage expense			15,360
	(96 days × $160 = $15,360)			

Note: This is simply a reclassification, as the employee would have been paid his or her regular pay on a sick day.

b. Vacation pay liability at December 31 = $24,720, per part (a)

Sick pay liability at December 31 = $0 (these benefits do not accumulate)

EXERCISE 12–8

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		97,200	
	Sales revenue			92,080
	Unearned revenue – loyalty card			5,120

Total sales generated = 36,000 cups × $2.70 = $97,200

Fair value per cup = $97,200 ÷ (36,000 + 2,000) = $2.56 per cup

(Denominator is total cups sold plus expected redemptions.)

Unearned revenue = 2,000 expected redemptions × $2.56 = $5,120 (rounded)

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Unearned revenue – loyalty card		2,560	
	Revenue – loyalty card			2,560

This records the redemption of the first 1,000 free cups.

b. Liability at the end of 2020 will be the unearned revenue balance: = $5,120 − $2,560 = $2,560

This will be reported as a current liability, as all loyalty cards expire within one year.

EXERCISE 12–9

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Factory		1,232,646	
	Obligation for site restoration			1,232,646

Present value of legal and constructive obligation	= (FV 3,500,000, n 10, i 11%)
	= $1,232,646

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Year 1	Depreciation expense		123,265	
	Accumulated depreciation – factory			123,265
	(1,232,646 ÷ 10 years)			
Year 1	Interest expense		135,591	
	Obligation for site restoration			135,591
	(1,232,646 × 11%)			
Year 2	Depreciation expense		123,265	
	Accumulated depreciation – factory			123,265
Year 2	Interest expense		150,506	
	Obligation for site restoration			150,506
	((1,232,646 + 135,591) × 11%)			

EXERCISE 12–10

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a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
2021	Cash		33,000,000	
	Sales revenue			33,000,000
	(3,000 machines × $11,000 each)			
2021	Warranty expense		1,800,000	
	Provision for warranty liability			1,800,000
	(3,000 machines × $600 per machine)			
2021	Provision for warranty liability		975,000	
	Cash, inventory, etc.			975,000
2022	Provision for warranty liability		345,000	
	Cash, inventory, etc.			345,000
2023	Provision for warranty liability		480,000	
	Cash, inventory, etc.			425,000
	Recovery of warranty costs			55,000

Note: This journal entry assumes that the three-year warranty period for all machines sold in 2021 has now expired. The balance of the provision must be reduced to zero once the warranty period ends. If there were still machines with remaining warranty rights, the balance of the provision would be carried forward to 2024 until the warranty period expired.

b. 2021 warranty liability = 1,800,000 − 975,000 = $825,000

2023 warranty liability = 480,000 − 480,000 = $0

(assuming all warranty periods have expired by the end of 2023)

Note: In 2021, the liability would be separated into current and non-current portions, based on management's best estimate of the pattern of future warranty repairs. In 2022, the liability would be reported only as current.

EXERCISE 12–11

a. If contract is completed:

Sales revenue = 10,000 grams × $45 per gram	=	$	450,000
Cost of product = 10,000 grams × $50 per gram	=		500,000
Loss on contract		$	(50,000)

If contract is cancelled and sales still made:

Sales revenue (as above)		$	450,000
Cost of product = 10,000 grams × $31 per gram	=		310,000
Cancellation penalty			75,000
Profit on contract		$	65,000

If contract is cancelled and no sales made, the $75,000 penalty still applies.

Because the option of cancelling the contract and continuing to make sales results in a profit, this is not an onerous contract. No journal entry is required.

b.

If contract is completed, loss is as calculated in part (a)	$	(50,000)
If contract is cancelled and sales made:		
Sales revenue (as above)	$	450,000
Cost of product = 10,000 grams × $31 per gram =		310,000
Cancellation penalty		150,000
Loss on contract	$	(10,000)
If contract is cancelled and no sales, penalty applies	$	(150,000)

In this case, all options result in a loss, so this is an onerous contract. A journal entry is required to recognize the least costly option available:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Loss on onerous contract		10,000	
	Provision for onerous contract			10,000

EXERCISE 12–12

a.

Ratio	2021	2020
Current	1.14	1.13
Quick	0.74	0.79
Days' sales uncollected	66 days	58 days
Days' payable outstanding	140 days	120 days

Current:		2021		323,000 ÷ 284,000 = 1.14
		2020		294,000 ÷ 261,000 = 1.13
Quick:		2021		(323,000 − 113,000) ÷ 284,000 = 0.74
		2020		(294,000 − 88,000) ÷ 261,000 = 0.79

Days' sales uncollected:		2021		(175,000 ÷ 975,000) × 365 = 66 days
		2020		(150,000 ÷ 950,000) × 365 = 58 days
Days' payable outstanding:		2021		(229,000 ÷ 595,000) × 365 = 140 days
		2020		(201,000 ÷ 610,000) × 365 = 120 days

b. The company's cash decreased from the previous year, but this does not reveal much. The ratio analysis, however, does reveal some worrying trends in liquidity. The current ratio has been maintained at almost exactly the same level as the previous year, but it is only slightly above 1. This may indicate that the company will have difficulty meeting its short-term obligations when they come due. The quick ratio further emphasizes this point. The quick ratio declined from the previous year and is now less than 1. This means the company would not be able to fully pay its current obligations if they were to become immediately due. This could cause problems with trade creditors and the company's bank, which could lead to further actions taken by those parties that could negatively affect the business.

The collection period for receivables has also slowed by 8 days from the previous year, which indicates that it is taking longer to collect from customers. This trend will further exacerbate any cash flow problems the company has in meeting its current payment obligations. The actual collection period of 66 days may be reasonable, but the company's credit terms and general industry conditions would need to be examined to see if this is in line with what is expected for this type of business.

The payment period for the company's suppliers shows the most alarming trend. The company is now taking 140 days to pay its payable, an increase of 20 days over the previous year. This could indicate serious cash flow problems, and may cause loss of credit with suppliers which could, ultimately, result in an inability to obtain a supply of inventory. The standard credit terms offered by suppliers will need to be examined to put this calculation into context. As well, the supplier list should be examined to see if there are any related parties involved that are granting more favourable credit terms than would be normally expected.

Overall, the company appears to have some problems in managing its working capital, which could lead to more serious liquidity problems in the future. The company seems to be using trade creditors as its main source of short term financing, which may cause a degrading of the company's credit and reputation with those suppliers. However, more information is required to fully understand these trends.

Chapter 13 Exercises

EXERCISE 13–1

a. Financing is generally obtained through three sources: borrowing the funds, issuing shares, and using internally generated funds. Using borrowed money to leverage, where the interest rate from the borrowing is less than the return from generating the profit, can maximize the returns paid to shareholders, and the related interest paid is tax deductible. However, borrowed funds must be repaid, which affects the company's liquidity and solvency risk. Issuing shares, on the other hand, does not impact liquidity and solvency risk, but it may result in the dilution of ownership and associated lower market value and less dividends per share. Using internally generated funds may be appropriate if the company has excess cash profits and has determined that this project is the best use for these funds.

b. Based on the information provided, borrowing is the most suitable source of financing for Evergreen Ltd. With a debt to total assets ratio of 56%, Evergreen Ltd. is underleveraged as compared with competitors operating in the same industry, averaging 60%. As a result, Evergreen Ltd. will likely be able to finance the expansion by borrowing and still maintain an acceptable level of liquidity and solvency risk lower than, or equal to, the 60% industry standard benchmark. If Evergreen Ltd. has significant amounts of property, plant, and equipment, it may be able to obtain the loan and secure it with its existing tangible assets. However, more information would be required before making a concrete recommendation.

EXERCISE 13–2

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		400,000	
	Note payable			400,000

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest expense		20,000	
	Cash			20,000
	($400,000 × 5%)			

c. The market interest rate at the time of signing the note would have been 5% because the note was issued at face value, meaning that the 5% stated rate was the same as the market rate at that time.

d. The yield is the same as the market or effective rate, which is 5% in this case. Had the market rate been greater or lower than the face rate, the yield would be equal to the market rate.

e. The current portion of the long-term debt is the principal portion of the debt that will be paid within one year of the reporting (balance sheet) date. In this case, as no principal portions are due until the note's maturity on January 1, 2024, no amount will be reported as a current portion of long-term debt as at the December 31, 2021, reporting date. However, when the balance sheet at December 31, 2023, is prepared, the long-term note payable of $400,000 will be classified as a current liability because it will be due within one year of the December 31, 2023, reporting date.

EXERCISE 13–3

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		535,531	
	Bonds payable			535,531
	PV = (20,000 PMT, 3.5%, 20 N, 500,000)			

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jun 30	Interest expense		18,744	
	Bonds payable		1,256	
	Cash			20,000
	For Interest expense: (535,531 × 3.5%)			
	For Bonds payable: (20,000 − 18,744)			
	For Cash: (500,000 × 8% × 50%)			

c.

Face value of bond		$	500,000
Present value of bond			535,531
Premium		$	35,531

EXERCISE 13–4

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		95,260	
	Note payable			95,260
	PV = (8 I/Y, 3 N, 120,000 FV)			

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest expense		7,621	
	Note payable			7,621
	(95,260 × 0.08)			

c. If the note face value is $120,000, the duration is three years, and the PV is equal to $95,260, the interest rate would be:

Interest rate = (+/- 95,260 PV, 3 N, 120,000 FV) = 7.999 (or 8%)

d.

Date		**Interest @ 8%**		**Balance**
Jan 1, 2021				95,260
Dec 31, 2021		7,621		102,881
Dec 31, 2022		8,230		111,111
Dec 31, 2023		8,889		120,000

EXERCISE 13–5

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Equipment		74,326	
	Note payable			74,326
	PV = (2,400 PMT, 4 N, 5 I/Y, 80,000 FV)			

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest expense		3,716	
	Note payable			1316
	Cash			2,400
	For Interest expense: (74,326 × 0.05)			
	For Cash: (80,000 × 0.03)			

c.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest expense		3,819	
	Note payable			1,419
	Cash			2,400
	For Note payable: (80,000 − 74,326) ÷ 4			

EXERCISE 13–6

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Cash		$200,000	
	Note payable			176,771
	Unearned revenue			23,229
	For Note payable: PV = (2.5 I/Y, 5 N, 200,000 FV)			

EXERCISE 13–7

PMT = (+/- 25,000 PV, 3 N, 8 I/Y) = 9,700.84 (or 9,701)

Payments each December 31 would be $9,701.

EXERCISE 13–8

1.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		324,500	
	Bond payable			324,500
	(350,000 − 25,500)			

2.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31	Interest expense		19,200	
	Bond payable			1,700
	Cash			17,500
	For Bond payable: (25,500 ÷ 15)			
	For Cash: (350,000 × 5%)			

EXERCISE 13–9

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		196,000	
	Bonds payable			196,000
	(200,000 × 0.98)			

To calculate the market rate (yield) at the time of the issuance to two decimal places:

I/Y = (+/- 196,000 PV, 7,000 PMT, 10 N, 200,000 FV) = 3.74%

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jul 1	Interest expense		7,330	
	Bond payable			330
	Cash			7,000
	For Interest expense: (196,000 × 0.0374)			
	For Cash: (200,000 × 0.07 × 6 ÷ 12)			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Interest expense		7,343	
	Bond payable			343
	Interest payable			7,000
	For Interest expense: ((196,000 + 330) × 0.0374)			

b.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	7,000
Long-term liabilities:			
Long-term bonds payable, 7%, due January 1, 2026		$	196,673

Check Figures:

Date	Payment	Interest @ 3.74%	Amortization	Balance	
Jan 1, 2021				196,000.00	
Jul 1, 2021	7,000.00	7,330.40	330.40	196,330.40	
Jan 1, 2022	7,000.00	7,342.76	342.76	196,673.16	← Balance owing, Dec 31, 2021
Jul 1, 2022	7,000.00	7,355.58	355.58	197,028.73	
Jan 1, 2023	7,000.00	7,368.87	368.87	197,397.61	
Jul 1, 2023	7,000.00	7,382.67	382.67	197,780.28	
Jan 1, 2024	7,000.00	7,396.98	396.98	198,177.26	
Jul 1, 2024	7,000.00	7,411.83	411.83	198,589.09	
Jan 1, 2025	7,000.00	7,427.23	427.23	199,016.32	
Jul 1, 2025	7,000.00	7,443.21	443.21	199,459.53	
Jan 1, 2026	7,000.00	7,540.47*	540.47	200,000.00	
		* Rounded			

Note: There is no current portion of long-term debt in this case because there is no pay-down of the principal. Looking at the payment schedule, the balance owing is increasing due to the amortization of the discount.

c.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		196,000	
	Bonds payable			196,000
	(200,000 × 0.98)			
Jul 1	Interest expense		7,400	
	Bond payable			400
	Cash			7,000
	For Bond payable: (200,000 − 196,000) ÷ 10			
	For Cash: (200,000 × 0.07 × 6 ÷ 12)			
Dec 31	Interest expense		7,400	
	Bond payable			400
	Interest payable			7,000

d.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	7,000
Long-term liabilities:			
Long-term bonds payable, 7%, due January 1, 2026		$	196,800

Check Figures:

Date	Payment	Interest @ 3.74%	Amortization	Balance	
Jan 1, 2021				196,000	
Jul 1, 2021	7,000.00	7,400	400	196,400	
Jan 1, 2022	7,000.00	7,400	400	196,800	← Balance owing, Dec 31, 2021
Jul 1, 2022	7,000.00	7,400	400	197,200	
Jan 1, 2023	7,000.00	7,400	400	197,600	
Jul 1, 2023	7,000.00	7,400	400	198,000	
Jan 1, 2024	7,000.00	7,400	400	198,400	
Jul 1, 2024	7,000.00	7,400	400	198,800	
Jan 1, 2025	7,000.00	7,400	400	199,200	
Jul 1, 2025	7,000.00	7,400	400	199,600	
Jan 1, 2026	7,000.00	7,400	400	200,000	

e. The total cost of borrowing will be the same for both methods, though the pattern of recognition as illustrated in the two interest schedules above is different throughout the life of the bonds.

EXERCISE 13–10

a. Effective interest rate:

$800,000 × 0.99 = $792,000 − 7,000 = $785,000 bond value

$800,000 × 5% = 40,000 ÷ 2 = 20,000 semi-annual interest payment

I/Y = (+/- 785,000 PV, 20,000 PMT, 40 N, 800,000 FV) = 2.5756% every 6 months

Date	Payment	Interest @ 2.5756%	Amortization	Balance	
May 1, 2021				785,000*	
Jul 1, 2021	20,000	20,218	218	785,218	
Jan 1, 2022	20,000	20,224	224	785,442	← Bond payable balance, Dec 31, 2021
Jul 1, 2022	20,000	20,230	230	785,672	
Jan 1, 2023	20,000	20,236	236	785,908	
Jul 1, 2023	20,000	20,242	242	786,150	

* Fee is capitalized and will be amortized over the life of the bond. See full amortization schedule above.

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
May 1, 2021	Cash		798,333	
	Bond payable			785,000
	Interest expense			13,333
	For Cash: (800,000 × 0.99) + (800,000 × 0.05 × 4 ÷ 12) − 7,000			
	For Bond payable: (800,000 × 0.99) − 7,000			
Jul 1, 2021	Interest expense		20,218	
	Bond payable			218
	Cash			20,000
	For Interest expense: (785,000 × 2.5756%)			
Dec 31, 2021	Interest expense		20,224	
	Bond payable			224
	Interest payable			20,000
	For Interest expense: ((785,000 + 218) × 2.5756%)			
	For Interest payable: (800,000×0.05×6÷12)			

c.

Hobart Services Ltd.			
Statement of Financial Position			
As at December 31, 2021			
Current liabilities:			
Interest payable		$	20,000
Long-term liabilities:			
Long-term bonds payable, 5%, due January 1, 2041		$	785,442

d. When a note or bond is issued, the brokerage fees and any other directly attributable costs should be included in the fair value and amortized over the life of the debt. As a result, these types of additional costs will affect both the amount of the bond discount (or premium) amortized and the interest expense over the term of the bond. Exceptions to this are where the debt will subsequently be measured at fair value under the fair value option. In this case, the transaction costs would be expensed at the time of issuance and not included in the initial fair value measurement. [*CPA Handbook*, Accounting, Part II, Section 3856.07 and Part I, IFRS 9].

EXERCISE 13–11

When a note or bond is issued, the brokerage fees and any other directly attributable costs should be included in the fair value and amortized over the life of the debt. As a result, these types of additional costs will affect both the amount of the bond discount or premium amortized and the interest expense over the term of the bond. Exceptions to this are where the debt will subsequently be measured at fair value under the fair value option. In this case, the transaction costs would be expensed at the time of issuance and not included in the initial fair value measurement. (*CPA Handbook*, Accounting, Part II, Section 3856.07 and Part I, IFRS 9)

a. **ASPE**

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Interest expense		40,000	
	Cash			40,000
	($1M × 4%)			
Dec 31, 2022	Bonds payable		50,000	
	Unrealized gain			50,000
	($1M − $950,000)			

b. **IFRS (IFRS 9)**

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Interest expense		40,000	
	Cash			40,000
	($1M × 4%)			
Dec 31, 2022	Bonds payable		50,000	
	Unrealized gain			50,000
	($1M − $950,000)			

c. The risk for Tribecca increased in this case, so the fair value of its debt owing decreased. The offsetting entry to the decrease (debit) to bonds payable is an unrealized gain. An entry booking a gain seems like an illogical outcome, given that the company is now worse off than before due to higher risk.

EXERCISE 13–12

General Journal

Date	Account/Explanation	PR	Debit	Credit
July 31	Bond payable		289,850	
	Loss on bond retirement		7,150	
	Cash			297,000
	For Bond payable: (300,000 − 10,150)			
	For Cash: (300,000 × 0.99)			

EXERCISE 13–13

a. Under IFRS, this debt is to be reported as a current liability on the December 31, 2021, financial statements because it was not refinanced by the reporting date. The only exception is if the refinancing was done under an agreement that existed at December 31, 2021, and the decision about the refinancing was solely up to management's discretion.

b. Under ASPE, this debt can be reported as a long-term liability because it has been refinanced on a long-term basis before the financial statements are completed. In this case, the entity's financial statements are not yet finalized, so ASPE would permit the debt to be included with long-term liabilities.

EXERCISE 13–14

Settlement or modification:

Old debt: $25,000 (amount due):

New annual interest payment: $18,000 × 6% = 1,080

New debt (PV using the old rate): PV (1,080 PMT, 8 I/Y, 3 N, 18,000 FV) = 17,072

The new debt is more than 10% difference of the old debt's value, so the renegotiation would be considered a settlement and not a modification in terms. A settlement requires the old debt to be removed from the records and the present value amount of the note payable with the new terms be recorded.

The PV of the new note payable at the current market rate would be:

PV (1080 PMT, 7 I/Y, 3 N, 18,000 FV) = 17,527.62

The entries would be:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Notes payable		25,000	
	Gain on restructuring of debt			7,472
	Note payable			17,528*
	* rounded			
Dec 31, 2022	Interest expense		1,227	
	Note payable			147
	Cash			1,080
	For Interest expense: (17,528 × 0.07)			
	For Cash: (18,000 × 0.06)			
Dec 31, 2023	Interest expense		1,237	
	Note payable			157
	Cash			1,080
	For Interest expense: ((17,528+147) × 0.07)			
Dec 31, 2024	Interest expense		1,248	
	Note payable			168
	Cash			1,080
	For Interest expense ((17,528+147+157) × 0.07)			
Dec 31, 2024	Note payable		18,000	
	Cash			18,000

EXERCISE 13–15

a. Initial fair value amount of the house on January 1, 2021:

PV = (5.75%, 6 N, 800,000 FV)	=	$	572,015
Dec 31, 2021 Interest: (572,015 × 5.75%)	=		32,891
Carrying value of the note, Dec 31, 2021	=	$	604,906

b. The assessed value for the house of $590,000 is only a tax assessment notice for purposes of tax levies and payments. Though it is intended to reflect some sort of value of the house, it may not necessarily be an accurate measure. The more accurate measure in this case would be the present value of the future cash flows of the note, using a known, agreed-upon bank rate. The tax assessment amount of $590,000 can be compared to the present value of $572,015 for consistency and reasonableness. In this case, the amounts are close.

EXERCISE 13–16

a. The purchase price of the equipment should be recorded at the present value of the future cash flows of the instalment note at the imputed interest rate of 7%. This is the best measure of the fair value of the asset because it represents the present value of an agreed series of future cash flows at a known market rate. The listing price represents a tentative amount asked for the equipment and could be above or below the price that is agreed to between both parties.

b. PV = (40,541 PMT, 7 I/Y, 4 N) = 137,321

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1	Equipment		137,321	
	Note payable			137,321
Dec 31	Interest expense		9,612	
	Note payable		30,929	
	Cash			40,541
	For Interest expense: (137,321 × 0.07)			

c. From the perspective of a creditor, an instalment note payment includes both the interest and principal, whereas, for an interest-bearing note, the principal amount is not due until maturity. In other words, the instalment note provides a regular reduction of the principal balance as part of every payment received, reducing the creditor's investment in the debt and freeing up cash to use elsewhere.

EXERCISE 13–17

For Hornblower Corp.:

a. Determine if this is a modification of terms or settlement:

Present value of old debt is $700,000.

Present value of new debt using the historic rate:

PV = (45,500 PMT, 8 I/Y, 2 N, 650,000 FV) = 638,409

This loan is deemed as a modification in terms because the present value of the future cash flows of the new debt using the old rate of $638,409 does not differ by an amount greater than 10% of the present value of the old debt of $700,000.

There will be no entry for Hornblower Corp. due to the restructure of the loan. The old debt remains on the books of Hornblower Corp. at $700,000 and no gain or loss is recognized. A note disclosure regarding the modification of terms is required.

b. The interest expense is based on the future cash flows specified by the new terms with the pre-restructuring carrying amount of the debt of $700,000. The effective interest rate is calculated as follows:

I/Y = (+/- 700,000 PV, 45,500 PMT, 2 N, 650,000 FV) = 2.98% (rounded)

c.

Date		Payment		Interest @ 2.98%		Reduction in Carrying Amount		Balance
Dec 31, 2021								700,000
Dec 31, 2022		45,500		20,860		24,640		675,360
Dec 31, 2023		45,500		20,140*		25,360		650,000
				* Rounded				

d.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Interest expense		20,860	
	Note payable		24,640	
	Cash			45,500

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2024	Note payable		650,000	
	Cash			650,000

For Firstly Trust:

e. Present value of old debt is $700,000.

Present value of new debt using the historic rate:			
PV = (45,500 PMT, 8 I/Y, 2 N, 650,000 FV)	=	$	638,409
Loss		$	61,591

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Bad debt expense		61,591	
	Note receivable			61,591

Note: If Firstly Trust had previously recorded an allowance for doubtful accounts for this note, the debit entry would be to the AFDA account instead of the bad debt expense.

f.

Date		Payment 7%		Interest @ 8%		Reduction in Carrying Amount		Balance
Dec 31, 2021								638,409
Dec 31, 2022		45,500		51,072		5,572		643,981
Dec 31, 2023		45,500		51,519*		6,019		650,000
				* Rounded				

g.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Cash		45,500	
	Note receivable		5,572	
	Interest income			51,072

h.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2024	Cash		650,000	
	Note receivable			650,000

EXERCISE 13–18

a. Determine if the changes should be accounted for as a settlement or as a modification:

Old debt: $150,000

New terms using old rate of 10%:

PV = (11,700 PMT, 10 I/Y, 2 N, 130,000 FV) = 127,744

The present value of the new terms using the old rate of 10% differs by an amount larger than 10% of the present value of the old debt of $150,000. As a result, the renegotiated debt is considered a settlement. The old debt is removed from the books of Ulting Ltd. with a gain/loss being recognized, and the new debt is recorded.

General Journal

Date	Account/Explanation	PR	Debit	Credit
2021	Note payable		150,000	
	Gain on restructuring of debt			10,331
	Note payable			139,669
	PV = (11,700 PMT, 5 I/Y, 2 N, 130,000 FV)			

Interest Schedule:

Payment 9%		Interest @ 5%		Reduction in Carrying Amount		Balance
						139,669
11,700		6,983.45		4,717		134,952
11,700		6,747.62		4,952		130,000

General Journal				
Date	Account/Explanation	PR	Debit	Credit
2022	Interest expense		6,983	
	Note payable		4,717	
	Cash			11,700
	For interest expense: (139,669 × 5%) For Cash: (130,000 × 9%)			
2023	Interest expense		6,748	
	Note payable		4,952	
	Cash			11,700
	For interest expense: (139,669 − 4,717) × 5%			
2024	Note payable		130,000	
	Cash			130,000

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
2021	Allowance for doubtful accounts		22,256	
	Note receivable ($150,000 − $127,744)			22,256

Interest schedule:

Payment		Interest		Adjust to		
9%		@ 10%		Carrying Amount		Balance
						127,744
11,700		12,774		1,074		128,818
11,700		12,882		1,182		130,000

General Journal				
Date	Account/Explanation	PR	Debit	Credit
2022	Cash		11,700	
	Note receivable		1,074	
	Interest income			12,774
2023	Cash		11,700	
	Note receivable		1,182	
	Interest income			12,882
2024	Cash		130,000	
	Note receivable			130,000

Chapter 14 Exercises

EXERCISE 14–1

a. PV = (60,000 PMT, 8 I/Y, 4 N, 1,000,000 FV) = $933,757

b. For IFRS, the residual method is used. This allocates the proceeds first to the liability component and the residual to the equity component. The debt component is measured first as the par value compared to the present value of future cash flows without the convertible feature:

Total proceeds at par		$	1,000,000
PV of the debt component by itself			(933,757)
Incremental value of option		$	66,243

Entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,000,000	
	Bonds payable			933,757
	Contributed surplus – convertible bond options			66,243

c. Under ASPE, the zero-equity method can be used as a policy choice. The equity component would be measured at $0 and the rest to the debt component.

Entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,000,000	
	Bonds payable			1,000,000

Also, the residual method can also be used as explained above. Entry is the same as the entry for IFRS:

Entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,000,000	
	Bonds payable			933,757
	Contributed surplus – convertible bond options			66,243

EXERCISE 14–2

a. Under IFRS, the residual method is applied whereby cash is allocated to the value of the debt instrument first, and the residual is allocated to equity. The debt value is calculated as $576,000 and the warrants are accounted for as equity instruments.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		612,000	
	Bonds payable			576,000
	Contributed surplus – warrants			36,000
	For Cash: (600 × $1,000 × 1.02), for Bonds payable: (600 × $1,000 × 0.96)			

b. Under ASPE one option is to measure the component that is most easily measurable first (usually the debt component) and apply the residual to the other equity component. This is the option under IFRS, and the journal entry will, therefore, be the same:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		612,000	
	Bonds payable			576,000
	Contributed surplus – warrants			36,000
	For Cash: (600 × $1,000 × 1.02)			

Another option is to measure the equity component using the zero-equity method. This means that equity is measured at $0 and the journal entry would be:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		612,000	
	Bonds payable			612,000
	(600 × $1,000 × 1.02)			

c. Allocating the entire issuance to the debt component, and therefore zero to equity, results in a higher debt to total assets ratio as compared with the residual method. A lower debt to total assets ratio indicates better debt paying ability and long-run solvency.

EXERCISE 14–3

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Preferred shares		80,000	
	Contributed surplus – convertible preferred shares options		12,000	
	Common shares			92,000
	For Preferred shares: (8,000 × $10)			

EXERCISE 14–4

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jul 31	Bonds payable*		648,000	
	Contributed surplus – convertible bonds**		90,000	
	Common shares			738,000

* ($1,000,000 par value + $80,000 unamortized premium) × ($600,000 ÷ $1,000,000)

** $150,000 × ($600,000 ÷ $1,000,000)

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jul 31	Bonds payable		400,000	
	Contributed surplus – convertible bonds		60,000	
	Contributed surplus – conversion rights expired			60,000
	Cash			400,000
	For Bonds payable: ($1,000,000 – $600,000 converted), for Contributed surplus: ($150,000 – $90,000)			

Note: The bonds payable carrying value would no longer include any unamortized premium, so the face value or par value would be the carrying value at maturity.

c. Due to common shares market price volatility, there is a risk in waiting to convert the bonds. If the bondholder does not convert when the common share market value is high, no gain will be realized. Conversely, if the common shares market price declines too far, the bondholder risks not being able to sell the bonds, rendering the conversion rights worthless.

EXERCISE 14–5

Residual method, using the fair value of the warrants first and the residual to the bonds:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		5,940,000	
	Bonds payable			5,640,000
	Contributed surplus – stock warrants			300,000
	For Cash: ($6,000,000 × 0.99), for Bonds payable: ($5,940,000 – 300,000), for Contributed surplus: (6,000,000 ÷ 100 × $5)			

Zero-equity method, which measures the equity component at $0:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		5,940,000	
	Bonds payable			5,940,000

EXERCISE 14–6

Residual method:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		1,960,000	
	Bonds payable			1,940,000
	Contributed surplus – convertible bonds			20,000
	For Cash: ($2,000,000 × 0.98), for Bonds payable: ($2,000,000 × 0.97)			

Zero-equity method, which measures the equity component at $0:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		1,960,000	
	Bonds payable			1,960,000

EXERCISE 14–7

Fair value of bonds without warrants is ($400,000 × 0.99) = $396,000

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Aug 1	Cash		408,000	
	Bonds payable			396,000
	Contributed surplus – stock warrants			12,000
	For Cash: ($400,000 × 1.02)			

EXERCISE 14–8

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Nov 1	Loss on redemption of bonds*		300,000	
	Retained earnings**		50,000	
	Bonds payable		5,650,000	
	Contributed surplus – Conversion rights		125,000	
	Common shares			5,775,000
	Cash			350,000

Must be equal

* $5,950,000 – ($6,000,000 – $350,000)

** $350,000 – $300,000

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EXERCISE 14–9

Residual method:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Sept 1, 2020	Cash		4,635,000	
	Bonds payable			4,491,000
	Contributed surplus – stock warrants			54,000
	Interest expense			90,000
	To record the issuance of the bonds. For Cash: ((4,500 × $1,000 × 1.01) + 90,000), for Bonds payable: ((4,500 × $1,000 × 1.01) – 54,000), for Contributed surplus: (4,500 × 2 = 9,000 × $6), for Interest expense: ($4,500,000 × 8% × 3 ÷ 12)			

Zero-equity method:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Sept 1, 2020	Cash		4,635,000	
	Bonds payable			4,545,000
	Interest expense			90,000
	For Cash: ((4,500 × $1,000 × 1.01) + 90,000), for Bonds payable: (4,500 × $1,000 × 1.01), for Interest expense: ($4,500,000 × 8% × 3 ÷ 12)			

EXERCISE 14–10

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,500,000	
	Bonds payable			1,443,138*
	Contributed surplus, conversion rights			56,862

a.

* PV (10%, 5N, 135,000 PMT, 1,500,000 FV)

- IFRS:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		1,462,697*	
	Contributed surplus, conversion rights		56,862	
	Loss on redemption of bonds		10,000	
	Common shares			1,519,559
	Cash			10,000

*	1,443,138 × 10% – 135,000 = 9,314
	1,443,138 + 9,314 = 1,452,452 × 10% – 135,000 = 10,245
	1,452,452 + 10,245 = 1,462,697

Or: Using present values and changing the number of periods from five years to three years: PV (10%, (5 – 2)N, 135,000 PMT, 1,500,000 FV) = $1,462,697

- ASPE:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		1,462,697*	
	Contributed surplus, conversion rights		56,862	
	Loss on redemption of bonds		7,303**	
	Retained earnings		2,697***	
	Common shares			1,519,559
	Cash			10,000

NB: These 2 amounts must be equal to the cash payout amount of $10,000 credit.

* Same calculation as in previous part

** 1,462,697 – 1,470,000 = 7,303

*** 10,000 – 7,303 = 2,697

EXERCISE 14–11

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		1,000,000	
	Bonds payable			922,687*
	Contributed surplus, conversion rights			77,313

a.

* PV(8%, 3N, 50,000 PMT, 1,000,000 FV)

-

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Bond payable		972,222*	
	Loss on redemption of bonds		9,240**	
	Contributed surplus, conversion rights		77,313	
	Retained earnings		41,225	
	Cash			1,100,000

*	922,687 × 8% = 73,815 – 50,000 = 23,815
	922,687 + 23,815 = 946,502 × 8% = 75,720 – 50,000 = 25,720
	946,502 + 25,720 = 972,222

** 972,222 – 981,462 = 9,240

EXERCISE 14–12

a. January 1, 2020: No journal entry necessary since the fair value of the forward contract would be $0.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 15, 2020	Derivatives – forward contract (asset)		25	
	Gain			25

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2020	Derivatives – futures contract (asset)		20	
	Cash			20
Jan 15, 2020	Derivatives – futures contract (asset)		5	
	Gain			5
	($25 – $20)			

EXERCISE 14–13

January 1, 2020: No entry on the grant date.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2020	Compensation expense		100,000	
	Contributed surplus – Stock options			100,000
	(10,000 × $20 × 1 ÷ 2)			
Dec 31, 2021	Compensation expense		100,000	
	Contributed surplus – Stock options			100,000
	(10,000 × $20 × 1 ÷ 2)			
Jan 1, 2023	Cash		238,000	
	Contributed surplus – Stock options		140,000	
	Common shares			378,000
	For Cash: (7,000 × $34), for Contributed surplus: (10,000 shares × $20 × 7,000 ÷ 10,000)			
Dec 31, 2027	Contributed surplus – Stock options		60,000	
	Contributed surplus – Expired stock options			60,000
	((10,000 × $20) – 140,000)			

EXERCISE 14–14

a. January 1, 2021: No entry on the grant date.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Compensation expense		100,000	
	Contributed surplus – Stock options			100,000
	(200,000 × 1 ÷ 2)			
Dec 31, 2022	Compensation expense		100,000	
	Contributed surplus – Stock options			100,000
May 1, 2023	Cash		30,000	
	Contributed surplus – Stock options		75,000	
	Common shares			105,000
	For Cash: (3,000 × $10), for Contributed surplus: ($200,000 × 3,000 ÷ 8,000)			
Dec 31, 2024	Contributed surplus – Stock options		125,000	
	Contributed surplus – Expired stock options			125,000
	($200,000 – $75,000)			

b. The market price of the shares of $15 on May 1, 2023, is not used in recording the exercise of the stock options. From an accounting perspective, the market price is not relevant. It is, nonetheless, relevant to the employees in making their decision to exercise their stock options. The market price is mentioned to indicate that the timing of the exercise is justified, or at least makes sense. Employees exercising a stock option would have paid $10 and could resell the shares immediately for $15, for a gain of $5 per share.

Chapter 15 Exercises

EXERCISE 15–1

Item	Taxable Temporary Difference	Deductible Temporary Difference	Permanent Difference
A property owner collects rent in advance. The amounts are taxed when they are received.		X	
Depreciation claimed for tax purposes exceeds depreciation charged for accounting purposes.	X		
Dividends received from an investment in another company are reported as income, but are not taxable.			X
A provision for future warranty costs is recorded but is not deductible for tax purposes until the expenditure is actually incurred.		X	
Membership dues at a golf club are reported as a promotion expense but are not deductible for tax purposes.			X
Construction revenue is reported using the percentage of completion method but is not taxed until the project is finished.	X		
The present value of the costs for the future site remediation of an oil-drilling property has been capitalized as part of the asset's carrying value. This will increase the amount of depreciation claimed over the life of the asset. These costs are not deductible for tax purposes until they are actually incurred.		X	
A revaluation surplus (accumulated other comprehensive income) is reported for assets accounted for under the revaluation model. The gains will not be taxed until the respective assets are sold.	X		
Included in current assets is a prepaid expense that is fully deductible for tax purposes when paid.	X		
A penalty is paid for the late filing of the company's income tax return. This penalty is not deductible for tax purposes.			X

EXERCISE 15–2

		Amount	
Accounting profit		$	350,000
Permanent difference:			
Life insurance not taxable			(100,000)
Temporary difference:			
Depreciation not deductible			20,000
Taxable profit			270,000
Tax rate			20%
Current tax payable		$	54,000

Tax expense comprised of:			
Current tax expense		$	54,000
Deferred tax income (20,000 × 20%)			(4,000)
Total tax expense		$	50,000

EXERCISE 15–3

a. Current Tax:

		Amount	
Accounting profit		$	3,500,000
Permanent differences:			
None			
Temporary differences:			
Construction not yet taxable			(900,000)
Capital allowance > depreciation			(1,100,000)
Taxable profit			1,500,000
Tax rate			30%
Current tax payable		$	450,000

Temporary difference re: depreciation calculated as follows:

Cost of asset		$	6,800,000
Accumulated depreciation			1,200,000
Carrying value			5,600,000
Less tax base			4,500,000
Excess capital allowance		$	1,100,000

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Construction revenue	900,000	0	(900,000)	30%	(270,000)
PPE	5,600,000	4,500,000	(1,100,000)	30%	(330,000)
Total					(600,000)

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Current tax expense		450,000	
	Current taxes payable			450,000
	Deferred tax expense		600,000	
	Deferred tax liability			600,000

c.

Profit before tax					$	3,500,000
Income taxes						
Current expense			(450,000)			
Deferred expense			(600,000)			
						(1,050,000)
Net profit for the year					$	2,450,000

EXERCISE 15–4

a. Current Tax:

		Amount	
Accounting profit		$	3,700,000
Permanent differences:			
None			
Temporary differences:			
Construction now taxable			900,000
Capital allowance < depreciation			400,000
Taxable profit			5,000,000
Tax rate			30%
Current tax payable		$	1,500,000

Temporary difference re: depreciation calculated as follows:

Cost of asset		$	6,800,000
Accumulated depreciation			2,600,000
Carrying value			4,200,000
Less tax base			3,500,000
Excess capital allowance		$	700,000

Since last year's excess was $1,100,000, $400,000 of the temporary difference reversed during the year.

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Const. rev.	0	0	0	30%	0
PPE	4,200,000	3,500,000	(700,000)	30%	(210,000)
Total					(210,000)
Opening bal.					(600,000)
Adjustment					390,000

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Current tax expense		1,500,000	
	Current taxes payable			1,500,000
	Deferred tax liability		390,000	
	Deferred tax income			390,000

c.

Profit before tax					$	3,700,000
Income taxes						
Current expense			(1,500,000)			
Deferred income			390,000			
						(1,110,000)
Net profit for the year					$	2,590,000

EXERCISE 15–5

a. Opening deferred tax liability balance of $17,500 implies an opening temporary difference of $(17{,}500 \div 25\%) = \$70{,}000$. If the carrying amount at 31 December 2021 was $320,000, then the tax base must have been $(320{,}000 - 70{,}000) = \$250{,}000$.

At 31 December 2022, the carrying amount will be $(320{,}000 - 50{,}000) = \$270{,}000$

At 31 December 2022, the tax base will be $(250{,}000 - 58{,}000) = \$192{,}000$

Current Tax:

		Amount	
Accounting profit		$	416,000
Permanent differences:			
Non-deductible entertainment			21,000
Temporary differences:			
Warranty not deductible in 2022			56,000
Capital allowance > depreciation			(8,000)
Taxable profit			485,000
Tax rate			25%
Current tax payable		$	121,250

Deferred Tax Liability:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Warranty	(56,000)	0	56,000	25%	14,000
PPE	270,000	192,000	(78,000)	25%	(19,500)
Total					(5,500)
Opening bal.					(17,500)
Adjustment					12,000

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Current tax expense		121,250	
	Current taxes payable			121,250
	Deferred tax liability		12,000	
	Deferred tax income			12,000

c.

Profit before tax					$	416,000
Income taxes						
Current expense			(121,250)			
Deferred income			12,000			
						(109,250)
Net profit for the year					$	306,750

d.

Current Liabilities			
Income taxes payable		$	121,250
Non-Current Liabilities			
Deferred income taxes			5,500

EXERCISE 15–6

a. Current Tax:

		2021		2022		2023
Accounting profit		110,000		242,000		261,000
Permanent differences:						
Dividend		(10,000)		(10,000)		(10,000)
Temporary differences:						
(plug to balance)		(15,000)		(36,000)		34,000
Taxable profit		85,000		196,000		285,000
Tax rate		20%		23%		23%
Current tax payable/exp.		17,000		45,080		65,550

Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	15,000	0	(15,000)	20%	(3,000)
Opening bal.					0
Adjustment					(3,000)

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	51,000	0	(51,000)	23%	(11,730)
Opening bal.					(3,000)
Adjustment					(8,730)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	17,000	0	(17,000)	23%	(3,910)
Opening bal.					(11,730)
Adjustment					(7,820)

b. Summary: Income Statement

		2021			2022			2023
Current tax expense			17,000			45,080			65,550
Deferred tax expense (income)			3,000			8,730			(7,820)

Balance Sheet

		2021		2022		2023
Deferred tax liability		3,000		11,730		3,910

c.

Profit before tax					$	242,000
Income taxes						
Current			45,080			
Deferred resulting from temporary differences			8,280			
Deferred resulting from tax rate change			450			
						53,810
Net profit for the year					$	188,190

Note: The deferred tax resulting from the rate change is calculated as the opening temporary difference from 2021 multiplied by the rate differential: $\$15{,}000 \times (23\% - 20\%) = \$450$. The deferred tax resulting from temporary differences is calculated as the current year temporary differences multiplied by the current rate: $\$36{,}000 \times 23\% = \$8{,}280$. Deferred tax adjustments resulting from rate changes must be disclosed separately from deferred tax adjustments resulting from changes in temporary differences.

EXERCISE 15–7

a. Current Tax:

		2021		**2022**		**2023**
Accounting profit		110,000		242,000		261,000
Permanent differences:						
Dividend		(10,000)		(10,000)		(10,000)
Temporary differences:						
(plug to balance)		(15,000)		(36,000)		34,000
Taxable profit		85,000		196,000		285,000
Tax rate		20%		23%		23%
Current tax payable/exp.		17,000		45,080		65,550

Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	15,000	0	(15,000)	23%	(3,450)
Opening bal.					0
Adjustment					(3,450)

NOTE: Deferred tax is recorded at the rate expected to be in effect. This is substantively enacted rate at the end of 2021.

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	51,000	0	(51,000)	23%	(11,730)
Opening bal.					(3,450)
Adjustment					(8,280)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	17,000	0	(17,000)	23%	(3,910)
Opening bal.					(11,730)
Adjustment					7,820

b. Summary:

		2021		2022		2023
Current tax expense		17,000		45,080		65,550
Deferred tax expense (income)		3,450		8,280		(7,820)
Deferred tax liability		3,450		11,730		3,910

c.

Profit before tax					$	242,000
Income taxes						
Current			45,080			
Deferred			8,280			
						53,360
Net profit for the year					$	188,640

Note: The deferred tax resulting from the rate change does not need to be reported as it was already accounted for in 2021.

EXERCISE 15–8

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
2021	Current tax expense		2,500	
	Tax payable			2,500
	(10,000 × 25%)			
2022	Current tax expense		11,000	
	Tax payable			11,000
	(50,000 × 20%)			
2023	Income tax receivable		13,500	
	Current tax income			13,500
	(2,500 + 11,000)			
2023	Deferred tax asset		9,400	
	Deferred tax income			9,400
	(112,000 − 55,000 − 10,000) = 47,000; 47,000 × 20%			
2024	Deferred tax expense		4,720	
	Deferred tax asset			4,720

$(47{,}000 - 21{,}000) = 26{,}000$ ending balance of carry forward after applying loss to reduce current taxable income to 0

Ending deferred tax = $26{,}000 \times 18\% = 4{,}680$

Adjustment to deferred tax asset = $9{,}400 - 4{,}680 = 4{,}720$

There is no adjustment for current taxes in 2024 because taxable income has been reduced to 0 by the carryforward.

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
2021	Current tax expense		2,500	
	Tax payable			2,500
	(10,000 × 25%)			
2022	Current tax expense		11,000	
	Tax payable			11,000
	(50,000 × 20%)			
2023	Income tax receivable		13,500	
	Current tax income			13,500
	(2,500 + 11,000)			

No j/e in 2023 for the benefit of the loss carry forward, as the asset is not recognized. However, disclosure will be made of the unrecorded carry forward amount (47,000).

No j/e in 2024, as current tax will be 0 and no deferred tax asset will be established. However, disclosure is required of the current tax expense components:

Current tax expense $21{,}000 \times 18\%$		$	3,780
Less benefit of loss carried forward			(3,780)
Current tax expense		$	0

As well, disclosure of the remaining, unrecorded loss carried forward (26,000) would continue.

EXERCISE 15–9

a. Current Tax:

		Amount	
Accounting profit		$	750,000
Permanent differences:			
Non-deductible fines			12,000
Non-taxable dividends			(7,500)
Temporary differences:			
Previously taxed revenue now earned			(95,000)
New subscriptions taxed but not earned			68,000
Capital allowance < depreciation			13,000
Taxable profit			740,500
Tax rate			30%
Current tax payable		$	222,150

Deferred Tax:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Unearned revenue	(220,000)	0	220,000	30%	66,000
PPE	298,000	192,000	(106,000)	30%	(31,800)
Total					34,200
Opening bal.					38,400
Adjustment					(4,200)

Unearned revenue $= 247{,}000 - 95{,}000 + 68{,}000 = 220{,}000$
Carrying amount PPE $= 357{,}000 - 59{,}000 = 298{,}000$
Tax base PPE $= 238{,}000 - 46{,}000 = 192{,}000$

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Current tax expense		222,150	
	Current taxes payable			222,150
	Deferred tax expense		4,200	
	Deferred tax asset			4,200

c.

Profit before tax					$	750,000
Income taxes						
Current expense			(222,150)			
Deferred expense			(4,200)			
						(226,350)
Net profit for the year					$	523,650

d.

	2022	2021
Current assets		
Income taxes receivable	–	16,250
Non-current assets		
Deferred income taxes	34,200	38,400
Current liabilities		
Income taxes payable	222,150	–

EXERCISE 15–10

a. Deferred Tax Liability – 2021:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	180,000	165,000	(15,000)	25%	(3,750)
Opening bal.					0
Adjustment					(3,750)

Deferred Tax Liability – 2022:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	160,000	135,000	(25,000)	30%	(7,500)
Opening bal.					(3,750)
Adjustment					(3,750)

Deferred Tax Liability – 2023:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	140,000	135,000	(5,000)	35%	(1,750)
Opening bal.					(7,500)
Adjustment					5,750

Deferred Tax Liability/Asset – 2024:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	120,000	135,000	15,000	35%	5,250
Opening bal.					(1,750)
Adjustment					7,000

Deferred Tax Asset – 2025:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Temp Diff	100,000	110,000	10,000	30%	3,000
Opening bal.					5,250
Adjustment					(2,250)

NOTE: The carrying amount/tax base are determined by taking the original cost of $200,000 and deducting the accumulated depreciation/accumulated capital allowances at the end of each year.

b. Current taxes

		2021		2022		2023		2024		2025
Accounting profit (loss) reported		150,000		60,000		(440,000)		(80,000)		350,000
Temporary difference:										
Depreciation expense		20,000		20,000		20,000		20,000		20,000
Capital allowance claimed for										
tax purposes		(35,000)		(30,000)		0		0		(25,000)
Taxable profit (loss)		135,000		50,000		(420,000)		(60,000)		345,000
Enacted tax rate		25%		30%		35%		35%		30%
Tax payable (refund)		33,750		15,000		(48,750)*		0**		15,000***

* In 2023, a tax refund is generated as follows:

Tax loss applied to 2021 taxable profit			135,000					
Rate			25%					
Refund						33,750		
Tax loss applied to 2022 taxable profit			50,000					
Rate			30%					
Refund						15,000		
Total refund and tax income for the year							$	48,750

** In 2024, the additional loss cannot be carried back, as there are no further taxable profits to apply it against. Therefore, no tax refund is generated.

*** In 2025, the current tax payable is determined as follows:

Taxable profit						345,000
Less loss carry forward applied:						
2023 tax loss			(420,000)			
Applied to 2021			135,000			
Applied to 2022			50,000			
2024 loss			(60,000)			
Total loss available in 2025						(295,000)
Taxable profit after loss carry forward applied						50,000
Tax rate						30%
Tax payable						15,000

c.

		2023		**2024**
Opening balance of loss		0		(235,000)
Current tax loss/profit		(420,000)		(60,000)
Carried back to 2021 and 2022		185,000		–
Balance to carry forward		(235,000)		(295,000)
Probability of use		80%		10%
Expected benefit		(188,000)		0
Tax rate		35%		35%
Deferred tax asset		65,800		0
Opening balance		0		65,800
Adjustment required		65,800		(65,800)

In 2024, management's estimate of its ability to utilize the tax losses has dropped to 10%, which means it is no longer probable that the asset can be realized. At this point, the asset should be derecognized.

In 2025, the balance of the loss ($295,000) can be fully used against current taxable profit ($345,000). In 2025, the company will record current tax income of $295,000 × 30% = $88,500. This will offset the current tax expense of $345,000 × 30% = $103,500, leaving a net current tax expense of $15,000. Although there is no deferred tax adjustment as the asset was previously derecognized, disclosure of the two different components of current tax expense will be required.

d.

	2021	2022	2023	2024	2025
Current tax expense (income)	33,750	15,000	(48,750)	0	15,000
(from part b)					
Deferred tax expense (income) – PPE	3,750	3,750	(5,750)	(7,000)	2,250
(from part a)					
Deferred tax (income) expense – loss	0	0	(65,800)	65,800	0
(from part c)					
Total tax expense (income)	37,500	18,750	(120,300)	58,800	17,250

EXERCISE 15–11

a. Current Tax:

		Amount	
Accounting profit		$	150,000
Permanent differences:			
None			
Temporary differences:			
Unearned rent taxed in current year			96,000
Construction revenue not taxable			(90,000)
Capital allowance > depreciation			(4,000)
Taxable income			152,000
Tax rate			30%
Current tax payable		$	45,600

Future Tax:

Item	Carrying Amount	Tax Base	Temp. Diff.	Rate	Deferred Tax
Unearned rent revenue	(96,000)	0	96,000	30%	28,800
Construction revenue	90,000	0	(90,000)	30%	(27,000)
PPE	108,000	119,000	11,000	30%	3,300
Total					5,100
Opening bal.					4,500
Adjustment					600

NOTE: Opening balance = $(135{,}000 - 120{,}000) \times 30\% = 4{,}500$ DR

Summary:

Current tax expense		$	(45,600)
Future tax benefit			600
Total tax expense		$	(45,000)

b. Balance sheet presentation

Non-current assets			
Future income taxes		$	17,700
Current liabilities			
Income taxes payable			45,600
Future income taxes			12,600

NOTE:

Non-current future tax asset = $3{,}300 + (1 \div 2 \times 28{,}800)$

Current future tax liability = 27,000 − (1 ÷ 2 × 28,800)

One-half of the future tax related to unearned revenue is classified as current and one-half as non-current because this is way in which the underlying unearned revenue would be classified. The future tax related to construction revenue is classified as current because the underlying construction in process account would be classified this way. The future tax related to the PPE is classified as non-current because PPE would be classified as non-current.

c. Income Statement Presentation:

Income tax expense		$	(45,600)

Balance Sheet Presentation:

Current liabilities			
Income tax payable		$	45,600

No future tax amounts are recorded.

Chapter 16 Exercises

EXERCISE 16–1

	DC or DB
The employer has no obligation to the fund beyond the required payment	DC
Accounting for this type of plan is more complicated	DB
The employer bears the investment risk with this type of plan	DB
A liability is only recorded when the required payment is not made by year-end	DC
Accounting for this type of plan will likely require the use of actuarial specialists	DB

EXERCISE 16–2

a. $10,500,000 ÷ 12 = $875,000 monthly salary

Employee contribution = $875,000 × 4% = $35,000

Employer contribution = $875,000 × 6% = $52,500

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		630,000	
	Pension liability			87,500
	Cash (to the pension plan)			962,500
	Payroll expense		10,500,000	
	Cash (to the employees)			10,080,000

Note:

Pension expense = $52,500 × 12 = $630,000

Pension liability = $52,500 + $35,000 = $87,500

Cash paid to the pension plan = ($52,500 + $35,000) × 11 = $962,500

Cash paid to the employees = $10,500,000 − ($35,000 × 12) = $10,080,000

b. The company will report a pension expense of $630,000 in the appropriate section of the income statement.

c. The company will report a pension liability of $87,500 on December 31, 2022. This will be reported as a current liability, as the funds are remitted to the plan in January 2023.

EXERCISE 16–3

a. Pension expense = ($832,000 − $750,000) + $57,000 = $139,000

b. Pension expense = ($832,000 − $750,000) + $57,000 − $12,000 = $127,000

EXERCISE 16–4

Current Service Cost		$	1,600,000
Interest on DBO			936,000
Interest on Assets			(900,000)
Pension Expense		$	1,636,000

EXERCISE 16–5

a.

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	6,300,000 CR	5,950,000 DR	350,000 CR			
Service cost	575,000 CR				575,000 DR	
Interest: DBO	441,000 CR				441,000 DR	
Interest: assets		416,500 DR			416,500 CR	
Contribution		682,000 DR		682,000 CR		
Benefits paid	186,000 DR	186,000 CR				
Remeasurement		20,500 DR				20,500 CR
gain: assets						
Journal entry			103,000 DR	682,000 CR	599,500 DR	20,500 CR
Closing balance	7,130,000 CR	6,883,000 DR	247,000 CR			

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		599,500	
	Other comprehensive income			20,500
	Net defined benefit liability		103,000	
	Cash			682,000

c. The company will report a non-current liability of $247,000 on December 31, 2021.

EXERCISE 16–6

a.

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	4,400,000 CR	4,550,000 DR	150,000 DR			
Service cost	565,000 CR				565,000 DR	
Interest: DBO	352,000 CR				352,000 DR	
Interest: assets		364,000 DR			364,000 CR	
Contribution		422,000 DR		422,000 CR		
Benefits paid	166,000 DR	166,000 CR				
Remeasurement		52,000 CR				52,000 DR
loss: assets						
Remeasurement	176,000 CR					176,000 DR
loss: DBO						
Journal entry			359,000 CR	422,000 CR	553,000 DR	228,000 DR
Closing balance	5,327,000 CR	5,118,000 DR	209,000 CR			

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		553,000	
	Other comprehensive income		228,000	
	Net defined benefit liability			359,000
	Cash			422,000

c.

Non-Current Liabilities:			
Net defined benefit liability		$	209,000
Accumulated Other Comprehensive Income:			
Net remeasurement losses on defined benefit liability		$	(228,000)

EXERCISE 16–7

a. 2020:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	0 CR	0 DR	0 CR			
Service cost	389,000 CR				389,000 DR	
Interest: DBO	0 CR				0 DR	
Interest: assets		0 DR			0 CR	
Contribution		348,000 DR		348,000 CR		
Benefits paid	0 DR	0 CR				
Remeasurement		2,000 DR				2,000 CR
gain: assets						
Remeasurement	27,000 DR					27,000 CR
gain: DBO						
Journal entry			12,000 CR	348,000 CR	389,000 DR	29,000 CR
Closing balance	362,000 CR	350,000 DR	12,000 CR			

Remeasurement gains are derived by working backwards from the ending balances of the DBO and plan assets. No interest is calculated as the opening balances were zero and it is assumed that transactions occur at the end of the period.

2021:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	362,000 CR	350,000 DR	12,000 CR			
Service cost	395,000 CR				395,000 DR	
Interest: DBO*	25,340 CR				25,340 DR	
Interest: assets**		24,500 DR			24,500 CR	
Contribution		301,000 DR		301,000 CR		
Benefits paid	50,000 DR	50,000 CR				
Remeasurement		15,500 CR				15,500 DR
loss: assets***						
Remeasurement	0 CR					0 DR
loss: DBO						
Journal entry			110,340 CR	301,000 CR	395,840 DR	15,500 DR
Closing balance	732,340 CR	610,000 DR	122,340 CR			

* $\$362{,}000 \times 7\% = \$25{,}340$

** $\$350{,}000 \times 7\% = \$24{,}500$

*** $\$610{,}000 - \$350{,}000 - \$24{,}500 - \$301{,}000 + \$50{,}000 = \$15{,}500$ CR (Work backwards from the ending balance to determine the balancing figure.)

2022:

	Pension Plan		Company Accounting Records			
	DBO	Plan	Net	Cash	Annual	OCI
		Assets	Defined		Pension	
			Benefit		Expense	
			Balance			
Opening balance	732,340 CR	610,000 DR	122,340 CR			
Service cost	410,000 CR				410,000 DR	
Interest: DBO*	58,587 CR				58,587 DR	
Interest: assets**		48,800 DR			48,800 CR	
Contribution		265,000 DR		265,000 CR		
Benefits paid	54,000 DR	54,000 CR				
Remeasurement		15,000 CR				15,000 DR
loss: assets						
Remeasurement	42,000 CR					42,000 DR
loss: DBO						
Journal entry			211,787 CR	265,000 CR	419,787 DR	57,000 DR
Closing balance	1,188,927 CR	854,800 DR	334,127 CR			

* $732,340 × 8% = $58,587

** $610,000 × 8% = $48,800

b. 2020:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		389,000	
	Other comprehensive income			29,000
	Net defined benefit liability			12,000
	Cash			348,000

2021:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		395,840	
	Other comprehensive income		15,500	
	Net defined benefit liability			110,340
	Cash			301,000

2022:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		419,787	
	Other comprehensive income		57,000	
	Net defined benefit liability			211,787
	Cash			265,000

c. 2020:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	12,000
Accumulated Other Comprehensive Income:			
Net remeasurement gains on defined benefit liability		$	29,000

2021:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	122,340
Accumulated Other Comprehensive Income:			
Net remeasurement gains on defined benefit liability		$	13,500*

* Note: Balance = $29,000 CR – $15,500 DR

2022:

Non-Current Liabilities:			
Net defined benefit liability (underfunded)		$	334,127
Accumulated Other Comprehensive Income:			
Net remeasurement losses on defined benefit liability		$	(43,500)*

* Note: Balance = $13,500 CR – $57,000 DR

EXERCISE 16–8

a.

	Pension Plan		Company Accounting Records		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	6,246,000 CR	6,871,000 DR	625,000 DR		
Past service cost	215,000 CR				215,000 DR
Service cost	510,000 CR				510,000 DR
Interest:	581,490 CR				581,490 DR
Health Benefit Obligation*					
Interest: assets**		618,390 DR			618,390 CR
Contribution		430,000 DR		430,000 CR	
Benefits paid	850,000 DR	850,000 CR			
Journal entry			258,100 CR	430,000 CR	688,100 DR
Closing balance	6,702,490 CR	7,069,390 DR	366,900 DR		

$*(\$6,246,000 + \$215,000) \times 9\% = \$581,490$

$** \$6,871,000 \times 9\% = \$618,390$

The post-employment health benefit expense will be $688,100 for the year. Note that the interest on the health benefit obligation is calculated after taking the past service adjustment into account. This is necessary as the past service adjustment was made on January 1.

b. The company will report a non-current asset of $366,900, subject to any adjustment required as a result of the asset ceiling test.

EXERCISE 16–9

a.

	Pension Plan		Company Accounting Records		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	6,300,000 CR	5,950,000 DR	350,000 CR		
Service cost	575,000 CR				575,000 DR
Interest: DBO	441,000 CR				441,000 DR
Interest: assets		416,500 DR			416,500 CR
Contribution		682,000 DR		682,000 CR	
Benefits paid	186,000 DR	186,000 CR			
Remeasurement		20,500 DR			20,500 CR
gain: assets					
Journal entry			103,000 DR	682,000 CR	579,000 DR
Closing balance	7,130,000 CR	6,883,000 DR	247,000 CR		

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		579,000	
	Net defined benefit liability		103,000	
	Cash			682,000

c. The company will report a non-current liability of $247,000 on December 31, 2021.

EXERCISE 16–10

a.

	Pension Plan		Company Accounting Records		
	DBO	Plan	Net	Cash	Annual
		Assets	Defined		Pension
			Benefit		Expense
			Balance		
Opening balance	4,400,000 CR	4,550,000 DR	150,000 DR		
Service cost	565,000 CR				565,000 DR
Interest: DBO	352,000 CR				352,000 DR
Interest: assets		364,000 DR			364,000 CR
Contribution		422,000 DR		422,000 CR	
Benefits paid	166,000 DR	166,000 CR			
Remeasurement		52,000 CR			52,000 DR
loss: assets					
Remeasurement	176,000 CR				176,000 DR
loss: DBO					
Journal entry			359,000 CR	422,000 CR	781,000 DR
Closing balance	5,327,000 CR	5,118,000 DR	209,000 CR		

b.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Pension expense		781,000	
	Net defined benefit liability			359,000
	Cash			422,000

c.

Non-Current Liabilities:			
Net defined benefit liability		$	209,000

No accumulated other comprehensive income is reported. The remeasurement losses would simply be included in retained earnings through the closing of the pension expense account at the end of the year.

Chapter 17 Exercises

EXERCISE 17–1

a. **Lessee analysis (ASPE):**

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? Yes
- Is the lease term 75% or more of the asset's estimated economic or useful life? No 6 years/10 years = 60%, which does not meet the 75% threshold
- Does the present value of the minimum lease payments exceed 90% of the leased asset's fair value? Yes, as calculated below.

  Present value of minimum lease payments:

  PV = (25,100 PMT/AD, 7 I/Y, 6 N, 3,000 FV) = $130,014 (rounded)

  ASPE interest rate used must be the lower of the two rates, since both are known.

  The present value compared to the fair value of $130,000 exceeds the 90% numeric threshold. Note that the leased asset and obligation cannot exceed fair value, so $130,000 will be the amount used as the valuation in the journal entries below.

Any one of the criteria met will result in a classification of a capital lease. In this case, the lease agreement has met two criteria: a bargain purchase option, and a present value of the minimum lease payments that exceeds 90% of the fair value of the asset.

Lessor Analysis (ASPE)

The lease agreement meets the capitalization criteria for the lessee above. Additionally, there are no uncertainties regarding the collectability of the lease payments and the costs yet to be incurred by the lessor (both must be met). This would, therefore, be classified as a capital lease for the lessor. The initial amount of net investment (fair value) of $130,000 exceeds the lessor's cost of $90,000, making the lease a sales-type lease to the lessor.

b. Gross investment (lease receivable) for the lessor:

The minimum lease payments regarding this lease are:

Calculation:	6 × $25,100	=	$	150,600
BPO		+		3,000
Gross investment at inception			$	153,600

Net investment for the lessor:

The $130,000 fair value in this case (or the present value if it does not exceed the fair value).

c.

Lessee and Lessor

Lease Amortization Schedule

Date	Annual Lease Payment Plus BPO	Interest @ 7%	Reduction of Lease Obligation	Balance Lease Obligation
Jul 1, 2021	$ 25,100			$ 130,000
Jul 1, 2021	25,100		$ 25,100	104,900
Jul 1, 2022	25,100	$ 7,343	17,757	87,143
Jul 1, 2023	25,100	6,100	19,000	68,143
Jul 1, 2024	25,100	4,770	20,330	47,813
Jul 1, 2025	25,100	3,347	21,753	26,060
Jul 1, 2026	25,100	1,824	23,276	2,784
Jun 30, 2027	3,000	216*	2,784	0
	$ 153,600	$ 23,600	$ 130,000	

* Note: The lease valuation is limited to its fair value of $130,000 instead of the present value of $130,014. The difference ($14) is insignificant, thus a new interest rate is not required for the amortization schedule above. Had the present value been significantly higher than the fair value, a new effective interest rate would be required and calculated using the following methodology.

I/Y = (+/- 130,000 PV, 25,100 PMT/AD, 6 N, 3,000 FV) = 7.004876% or 7%

As can be seen, the 7% rate for the lessor has not significantly changed, so 7% will be the rate used in the amortization schedule above.

d. Lessee journal entries:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jul 1, 2021	Equipment under lease		130,000	
	Obligations under lease			130,000
	Note: Leased asset present value cannot exceed its fair value of $130,000.			
	Obligations under lease		25,100	
	Cash			25,100

Year-end adjusting entries:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Interest expense		3,672	
	Interest payable			3,672
	($7,343 × 6 ÷ 12 = $3,672)			
	Depreciation expense		6,425	
	Accumulated depreciation – leased equipment*			6,425
	(($130,000 – 1,500) ÷ 10 years economic life) × 6 ÷ 12)			
Jul 1, 2022	Interest payable		3,672	
	Interest expense		3,671	
	Obligations under lease		17,757	
	Cash			25,100
	For Interest expense: ($7,343 – $3,672 payable), some rounding involved			

* Note: Because there is a bargain purchase option, the leased asset is depreciated over its economic life rather than over the lease term. This is because the BPO, much less than the market price at that time, will be exercised by the lessee and the asset will be used beyond the lease term.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 13, 2022	Interest expense		3,050	
	Interest payable			3,050
	($6,100 × 6 ÷ 12)			
Dec 31, 2022	Depreciation expense		12,850	
	Accumulated depreciation – leased equipment			12,850
	(($130,000–1,500)÷10 years economic life)			

e. Lessor entries

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jul 1, 2021	Lease receivable		153,600	
	Cost of goods sold		90,000	
	Sales revenue			130,000
	Unearned interest income			23,600
	Inventory			90,000
Jul 1, 2021	Cash		25,100	
	Lease receivable			25,100

Year-end adjusting entry:

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Unearned interest income		3,672	
	Interest income			3,672
	($7,343 × 6 ÷ 12)			

2022 payment:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jul 1, 2022	Cash		25,100	
	Lease receivable			25,100

Year-end adjusting entry:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Unearned interest income		6,722	
	Interest income			6,722
	($7,343 × 6 ÷ 12) + (6,100 × 6 ÷ 12)			

Note: The lessor could record six months of interest income in July, and six months of interest income on December 31 to match the lessee interest entries. However, the minimum reporting requirement would be to recognize interest income each reporting date (December 31). If the lessor also had interim reporting every six months within the fiscal year, interest income would be accrued every six months to ensure that both the interim and year-end financial statements were complete.

f. For the lessee:

Rather than using quantitative factors, such as the 75% and the 90% hurdles, the IFRS (IAS 17) criteria use qualitative factors to establish whether the risks and rewards of ownership have transferred to the lessee, which supports the classification as a capitalized lease:

- There is reasonable assurance that the lessee will obtain ownership of the leased property by the end of the lease term. If there is a bargain purchase option in the lease, it is assumed that the lessee will exercise it and obtain ownership of the asset (same as with ASPE).
- The lease term is long enough that the lessee will receive substantially all of the economic benefits that are expected to be derived from using the leased property over its life (equivalent to the 75% numeric threshold for ASPE).
- The lease allows the lessor to recover substantially all of its investment in the leased property and to earn a return on the investment. Evidence of this is provided if the present value of the minimum lease payments is close to the fair value of the leased asset (equivalent to the 90% numeric threshold for ASPE).
- The leased assets are so specialized that, without major modification, they are of use only to the lessee (IFRS (IAS 17) only).

If the lease is deemed as a lease subject to capitalization, the accounting treatment of the lease by the lessee would be the same as ASPE, although it would be referred to as a finance lease, rather than a capital, direct financing lease.

The treatment of the lease by the lessor would be the same as the lessee above, using qualitative criteria rather than numeric thresholds used for ASPE. (The criteria will not include the two-revenue recognition-based tests for uncertainty regarding collectability of lease payments and estimated un-reimbursable costs for the lessor.) The lease would be referred to as a finance lease, manufacturer or dealer rather than a sales-type lease.

g. If the lease agreement included an unguaranteed residual, the leased asset would be physically returned to the lessor at the end of the lease term. The depreciation charge would, therefore, be over the lease term and not the asset's economic life, which is the case when a bargain purchase is involved. As well, the depreciation calculation would not include a residual value.

EXERCISE 17–2

a. Lessee analysis (IFRS, IAS 17)

- Does ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No
- Is the lease term covering the majority of the asset's estimated economic or useful life? Consider that the lease term is eight years and the economic life is ten years, so this constitutes a major part of the economic life of the asset. Yes, capitalize leased asset.
- The leased asset is a specialized piece of landscaping machinery, so it will only benefit the lessee without major modifications. Yes, capitalize leased asset.
- Does the present value of the minimum lease payments allow the lessor to recover substantially all of the leased asset's fair value as well as realizing a return on the investment? Consider that the present value of the minimum lease payments shown below is nearly equal to the fair value of $270,000, so it appears that the lessor will be reimbursed for all of the leased investment, including a return on investment. Yes, capitalize leased asset.

Yearly payment		$	46,754
Less: Executory costs			2,000
Minimum annual lease payment		$	44,754

Present value of minimum lease payments:
PV = (44,754 PMT/AD, 9 I/Y, 8 N, 0 FV) = $269,999 (which is virtually 100% of the fair value of $270,000)

Under IFRS (IAS 17), the lessee will classify this lease as a finance lease since the lease term covers substantially all of the asset's useful life, the present value of the minimum lease payments allows the lessor to recover almost all of the leased asset's fair value (as well as realizing a return on the investment), and the machinery is highly specialized. Three of the criteria considered were met so it is reasonable to assume that the lessee will capitalize the lease.

The treatment of the lease by the lessor would be the same as the lessee above, using the qualitative criteria rather than numeric thresholds used for ASPE. Except the lessor classification criteria will not include the two-revenue recognition-based tests for uncertainty regarding collectability of lease payments and estimated un-reimbursable costs for the lessor. Again, since three criteria were met, it is reasonable to assume that the lease would be classified as a finance lease.

b. IFRS (IAS 17) states that the rate implicit in the lease is to be used wherever it is reasonably determinable. Using the fair value of $270,000, the implicit rate can be calculated:

I/Y = (+/- 270,000 PV, 44,754 PMT/AD, 8 N) = 9% (rounded) which is the same rate as the lessee's

Mercy Ltd.											
Lease Amortization Schedule											
(Lessee)											
		Annual Lease									
		Payment			Interest		Reduction			Balance	
		Excluding					of Lease			Lease	
Date		Executory Costs)			@ 9%		Obligation			Obligation	
										$	270,000
Jan 1, 2021		$	44,754				$	44,754			225,246
Jan 1, 2022			44,754		$	20,272		24,482			200,764
Jan 1, 2023			44,754			18,069		26,685			174,079
Jan 1, 2024			44,754			15,667		29,087			144,992
Jan 1, 2025			44,754			13,049		31,705			113,287
Jan 1, 2026			44,754			10,196		34,558			78,729
Jan 1, 2027			44,754			7,086		37,668			41,061
Jan 1, 2028			44,754			3,693*		41,061			0
		$	358,032		$	88,032	$	270,000			
* rounded											

c.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Equipment under lease		270,000	
	Obligations under lease			270,000
Jan 1, 2021	Insurance expense		2,000	
	Obligations under lease		44,754	
	Cash			46,754
Dec 31, 2021	Depreciation expense		33,750	
	Accumulated depreciation–leased equipment ($270,000 ÷ 8)			33,750
Dec 31, 2021	Interest expense		20,272	
	Interest payable			20,272
Jan 1, 2022	Insurance expense		2,000	
	Interest payable		20,272	
	Obligations under lease		24,482	
	Cash			46,754
Dec 31, 2022	Depreciation expense		33,750	
	Accumulated depreciation–leased equipment			33,750
Dec 31, 2022	Interest expense		18,069	
	Interest payable			18,069

d.

Mercy Ltd.			
Statement of Financial Position			
December 31, 2022			
Non-current assets			
Equipment under lease		$	270,000
Accumulated depreciation			(67,500)
			202,500
Current liabilities			
Interest payable			18,069
Current portion of long-term lease obligation*			26,685
Non-current liabilities			
Long-term lease obligation (200,764 – 26,685)		$	174,079

* The principal portion of the lease payment over the next 12 months after the reporting date of December 31, 2022. Refer to the amortization schedule above.

Required disclosure in the notes:

The following is a schedule of future minimum lease payments under the finance lease, expiring December 31, 2028, together with the balance of the obligation under finance lease.

Year ending December 31			
2023		$	46,754
2024			46,754
2025			46,754
2026			46,754
2027			46,754
2028			46,754
			280,524
Less amount representing executory costs			12,000
Total minimum lease payments			268,524
Less amount representing interest at 9%*			67,760
Balance of the obligation, December 31, 2022		$	200,764

* $88,032 total interest from schedule above – $20,272 recorded interest

Note: Additional disclosures would also be required about material lease arrangements, including contingent rents, sub-lease payments, and lease-imposed restrictions. These do not apply in this case.
EXERCISE 17–3

Lessee Analysis (IFRS, IAS 17)

- Does the ownership title pass? No, title remains with the lessor.
- Is there a BPO or a bargain renewal option? No
- Does the lease term cover the majority of the asset's estimated economic or useful life? Consider that the lease term is eight years, and the economic life is twelve years, the lease covers a major part of the economic life of the asset. Yes, capitalize leased asset.
- As the leased asset is a specialized piece of landscaping machinery, it will only benefit the lessee without major modifications. Yes, capitalize leased asset.
- Does the present value of the minimum lease payments allow the lessor to recover substantially all of the leased asset's fair value, as well as realizing a return on the investment? Consider that the present value of the minimum lease payments is $288,960, compared to the fair value of $300,000, making the minimum lease payments nearly equal to the fair value at that date. As such, the lessor will recover substantially all of the leased asset's fair value, as well as a return of 9% on the investment. Yes, as calculated below.

Yearly payment		$	50,397
Less: Executory costs			2,500
Minimum annual lease payment		$	47,897

Present value of minimum lease payments:
PV = (47,897 PMT/AD, 9 I/Y, 8 N, 0 FV) = 288,960 (which is substantially most of the fair value of $300,000)

Consider the following criteria: The lease term covers substantially all of the asset's useful life, the present value of the minimum lease payments recovers substantially most of the leased asset's fair value (as well as realizing a return on the investment), and the machinery is highly specialized for the lessee. As these three factors have been met, it is reasonable to assume that the lease will be classified as a finance lease for the lessee under IFRS (IAS 17).

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Equipment under lease		288,960	
	Obligations under lease			288,960
Jan 1, 2021	Prepaid repair and maintenance expense		2,500	
	Obligations under lease		47,897	
	Cash			50,397
Jun 30, 2021	Depreciation expense		18,060	
	Accumulated depreciation – Leased equipment ($288,960 ÷ 8 × 6/12)			18,060

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jun 30, 2021	Interest expense		10,848	
	Interest payable (($288,960 – 47,897) × 9% × 6 ÷ 12)			10,848
Jun 30, 2021	Repair and maintenance expense		1,250	
	Prepaid repair and maintenance ($2,500 × 6 ÷ 12) from Jan 1 to June 30			1,250
Jan 1, 2022	Repair and maintenance expense		1,250	
	Prepaid repairs		1,250	
	Interest expense		10,848	
	Interest payable		10,848	
	Obligations under lease		26,201	
	Cash			50,397
	For Repair and maintenance: ($2,500 × 6 ÷ 12) from June 1 to Dec 31, 2021			
	For Interest expense: ($288,960 – 47,897) × 9% = 21,696 – 10,848 accrued June 30 = 10,848 interest from July 1 to Dec 31, 2021			

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jun 30, 2022	Depreciation expense		36,120	
	Depreciation – Leased equipment			36,120
Jun 30, 2022	Interest expense		9,669	
	Interest payable			9,669
	(($288,960 – 47,897 – 26,201) × 9% × 6 ÷ 12			
Jun 30, 2022	Repair and maintenance expense		1,250	
	Prepaid repair and maintenance			1,250
	($2,500 × 6/12) from Jan 1 to June 30			

EXERCISE 17–4

a. This is a finance lease to Oberton Ltd. The IFRS (IAS 17) criteria use qualitative factors to establish whether the risks and rewards of ownership are transferred to the lessee, and supports classification as a finance lease:

1. There is reasonable assurance that the lessee will obtain ownership of the leased property by the end of the lease term. If there is a bargain purchase option in the lease, it is assumed that the lessee will exercise it and obtain ownership of the asset. No
2. The lease term is long enough that the lessee will receive substantially all of the economic benefits that are expected to be derived from using the leased property over its life (as evidenced by a four-year lease compared to a six-year estimated economic life). Yes, this represents a major part of the economic life of the asset.
3. The lease allows the lessor to recover substantially all of its investment in the leased property and to earn a return on the investment. Evidence of this is provided if the present value of the minimum lease payments is close to the fair value of the leased asset. Yes

   Compared to a fair value of $18,000 = 100% recovery of investment + an 8% return on investment.

4. The leased assets are so specialized that, without major modification and/or significant cost to the lessor, they are of use only to the lessee. **No**

The standard also states that these indicators are not always conclusive. The decision has to be made on the substance of each specific transaction. If the lessee determines that the risks and benefits of ownership have not been transferred to it, the lease is classified as an operating lease. In this case, two factors have been met so it would be reasonable to classify this lease as a finance lease for the lessee.

For Black Ltd. (the lessor) under IFRS (IAS 17), the lease would receive the same treatment as for the lessee using the qualitative factors. Black Ltd. reasonably meets the factors, and is not a manufacturer or dealer, and so this is a finance lease.

b. Calculation of annual rental payment:

PMT = +/- 18,000 PV, 8 I/Y, 4 N, 3,500 FV = $4,313 + $20 executory costs = $4,333 lease payment, including executory costs of $20.

This confirms that the interest rate used to calculate the lease payment was 8% per annum.

c. **Lease Amortization Schedule**

Date	Lease Payment Excluding Executive Costs)	Interest @ 8%	Reduction of Lease Obligation	Balance Lease Obligation
				$ 18,000
Jan. 1, 2021	$ 4,313		$ 4,313	13,687
Jan. 1, 2022	4,313	$ 1,095	3,218	10,469
Jan. 1, 2023	4,313	838	3,475	6,994
Jan. 1, 2024	4,313	560	3,753	3,241
Jan. 1, 2025	3,500	259	3,241	0
	$ 20,752	$ 2,752	$ 18,000	

d.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Asset under lease		18,000	
	Obligations under lease			18,000
	PV = (4,313 PMT/AD, 8 I/Y, 4 N, 3,500 FV for guaranteed residual)			
Jan 1, 2021	Obligations under lease		4,313	
	Insurance expense		20	
	Cash			4,333
Dec 31, 2021	Interest expense		1,095	
	Interest payable			1,095
Dec 31, 2021	Depreciation expense		3,625	
	Accumulated depreciation – asset under lease			3,625
	($18,000 – $3,500) ÷ 4			
Jan 1, 2022	Obligations under lease		3,218	
	Interest payable		1,095	
	Insurance expense		20	
	Cash			4,333

e.

Oberton Ltd.			
Statement of Financial Position			
December 31, 2021			
Non-current assets			
Property, plant, and equipment			
Vehicles under lease		$	18,000
Less accumulated depreciation			3,625
			14,375
Current liabilities			
Interest payable			1,095
Obligations under lease (Note 1)			3,218
Non-current liabilities			
Obligations under lease (Note 1)		$	10,469

Note 1: The following is a schedule of future minimum payments under finance lease expiring January 1, 2025, together with the present balance of the obligation under the lease.

Year ending December 31, 2021			
2022		$	4,333
2023			4,333
2024			4,333
2025			3,500
			16,499
Amount representing executory costs			(60)
Amount representing interest			(2,752)
Balance of obligation December 31, 2021		$	13,687

Oberton Ltd.			
Statement of Income			
For the Year Ended December 31, 2021			
Administrative expense			
Depreciation expense		$	3,625
Insurance expense			20
Other expenses			
Interest expense			1,095

* from lease amortization schedule part (c)

f.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2025	Interest payable		259	
	Obligations under lease		3,241	
	Accumulated depreciation		14,500	
	Loss on lease		300	
	Asset under lease			18,000
	Cash			300

g. Entries for Black Ltd.:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Lease receivable		20,752	
	Equipment acquired for lessee			18,000
	Unearned interest income			2,752
Jan 1, 2021	Cash		4,333	
	Insurance expense			20
	Lease receivable			4,313
Dec 31, 2021	Unearned interest income		1,096	
	Interest income			1,095

h.

Black Ltd.			
Income Statement			
For the Year Ended December 31, 2021			
Revenue			
Interest income (leases)*		$	1,095

* from lease amortization schedule part (c)

Note: The insurance recovery of $20 per year would offset the original insurance expense incurred by Black Ltd.

EXERCISE 17–5

a. **Lessor Analysis (ASPE)**

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Lease receivable*		375,000	
	Cost of goods sold		84,652	
	Sales revenue**			283,774
	Inventory			100,000
	Unearned interest income***			75,878

* $(35{,}000 \times 10 \text{ years}) + 25{,}000$ unguaranteed residual value Note: The unguaranteed residual value is included in the lessor's gross investment even though the lessee does not guarantee it. From the lessor's perspective, it anticipates receiving $25,000 from a third party at the end of the lease term and it does not matter who they receive it from. ** The residual value is unguaranteed, so its present value must be removed from the sale price to the lessee. Present value of the minimum lease payments = (35,000 PMT/AD, 5 I/Y, 10 N, 25,000 FV) = $299,122 Sales price $(\$299{,}122 - \$15{,}348) = \$283{,}774$ OR remove the $25,000 residual value from the present value calculation above. PV = (35,000 PMT/AD, 5 I/Y, 10 N) = $283,774 *** The unearned interest income of $75,878 is calculated as the lease receivable (gross investment) less the present value of the minimum lease payments $(\$375{,}000 - \$299{,}122)$.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Selling expense		10,000	
	Cash			10,000
	(expensed per Section 3065.43)			
Jan 1, 2021	Cash		35,000	
	Lease receivable			35,000
May 31, 2021	Unearned interest income		5,503	
	Interest income			5,503
	(($299,122 − $35,000) × 5%) × 5 ÷ 12)			

c. Assuming the $25,000 residual value was guaranteed by the lessee, this would change the initial entry for the sale as follows:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Lease receivable		375,000	
	Cost of goods sold		100,000	
	Sales revenue			299,122
	Inventory			100,000
	Unearned interest income			75,878

The sales revenue and cost of goods sold would not need to be reduced by the present value of the estimated residual value ($15,348) calculated in part (b). The sales revenue would, therefore, be the amount equalling the present value of the minimum lease payments.

d. Lease payment PMT/AD = (299,122 PV, 5 I/Y, 12 N, 40,000 FV) = $29,748 (rounded)

EXERCISE 17–6

a. Lessee Analysis (ASPE)

- Does ownership title pass? Yes, legal title passes to the lessee at the end of the lease term.
- Is there a BPO or a bargain renewal option? N/A, title passes, so BPO is not relevant.
- Is the lease term 75% or more of the asset's estimated economic or useful life? Yes 10 years/10 years = 100% which meets the 75% threshold
- Does the present value of the minimum lease payments exceed 90% of the leased asset's fair value? Yes, as calculated below.

  PV = (61,507 PMT/A, 7 I/Y, 10 N, 0 FV) = $432,000 (rounded)

  The ASPE interest rate used must be the lower of the two, since both are known.

  The present value is equal to the fair value of $432,000, so it exceeds the 90% numeric threshold.

  Any one of the criteria met will result in a classification of a *capital lease for the lessee*. In this case, the lease agreement has met three criteria: legal title passes to the lessee, a lease term that exceeds 75% of the estimated economic life of the leased asset, and a present value of the minimum lease payments that exceeds 90% of the fair value of the asset.

Lessor Analysis (ASPE)

The lease agreement meets the capitalization criteria for the lessee above. In addition, there are no uncertainties regarding the collectability of the lease payments or the costs yet to be incurred by the lessor (both must be met). This would, therefore, be classified as a capital lease for the lessor. Additionally, as the lessor is a financing company this lease would

be classified as a direct-financing lease by the lessor.

b. **Kimble Ltd. (lessee) entries**

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1, 2021	Cash		432,000	
	Equipment (net)			385,000
	Deferred profit on sale – leaseback			47,000
Jan 1, 2021	Equipment under lease		432,000	
	Obligations under lease			432,000
	(PV = (61,507 PMT/A, 7 I/Y, 10 N, 0 FV))			

Note: The present value calculation in this case will involve the annual payment (PMT) of an ordinary annuity (paid at the end of each year) for 10 periods at 7%. The interest rate under ASPE is to be the lower of the two rates, if both are known.

Earlier leasing questions involved the annual payment of an annuity due at the beginning of each year over the lease term.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2021	Operating expenses		7,200	
	Accounts payable (or cash)			7,200
Dec 31, 2021	Deferred profit on sale-leaseback		4,700	
	Depreciation expense			4,700
	($47,000 ÷ 10 years lease term)			
Dec 31, 2021	Depreciation expense		43,200	
	Accumulated depreciation – leased equipment			43,200
	Interest expense		30,240	
	Obligations under lease		31,267	
	Cash			61,507

Note: Under ASPE, Kimble Ltd. is to use the lower of the two rates. The deferred profit on the sale-leaseback is to be amortized on the same basis that the asset is being depreciated, which, in this case, is ten years.

Quick Finance Corp. (lessor) entries

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 2, 2021	Equipment acquired for lease		432,000	
	Cash			432,000
Jan 2, 2021	Lease receivable		615,070	
	Equipment acquired for lease			432,000
	Unearned interest income			183,070
	For Lease receivable: ($61,507 × 10)			
Dec 31, 2021	Cash		61,507	
	Lease receivable			61,507
Dec 31, 2021	Unearned interest income		30,240	
	Interest income			30,240
	(432,000 × 7%)			

Chapter 18 Exercises

EXERCISE 18–1

Transaction	Effect
Issuance of common shares	NE
Share split	NE
A revaluation of surplus resulting from a remeasurement of an	
available-for-sale asset	NE
Declaration of a cash dividend	D
Net income earned during the year	I
Declaration of a share dividend	D
Payment of a cash dividend	NE
Issuance of preferred shares	NE
Re-acquisition of common shares	D or NE
Appropriation of retained earnings for a reserve	D
A cumulative, preferred dividend that is unpaid at the end of the year	NE

EXERCISE 18–2

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		300,000	
	Common shares			300,000
	(20,000 × $15)			
Feb 1	Incorporation costs		9,000	
	Common shares			9,000
Mar 15	Cash		500,000	
	Preferred shares			500,000
	(10,000 × $50)			
Apr 30	Equipment		50,000	
	Common shares			50,000
Jun 15	Cash		125,000	
	Common shares			125,000
	(5,000 × $25)			

EXERCISE 18–3

a.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		500,000	
	Share subscription receivable		1,000,000	
	Common shares subscribed			1,500,000
	For Cash: (100,000 × $5)			
	For Share subscription: (100,000 × ($15 − $5))			

b.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		1,000,000	
	Share subscription receivable			1,000,000
	Common shares subscribed		1,500,000	
	Common shares			1,500,000

c.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		900,000	
	Share subscription receivable			1,000,000
	Common shares subscribed		1,500,000	
	Common shares			1,350,000
	Accounts payable			50,000
	For Cash: ($1,000,000 × 90%)			
	For Common shares: ($1,500,000 × 90%)			
	For Accounts payable: ($500,000 × 10%)			

d.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		900,000	
	Share subscription receivable			1,000,000
	Common shares subscribed		1,500,000	
	Common shares			1,350,000
	Contributed surplus			50,000
	For Cash: ($1,000,000 × 90%)			
	For Common shares: ($1,500,000 × 90%)			
	For Contributed surplus: ($500,000 × 10%)			

e.

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		900,000	
	Share subscription receivable			1,000,000
	Common shares subscribed		1,500,000	
	Common shares			1,400,000
	For Cash: ($1,000,000 × 90%)			
	For Common shares: ($1,500,000 × 90% + (100,000 × 10% × ($5 ÷ $15) × $15))			

EXERCISE 18–4

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Treasury shares		55,000	
	Cash			55,000
	(5,000 × $11)			
	Cash		80,000	
	Treasury shares			55,000
	Contributed surplus			25,000
	For Cash: (5,000 × $16)			

EXERCISE 18–5

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 1	Cash		340,000	
	Common shares			100,000
	Contributed surplus			240,000
	For Cash: (20,000 × $17)			
	For Common shares: (20,000 × $5)			
	For Contributed surplus: (20,000 × ($17 − $5))			
Jun 30	Common shares		50,000	
	Contributed surplus		120,000	
	Retained earnings		20,000	
	Cash			190,000
	For Common shares: (10,000 × $5)			
	For Contributed surplus: (10,000 × ($17 − $5))			
	For Cash: (10,000 × $19)			

Note: The contributed surplus is reduced on a pro-rata basis, as this surplus resulted from a share premium on issue, and not from a previous re-acquisition.

EXERCISE 18–6

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Jan 15	Cash		3,750,000	
	Common shares			3,750,000
	(150,000 × $25)			
Mar 30	Common shares		250,000	
	Contributed surplus			50,000
	Cash			200,000
	For Common shares: (10,000 × $25)			
	For Cash: (10,000 × $20)			
Jul 31	Cash		440,000	
	Common shares			440,000
	(20,000 × $22)			
Oct 31	Common shares		369,375	
	Contributed surplus		50,000	
	Retained earnings		15,625	
	Cash			435,000
	For Common shares: (15,000 × $24.625)			
	For Cash: (15,000 × $29)			

Note: Average issue cost of shares	$= \frac{((150{,}000 - 10{,}000) \times \$25) + (20{,}000 \times \$22)}{160{,}000 \text{ shares}}$
	$= \$24.625$ per share

Also, note that the contributed surplus is fully utilized because it resulted from a previous re-acquisition of the same class of shares. As such, we do not need to allocate it on a pro-rata basis.

EXERCISE 18–7

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 5	Retained earnings		250,000	
	Common shares (100,000 × 10% × $25)			250,000
May 15	Retained earnings		88,000	
	Dividend payable (100,000 × 110% × $0.80)			88,000

May 20 – no journal entry required

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 25	Dividend payable		88,000	
	Cash			88,000
May 27	Retained earnings		660,000	
	Dividend payable (100,000 × 110% × 8 × $0.75)			660,000

May 30 – no journal entry required

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 31	Dividend payable		660,000	
	Inventory (100,000 × 110% × 8 × $0.75)			660,000

EXERCISE 18–8

a.

Calculation		Preferred			Common			Total	
Current year: (50,000 shares × $3)		$	150,000					$	150,000
Balance of dividends			–		$	1,050,000			1,050,000
		$	150,000		$	1,050,000		$	1,200,000

b.

Calculation		Preferred			Common			Total	
Arrears: (50,000 shares × $3 × 2 years)		$	300,000					$	300,000
Current year: (50,000 shares × $3)			150,000						150,000
Balance of dividends			–		$	750,000			750,000
		$	450,000		$	750,000		$	1,200,000

c.

Calculation		Preferred			Common			Total	
Arrears, as before		$	300,000					$	300,000
Current year year basic dividend			150,000		$	240,000			390,000
Current year participating dividend			196,146			313,854			510,000
		$	646,146		$	553,854		$	1,200,000

Note: The basic preferred dividend is calculated as before. Then, a like amount is allocated to the common shares. The preferred dividend can be expressed as a percentage: $150,000 ÷ $5,000,000 = 3% (or $3 ÷ $100). Therefore, the common shares are also allocated a basic dividend of (3% × $8,000,000) = $240,000. This leaves a remaining dividend of $510,000, which is available for participation. The participation is allocated on a pro-rata basis as follows:

Carrying amounts of each class:

Preferred		$	5,000,000		38.46%
Common			8,000,000		61.54%
Total		$	13,000,000		100%

The participating dividend is therefore:

Preferred:	$510,000 × 38.46%	=	$196,146
Common:	$510,000 × 61.54%	=	$313,854

EXERCISE 18–9

a. Implied value of the company before the dividend:

5,000,000 shares × $12 = $60,000,000

50% share dividend would issue an additional $5{,}000{,}000 \times 50\% = 2{,}500{,}000$ shares

The ex-dividend price should be $\$60{,}000{,}000 \div 7{,}500{,}000 = \$8$ per share

A 3-for-2 share split results in the same number of shares being issued as above, making the share price $8.

b. For the 50% share dividend, the dividend amount will be calculated as $2{,}500{,}000 \times \$8 = \$20{,}000{,}000$

Common shares		$	32,500,000
Retained earnings			22,000,000
Total equity		$	54,500,000

A 3-for-2 share split has no effect on the accounts, as it simply increases the number of outstanding shares. Therefore, the equity section will appear as follows:

Common shares		$	12,500,000
Retained earnings			42,000,000
Total equity		$	54,500,000

c. Either action will result in the share price dropping to $8 per share from $12. However, the total reported equity will not change as it's just a question of how the deck will be shuffled, so to speak, in the equity section. The decision will depend on both the legal framework in the company's jurisdiction and the corporate objectives of the distribution. There may be legal restrictions and tax implications, with respect to the share dividend, which would make the share split easier to implement. On the other hand, if the directors would like to capitalize some of the retained earnings to potentially reduce future shareholder demands for dividends, then the share dividend would be the better approach. The directors will also have to consider if the shareholder response will be different for each scenario. The directors should also consider if there are any other contracts or agreements, such as loan covenants, that would be affected by the decision.

EXERCISE 18–10

a.

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Cash		45,000	
	Common shares			45,000
	Common shares		81,250	
	Contributed surplus		7,000	
	Retained earnings		51,750	
	Cash			140,000

Average issue price = $(\$280{,}000 + \$45{,}000) \div (35{,}000 + 5{,}000) = \$8.125$

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Retained earnings		48,000	
	Dividend distributable			48,000
	$((35{,}000 + 5{,}000 - 10{,}000) \times 10\% \times \$16)$			
	Dividend distributable		48,000	
	Common shares			48,000
	Land		19,000	
	Preferred shares			19,000
	Retained earnings		44,000	
	Cash			44,000

Preferred dividend: $(4{,}500 + 1{,}000) \times \$2 = \$11{,}000$
Common dividend: $(35{,}000 + 5{,}000 - 10{,}000 + 3{,}000) \times \$1 = \$33{,}000$

b.

Ocampo Inc.
Statement of Changes in Shareholders' Equity
Year Ended 31 December 2022

	Total	Preferred Shares	Common Shares	Contributed Surplus	Retained Earnings	Accumulated Other Comp. Income
Balance on January 1	$ 1,217,000	$ 225,000	$ 280,000	$ 7,000	$ 590,000	$ 115,000
Comprehensive Income:						
Net income	120,000				120,000	
Revaluation	23,000					23,000
Total comprehensive income	143,000					
Shares issued	64,000	19,000	45,000			
Shares retired	(140,000)		(81,250)	(7,000)	(51,750)	
Cash dividend – common	(33,000)				(33,000)	
Cash dividend – preferred	(11,000)				(11,000)	
Share dividend – common	–		48,000		(48,000)	
Balance on December 31	$ 1,240,000	$ 244,000	$ 291,750	–	$ 566,250	$ 138,000

Note: Additional details of the transactions and the authorized and issued shares would be contained in the notes to the financial statements.

EXERCISE 18–11

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jan 15	Cash		130,000	
	Treasury shares			110,000
	Contributed surplus			20,000

Note: Treasury shares were acquired at a price of $\$440{,}000 \div 40{,}000 = \$11$ per share. This is the price used to remove the treasury shares on resale.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Feb 28	Common shares		760,000	
	Cash			705,000
	Contributed surplus			55,000

Average issue price = $\$3{,}800{,}000 \div 250{,}000 = \$15.20$ per share

$50{,}000 \times \$15.20 = \$760{,}000$

General Journal

Date	Account/Explanation	PR	Debit	Credit
Jun 30	Preferred shares		625,000	
	Retained earnings		150,000	
	Cash			775,000

Average issue price = $\$1{,}875{,}000 \div 75{,}000 = \$25$ per share

$25{,}000 \times \$25 = \$625{,}000$

There is no contributed surplus balance associated with preferred share re-acquisitions, so the full difference is charged to retained earnings.

General Journal

Date	Account/Explanation	PR	Debit	Credit
Dec 31	Retained earnings		294,500	
	Common shares			144,500
	Cash			150,000

Common dividend: $(250{,}000 - 30{,}000 - 50{,}000) \times 5\% \times \$17 = \$144{,}500$

Note: The shares remaining in treasury are excluded from the dividend calculation, as the company cannot pay itself a dividend. The company's issued share capital includes the treasury shares, although they are not outstanding.

Preferred dividend: $(75{,}000 - 25{,}000) \times \$1 \times 3 \text{ years} = \$150{,}000$

Note: This calculation assumes that the cumulative, unpaid dividend on the retired preferred shares was not paid. Depending on the articles of incorporation and local legislation, the cumulative, unpaid dividend may need to be paid prior to retirement of the shares. This would result in an additional dividend of $50,000 ($25{,}000 \times \$1 \times 2$) paid on the date of retirement.

Chapter 19 Exercises

EXERCISE 19–1

a. Basic earnings per share calculation:

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting. An event is where the outstanding number of shares changes.

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event point when it initially occurs and backwards to the beginning of the fiscal year.

Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Sha Outstanc ×Factc ×Fracti of the Y
2021						
1	Jan 1	Opening balance	100,000	2 × 1.15	2/12	38,
	Jan 1 – Mar 1					
2	Mar 1	6,000 shares issued	6,000			
	Mar 1 – Jul 1		106,000	2 × 1.15	4/12	81,
3	Jul 1	retired 2,000 shares	(2,000)			
	Jul 1 – Oct 1		104,000	2× 1.15	3/12	59,
4	Oct 1	15% stock dividend	×1.15			
	Oct 1 – Dec 1		119,600	2×	2/12	39,
5	Dec 1	10,000 shares issued	10,000			
	Dec 1 – Dec 31		129,600	2×*	1/12	21,
6	Subsequent event	Stock split 2-for-1	×2			
	Total WACS		259,200		12/12	240,

*Work restatements backwards to the beginning of the year

	Income	WACS		Basic EPS	
Net income from continuing operations					
($310,000 + (35,000 × 0.75))	$336,250				
Less preferred dividends	0				
Net income available to common shareholders	$336,250		240,865		$1.40

Disclosures:

Earnings per share:			Basic
Income from continuing operations		$	1.40
Loss from discontinued operations, net of tax*			(0.11)
Net income		$	1.29

$* \$35{,}000 \times (1 - 0.25) = 26{,}250 \div 240{,}865$

b. Common shareholders need to know how much of a company's available income can be attributed to the shares they own. This helps them assess future dividend payouts and the value of each share. Earnings per share (EPS) becomes a per share way of describing net income, making EPS a good metric for shareholders and investors. When the income statement reports discontinued operations, EPS should be disclosed for income from continuing operations, discontinued operations, and net income. These disclosures make it possible for shareholders and potential investors to know the specific impact of income from continuing operations on earnings per share, as opposed to a single EPS number, that includes income or loss from non-continuing operations not expected to continue.

c. EPS is used in the calculation of the price earnings ratio ($\text{market price of shares} \div \text{EPS}$), which compares the market price of the company's shares with income generated on a per-share basis. Market price of the company's shares will generally adjust after issuance of a stock dividend or a stock split. For the calculation of price earnings ratio to remain valid after a stock dividend or stock split, EPS should also be adjusted in the company's financial statements to assume that the additional shares have been outstanding since the beginning of the year in which the stock dividend or stock split occurred.

EXERCISE 19–2

Step 1: Record the opening balance of shares outstanding and each subsequent event, date, description, and number of shares for the current reporting. An event is where the outstanding number of shares changes.

Step 2: For stock dividends or stock splits, apply the required retroactive restatement factor(s) from the event point it when initially occurs and backwards to the beginning of the fiscal year.

Step 3: For each event, complete the duration between events under the date column and complete the corresponding fraction of the year column accordingly. Multiply the shares outstanding times the retroactive restatement factor(s) times the fraction of the year for each event. Sum the amounts to determine the WACS amount.

a.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year ×Fraction	Total Shares Outstanding ×Factor of the Year	
2021							
1	Jan 1	Opening balance	475,000	1.1	4/12		174,167
	Jan 1 – May 1						
2	May 1	25,000 shares issued	25,000				
	May 1 – Jul 1		500,000	1.1	2/12		91,667
3	Jul 1	10% stock dividend	×1.1				
	Jul 1 – Oct 1		550,000		3/12		137,500
4	Oct 1	Repurchased	(15,000)				
	Oct 1 – Dec 31	15,000 shares	535,500		3/12		133,750
	Total WACS		535,500		12/12		537,084

b.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year ×Fraction	Total Shares Outstanding ×Factor of the Year	
2021							
1	Jan 1	Opening balance	475,000	0.2	4/12		31,667
	Jan 1 – May 1						
2	May 1	25,000 shares issued	25,000				
	May 1 – Jul 1		500,000	0.2	2/12		16,667
3	Jul 1	1:5 reverse stock	×0.2				
	Jul 1 – Oct 1	split (1 ÷ 5 = 0.2)	(400,000)				
			100,000		3/12		25,000
4	Oct 1	Repurchased	(15,000)				
	Oct 1 – Dec 31	15,000 shares	85,000		3/12		21,250
	Total WACS		85,000		12/12		94,584

EXERCISE 19–3

a.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year ×Fraction	Total Shares Outstanding ×Factor of the Year	
2021							
1	Jan 1	Opening balance	500,000	3 × 1.1	1/12		137,500
	Jan 1 – Feb 1						
2	Feb 1	180,000 shares issued	180,000				
	Feb 1 – Mar 1		680,000	3 × 1.1	1/12		187,000
3	Mar 1	10% stock dividend	×1.1				
	Mar 1 – May 1		748,000	3×	2/12		374,000
4	May 1	Repurchased	(200,000)				
	May 1 – Jun 1	200,000 shares	548,000	3×	1/12		137,000
5	Jun 1	3-for-1 stock split	×3				
	Jun 1 – Oct 1		1,644,000		4/12		548,000
6	Oct 1	60,000 shares issued	60,000				
	Oct 1 – Dec 31		1,704,000		3/12		426,000
	Total WACS		1,704,000		12/12		1,809,500

b. Earnings per share:

$\frac{\$3,500,000 - 0}{1,809,500}$ (declared dividend for non-cumulative preferred shares)

EPS = $1.93

c. Earnings per share:

$\frac{\$3,500,000 - (100,000 \times \$100 \times 8\%)}{1,809,500}$ (dividend entitlement for non-cumulative preferred shares)

EPS = $1.49

d. Earnings per share:

EPS				
Income from continuing operations		$	2.17	
Discontinued operations, net of tax*			(0.24)	
Net income		$	1.93	from part (b)

* ($432,000 ÷ 1,809,500)

e. The earnings process occurs continuously throughout the fiscal year and the capital basis can fluctuate during that time. It is, therefore, necessary to adjust the denominator of the EPS ratio to reflect the various lengths of time during the year that the different amounts of capital from the different number of shares outstanding were available to generate earnings during the year.

EXERCISE 19–4

a. Basic earnings per share = $385,000 ÷ 700,000 = $0.55

Bonds interest saved $757,232 × 6% × (1 − 0.25) × 6 ÷ 12 = $17,038

Additional shares $800,000 ÷ $1,000 × 100 × 6 ÷ 12 = 40,000 shares

Individual effect 17,038 ÷ 40,000 = $0.43 therefore, dilutive

Diluted EPS = ($385,000 + 17,038) ÷ (700,000 + 40,000) = 0.5433 = $0.54

Required disclosures:

Basic EPS $0.55

Diluted EPS $0.54

b. Earnings per share = $280,000 ÷ 700,000 = $0.40

Bonds interest saved $757,232 × 6% × (1 − 0.25) × 6 ÷ 12 = $17,038

Additional shares $800,000 ÷ $1,000 × 100 × 6 ÷ 12 = 40,000 shares

Individual effect 17,038 ÷ 40,000 = $0.43 therefore, anti-dilutive

Required disclosures:

Basic and diluted EPS $0.40

Note that the company has convertible bonds, which means that it has a complex capital structure. This requires both basic and diluted EPS to be reported, even if they are the same amount.

EXERCISE 19–5

a. Follow the three steps identified earlier in the chapter to calculate the WACS in the schedule below:

Event	**Date**	**Description**	**Shares Outstanding**	**Retroactive Restatement Factor(s)**	**Fraction of the Year**	**Total Shares Outstanding ×Factor ×Fraction of the Year**	
2021							
1	Jan 1	Opening balance	550,000	×2	2/12		183,333
	Jan 1 – Mar 1						
2	Mar 1	Issued shares	50,000				
	Mar 1 – Jun 1		600,000	×2	3/12		300,000
3	Jun 1	Repurchased shares	(100,000)				
	Jun 1 – Aug 1		500,000	×2	2/12		166,667
4	Aug 1	2-for-1 stock split	×2				
	Aug 1 – Dec 31		1,000,000		5/12		416,667
	Total WACS				12/12		1,066,667

Basic EPS = ($4,500,000 − 240,000)* ÷ 1,066,667 = $3.99

*(40,000 × $6) = $240,000

Note that the preferred shares are not convertible, so this company has a simple capital structure and needs only report its basic EPS.

b. The basic EPS will remain the same as the amount calculated in part (a). This is because the preferred shares are cumulative, so the dividend entitlement amount would be used to reduce the income available to common shareholders. For this reason, any dividends in arrears will not be included, since they would have already been included in the previous

years' respective EPS calculations. To include dividends in arrears for cumulative preferred shares in 2021 would be, in effect, double counting.

c. The basic EPS will be the same amount as calculated in part (a). If the preferred shares are non-cumulative, only dividends that are declared are deducted from net income. Since they are paid up to date, they will be the same amount as the dividend amount used in part (a), making the EPS calculation the same.

d. If the preferred shares are non-cumulative, only dividends declared would be used in the numerator to reduce net income available to common shareholders. In this case, no dividends were declared in 2021, so the calculation would be:
Basic EPS = ($4,500,000) ÷ 1,066,667 = $4.22

e. A stock split, which only increases the number of shares outstanding, will result in a decreased market price per share, making the shares more affordable to potential investors. If the company's shares are made more affordable to potential investors, the shares may become more marketable, causing an increase in the market value because of the stock split.

f. The weighted average number of shares outstanding provides the correct basis for EPS to be reported because the number of common shares outstanding throughout the year can fluctuate due to various in-year capital transactions. When stock dividends or stock splits occur, a restatement of the weighted average number of shares to the beginning of the year must be made. This is done to allow valid comparisons can be made between periods before and after the stock dividend or stock split.

EXERCISE 19–6

a. This company has a complex capital structure because it has options that can potentially be converted into common shares. Both basic and diluted EPS are required to be disclosed, even if the amounts are the same.

b. Basic EPS = $350,000 ÷ 200,000 = $1.75

* Additional common shares using the treasury method:

Shares purchased		45,000	
Less shares retired (45,000 × $10) ÷ $11		(40,909)	
Net additional shares		4,091	shares

Note: A quick way to calculate the net additional common shares due to options (treasury method) is:

45,000 options × (($11 − $10) ÷ $11) = 4,091 additional shares

Required disclosures:

Basic EPS		$	1.75
Diluted EPS		$	1.71

c. Basic EPS = $350,000 ÷ 200,000 = $1.75

Options are not in the money because the market price is $9, and the exercise price is $10. Options holders would not be motivated to purchase any common shares using their options because they can buy them directly from the market at a lower price.

Required disclosures:

Basic and diluted EPS		$	1.75

EXERCISE 19–7

a. There will be no incremental shares in this case as these options are anti-dilutive. Recall that only an increase in additional shares will be dilutive since the net income (numerator) will remain unchanged. If call options have an exercise price ($10) that is lower than the market price ($13), these options will be anti-dilutive, as fewer shares will need to be issued (at $13) in order to obtain sufficient cash to exercise the options to purchase the 20,000 shares at $10. The net result would be a reduction of 4,615 outstanding shares, making these options anti-dilutive as calculated below:

Shares issued at $13 to obtain $200,000	15,385 increase
Using proceeds to exercise options at $10 per share	20,000 reduction

As this results in a net reduction of 4,615 common shares, these options are considered anti-dilutive and would be excluded from the diluted EPS calculation.

b.

Proceeds required to exercise options (20,000 × $14)	$280,000
Shares issued at $13 to obtain $280,000	21,538 increase
Using proceeds to exercise options at $14 per share	20,000 reduction

There is a net increase of 1,538 common shares, making this dilutive. The diluted EPS calculation would include the additional 1,538 common shares.

If the exercise price is $12 instead of $14:

Proceeds required to exercise options (20,000 × $12)	$240,000
Shares issued at $13 to obtain $240,000	18,462 increase
Using proceeds to exercise options at $12 per share	20,000 reduction

There is a net decrease of 1,538 common shares, making this anti-dilutive and, therefore, excluded from the diluted EPS calculation.

c. The company would not exercise the option to sell its common shares for $11 because the option price per share of $11 is lower than the market price of $13. These are, therefore, not dilutive.

EXERCISE 19–8

a. Basic EPS = $400,000 − 10,000* ÷ 60,000 = $6.50

This company has a complex capital structure due to the convertible securities. As a result, diluted EPS is also required to be calculated and reported.

Individual effects:

4% convertible bonds:

Interest saved $97,277 × 5% × (1 − 0.24)	$3,697
Additional shares ($100,000 ÷ $1,000) × 25	2,500 shares

Individual EPS effects = $3,697 ÷ 2,500 = $1.48 (therefore dilutive)

$20, convertible preferred shares:

Dividends saved	$10,000
Additional shares (500 preferred shares × 10)	5,000

Individual EPS effects = $10,000 ÷ 5,000 = $2.00 (therefore dilutive)

Ranking:	Convertible bonds	$1.48	#1
	Preferred shares	$2.00	#2

	Income (Numerator)	**Number of Shares (Denominator)**	**Individual EPS Effect**
Basic EPS	$390,000	60,000	$6.50
4% bonds – Interest saved	3,697		
Additional shares		2,500	
Subtotal	393,697	62,500	6.30
$20 convertible preferred shares	10,000		
Additional shares ($250,000 ÷ $20) × 7 ÷ 12		5,000	
Diluted EPS	403,697	67,500	$5.98

Required disclosures:

Basic EPS		$	6.50
Diluted EPS		$	5.98

b. Discontinued operations gain before tax $20,000

Discontinued operations gain, net of tax ($20,000 − (1 − 0.24)) = $15,200
Net income from continuing operations = $400,000 − $15,200 = $384,800
Basic EPS, continuing operations = $384,800 − 10,000 ÷ 60,000 = $6.25

Both the bonds and preferred shares remain dilutive with the same ranking as in part (a) as they continue to be less than the basic EPS from continuing operations for $6.25, and their individual EPS effects have not changed.

	Income (Numerator)	**Number of Shares (Denominator)**	**Individual EPS Effect**
Basic EPS (from continuing operations)	$374,800	60,000	$6.25
4% bonds – Interest saved	3,697		
Additional shares		2,500	
Subtotal	378,497	62,500	6.06
$20 convertible preferred shares			
Dividends saved	10,000		
Additional shares		5,000	
Diluted EPS	388,497	67,500	$5.76

Required disclosures:

		Basic			Diluted	
Income from continuing operations		$	6.25		$	5.76
Discontinued operations gain, net of tax*			0.25			0.23
Net income		$	6.50		$	5.99

* Basic ($15,200 ÷ 60,000); Diluted ($15,200 ÷ 67,500)

EXERCISE 19–9

Event	Date	Description	Shares	Retroactive	Fraction	Total Shares	
			Outstanding	Restatement	of the	Outstanding	
				Factor(s)	Year	×Factor	
						×Fraction	
2021						of the Year	
1	Jan 1	Opening balance	70,000	×1.1	2/12		12,833
	Jan 1 – Mar 1						
2	Mar 1	Issued shares	30,000				
	Mar 1 – Jun 1		100,000	×1.1	3/12		27,500
3	Jun 1	10% stock dividend	10,000				
	Jun 1 – Nov 1		110,000		5/12		45,833
4	Nov 1	Repurchase					
	Nov 1 – Dec 31	common shares	(20,000)		2/12		15,000
	Total WACS		90,000		12/12		101,166

Basic EPS = $350,000 − 2,000* ÷ 101,166 = $3.44

* ($2 × 1,000)

This company has convertible bonds and preferred shares, so its capital structure is complex and, therefore, requires calculation and disclosure of diluted EPS.

Individual effects:

Options:		
At an exercise price of $16, they are in the money.		
Additional shares issued	10,000	
Shares retired (10,000 × $16 = $160,000 ÷ $18) =	8,889	
Net additional shares	1,111	dilutive

6%, convertible bonds:	
Interest saved ($80,000 × 0.06 × (1 − 0.25) × 8 ÷ 12)	$2,400
Additional common shares (8,000 × 8 ÷ 12)	5,333
Individual EPS effect = $2,400 ÷ 5,333 = $0.45 (therefore dilutive)	

$2, convertible preferred shares:	
Dividends saved ($2 × 1,000)	$2,000
Additional shares	10,000
Individual EPS effect $2,000 ÷ 10,000 = $0.20 (therefore dilutive)	

Ranking: Most to least dilutive

#1 Options	– no income effect
	– 1,111 shares

#2 Preferred shares	– income effect – $2,000
	– 10,000 shares

#3 Bonds – income effect	– $2,400
	– 5,333 shares

	Income (Numerator)	**Number of Shares (Denominator)**	**Individual EPS Effect**
Basic EPS (from continuing operations)	$348,000	101,166	$3.44
Options		1,111	
Subtotal	348,000	102,277	3.40
Preferred shares	2,000	10,000	
Subtotal	350,000	112,277	3.12
Bonds	2,400	5,333	
Diluted EPS	$352,400	117,610	$3.00

None of the securities failed to remain dilutive so all of them will remain in the diluted EPS calculation.

Disclosures:

Basic EPS		$	3.44
Diluted EPS		$	3.00

Chapter 20 Exercises

EXERCISE 20–1

Description	Section	Cash Flow
		In (Out)
Issue of bonds payable of $500 cash	Financing	500
Sale of land and building of $60,000 cash	Investing	60,000
Retirement of bonds payable of $20,000 cash	Financing	(20,000)
Redemption of preferred shares classified as debt of $10,000	Financing	(10,000)
Current portion of long-term debt changed from $56,000 to $50,000	Financing	*
Repurchase of company's own shares of $120,000 cash	Financing	(120,000)
Amortization of a bond discount of $500	Operating	Add $500 to net income
Issuance of common shares of $80,000 cash	Financing	80,000
Payment of cash dividend of $25,000 recorded to retained earnings	Financing	(25,000)
Purchase of land of $60,000 cash and a $100,000 note (the note would be a non-cash transaction that is not directly reported within the body of the SCF but requires disclosure in the notes to the SCF)	Investing	(60,000)
Cash dividends received from a trading investment of $5,000	Operating	5,000
Increase in an available for sale investment due to appreciation in the market price of $10,000	None – non-cash gain through OCI	–
Interest income received in cash from an investment of $2,000	Operating	2,000
Leased new equipment under an operating lease for $12,000 per year	Operating	Already in net income
Interest and finance charges paid of $15,000	Operating	(15,000)
Purchase of equipment of $32,000	Investing	(32,000)
Increase in accounts receivable of $75,000	Operating	(75,000)
Leased new equipment under a finance lease with a present value of $40,000	None – non-cash	–
Purchase of 5% of the common shares of a supplier company for $30,000 cash	Investing	(30,000)
Decrease in a sales related short term note payable of $10,000	Operating	(10,000)
Made the annual contribution to the employee's pension benefit plan for $220,000	Operating	(220,000)
Increase in income taxes payable of $3,000	Operating	3,000
Purchase of equipment in exchange for a $14,000 long-term note	None – non-cash	–

* The current portion of long-term debt for both years would be added to their respective long-term debt payable accounts and reported as a single line item in the financing section.

EXERCISE 20–2

a.

Rorrow Ltd.
Balance Sheet
as at December 31, 2020

	2020	2019	Total W/C accounts except Cash*		Net Change
Current assets					
Cash	$ 152,975	$ 86,000			
Accounts receivable (net)	321,640	239,080			
Inventory	801,410	855,700	1,160,890	1,124,880	(36,010)
Prepaid insurance expenses	37,840	30,100			
Equipment	2,564,950	2,156,450			
Accumulated depreciation, equipment	(625,220)	(524,600)			
Total assets	$3,253,595	$2,842,730			
Current liabilities					
Accounts payable	$ 478,900	$ 494,500			
Salaries and wages payable	312,300	309,600	897,410	901,280	(3,870)
Accrued interest payable	106,210	97,180			
Bonds payable, due July 31, 2028	322,500	430,000			
Common shares	1,509,300	1,204,000			
Retained earnings	524,385	307,450			
Total liabilities and shareholders' equity	$3,253,595	2,842,730		Net change	(39,880)

* exclude current portion of long-term debt as this account is not a working capital account

Rorrow Ltd.
Income Statement
For the year ended December 31, 2020

Sales	$ 5,258,246
Expenses	
Cost of goods sold	3,150,180
Salaries and benefits expense	754,186
Depreciation expense	100,620
Interest expense	258,129
Insurance expense	95,976
Income tax expense	253,098
	4,612,189
Net income	$ 646,057

Rorrow Ltd.
SCF – Direct Method Worksheet

	I/S Accounts	Changes to Working Capital Accounts	Net Cash Flow In (Out)
Cash received from sales	$ 5,258,246	$ (82,560)	$ 5,175,686
Cash paid for goods and services	(3,150,180)	54,290	
	(95,976)	(7,740)	
		(15,600)	(3,215,206)
Cash paid to or on behalf of employees	(754,186)	2,700	(751,486)
Cash paid for interest	(258,129)	9,030	(249,099)
Cash paid for income taxes	(253,098)		(253,098)
Memo items:			
Depreciation expense	(100,620)		
Net cash flows from operating activities	$ 646,057	$ (39,880)	$ 706,797

This amount balances to net change in W/C accounts shown above

•

Rorrow Ltd.			
Statement of Cash Flows – Operating Activities			
For the Year Ended December 31, 2020			
Cash flows from operating activities			
Cash received from sales		$	5,175,686
Cash paid for goods and services			3,215,206
Cash paid to or on behalf of employees			751,486
Cash paid for interest			249,099
Cash paid for income taxes			253,098
Net cash flows from operating activities		$	706,797

EXERCISE 20–3

a.

Carmel Corp.						
Statement of Cash Flows						
For the Year Ended December 31, 2021						
Cash flows from operating activities						
Net income					$	105,000
Adjustments for non-cash revenue and expense						
items in the income statement:						
Depreciation expense		$	48,000			
Gain on sale of investments			(2,200)			
Loss on sale of building			5,000			
Decrease in investments – trading			136,600			
Increase in accounts receivable						
($109,040 – $89,040)			(20,000)			
Decrease in accounts payable						
($146,000 – $55,200)			(90,800)			76,600
Net cash from operating activities						181,600
Cash flows from investing activities						
Proceeds from sale of building						
($225,000 – $5,000)			220,000			
Purchase of land			(220,000)			
Net cash from investing activities						0
Cash flows from financing activities						
Reduction in long-term mortgage principal			(30,000)			
Issuance of common shares			20,000			
Payment of cash dividends			(8,000)			
Net cash from financing activities						(18,000)
Net increase in cash						163,600
Cash at beginning of year						84,000
Cash at end of year					$	247,600

Supplemental Disclosures:

1. The purchase of equipment through the issuance of $50,000 of common shares is a significant non-cash financing transaction that would be disclosed in the notes to the financial

statements.

Cash paid interest		$	35,000

2. Note: Had there been cash paid income taxes, this would also be disclosed.

b. Free cash flow:

Net cash from operating activities		$	181,600
Capital expenditures – land			(220,000)
Cash paid dividends			(8,000)
Free cash flow		$	(46,400)

In the analysis of Carmel's free cash flow above, we see that it is negative. While including dividends paid is optional, it would not have made a difference in this case. What does make a difference, however, is that the capital expenditures are those needed to sustain the current level of operations. In the case of Carmel Corp., the land was purchased for investment purposes, and not to meet operational requirements. With this in mind, the free cash flow would more accurately be:

Net cash from operating activities		$	181,600
Capital purchases			0
Cash paid dividends			(8,000)
Free cash flow		$	173,600

This makes intuitive sense and it is supported by the results from one of the coverage ratios.

The current cash debt coverage provides information about how well Carmel Corp. can cover its current liabilities from its net cash flows from operations:

$$\frac{\text{Net cash from operating activities}}{\text{Average current liabilities}}$$

Carmel Corp.'s current cash debt coverage is 1.38 ($\$181{,}600 \div ((87{,}200 + 176{,}000) \times 50\%)$). The company has adequate cash flows to cover its current liabilities as they come due and so, overall, its financial flexibility looks positive.

In terms of cash flow patterns, we see a positive trend, as Carmel Corp. has managed to more than triple its cash balance in the year, mainly from cash generated from operating activities. They were able to pay $8,000 in dividends, or a 1.7% return. And if dividends are paid several times throughout the year, then the return is more than adequate for investors. Carmel Corp. also sold off its traded investments for a profit, and some idle buildings at a small loss, to obtain sufficient internal funding for some land that they want to purchase as an investment. They also managed to lower their accounts payable levels by close to 60%. All of this supports the assessment that Carmel Corp.'s financial flexibility looks reasonable.

c. The information reported in the statement of cash flows is useful for assessing the amount, timing, and uncertainty of future cash flows. The statement identifies the specific cash inflows and outflows from operating activities, investing activities, and financing activities. This gives stakeholders a better understanding of the liquidity and financial flexibility of the enterprise. Some stakeholders have concerns about the quality of the earnings because of the variety and subjectivity of the bases that can be used to record accruals and estimates. As a result, the higher the ratio of cash provided by operating activities to net income, the more stakeholders can rely on the earnings reported.

EXERCISE 20–4

Lambrinetta Industries Ltd.						
Statement of Cash Flows						
Year Ended December 31, 2021						
Cash flows from operating activities						
Net income					$	161,500
Changes and Adjustments						
Depreciation expense*		$	25,500			
Change in A/R			27,200			
Change in A/P			11,900			
Change in investments, trading			(6,800)			
						57,800
Net cash from operating activities						219,300
Cash flows from investing activities						
Sold plant assets			37,400			
Purchase plant assets**			(130,900)			
Net cash from investing activities						(93,500)
Cash flows from financing activities						
Note issued***			42,500			
Shares issued for cash						
(81,600 + 37,400 in exch for land – 130,900 ending balance)			11,900			
Cash dividends paid****			(188,700)			
Net cash from financing activities						(134,300)
Net decrease in cash						(8,500)
Cash at beginning of year						40,800
Cash at end of year					$	32,300

* $136,000 – $13,600 – $147,900
** $345,100 – $51,000 – $425,000
*** $75,000 + $10,000 – $119,500 – $8,000
**** $314,500 + $161,500 – $287,300

Disclosures:

Additional land for $37,400 was acquired in exchange for issuing additional common shares.

EXERCISE 20–5

a.

Egglestone Vibe Inc.						
Statement of Cash Flows						
For the Year Ended December 31, 2021						
Cash flows from operating activities						
Net income					$	24,700
Adjustments to reconcile net income to						
net cash provided by operating activities						
Depreciation expense (note 1)		$	55,900			
Loss on sale of equipment (note 2)			10,100			
Gain on sale of land (note 3)			(38,200)			
Impairment loss – goodwill			63,700			
Increase in accounts receivable			(36,400)			
Increase in inventory			(67,600)			
Decrease in accounts payable			(28,200)			(40,700)
Net cash used by operating activities						(16,000)
Cash flows from investing activities						
Purchase of investments – available for sale			(20,000)			
Proceeds from sale of equipment			27,300			
Purchase of land (note 4)			(62,400)			
Proceeds from sale of land			150,000			
Net cash provided by investing activities						94,900
Cash flows used by financing activities						
Payment of cash dividends (note 5)			(42,600)			
Issuance of notes payable			10,500			
Net cash used by financing activities						(32,100)
Net increase in cash						46,800
Cash at beginning of year						37,700
Cash at end of year					$	84,500

General note: During the year, Egglestone Vibe retired $160,000 in notes payable by issuing common shares.

Notes to statements:

1. $111,800 − $15,600 + X = $152,100; X = $55,900
2. $27,300 − ($53,000 − $15,600)
3. $150,000 − $111,800
4. $133,900 − 111,800 + X = $84,500
5. Retained earnings account: $370,200 + $24,700 − X = $374,400; Dividend declared but not paid = $20,500

   Dividends payable account: $41,600 + $20,500 − $19,500 = $42,600 cash paid dividends

b. Negative cash flows from operating activities may signal trouble ahead with regard to Egglestone's daily operations, including profitability of operations and management of its current assets, such as accounts receivable, inventory and accounts payable. All three of these increased the cash outflows over the year. In fact, net cash provided by investing activities funded the net cash used by both operating and financing activities. Specifically, proceeds from sale of equipment and land were used to fund operating and financing activities, which may be cause for concern if the assets sold were used to generate significant revenue. Shareholders did receive cash dividends, but investors may wonder if these payments will be sustainable over the long term. Consider that dividends declared were $20,500, which was quite high compared to the net income of $24,700. In addition, the dividends payable account still had a balance payable of $41,600 from prior dividend declarations not yet paid. This creates increased pressure on the company to find sufficient funds to catch-up with the cash payments owed to investors. Egglestone may not be able to sustain payment of cash dividends of this size in the long-term if improvement of its profitability and management of its receivables, payables, and inventory are not implemented quickly.

EXERCISE 20–6

a. For operating activities, use the steps from earlier in the chapter for the direct method:

   Step 3 – enter all the line items from the income statement to the most appropriate direct method category so that the total matches the income statement.

   Step 4 – enter all the changes to the non-cash working capital accounts (except current portion of LT debt) to the most appropriate direct method category, and use the accounting equation technique to determine if the cash flow change for each account is positive or negative.

Complete the investing and financing sections as usual.

Bognar Ltd.									
Statement of Cash Flows Worksheet – Direct Method									
For the Year Ended December 31, 2020									
	Step 3			Step 4			Step 5		
				Changes to					
				W/C +/- add'l			Net		
Cash flows from operating activites:	I/S Accounts			adjustments			cash flow		
Cash received from sales – Sales		$	1,852,400						
– Accounts receivable					$	(108,000)		$	1,744,400
Cash paid for goods and services – COGS			(1,213,300)						
– Other operating expenses			(342,100)						
– Inventory						(146,000)			
– Accounts payable						(37,300)			(1,738,700)
Cash paid to employees									N/A
Cash received for interest income									0
Cash paid for interest for Bonds payable, net									
of discount ($1,084,250 – 1,089,000) =									
$54,750 non-cash interest expense			(126,500)			54,750*			(71,750)
Cash received for income taxes ($69,300 – 26,400)			59,400			(42,900)**			16,500
Cash received for dividends									0
Memo Items:									
Depreciation			(121,000)						
Depreciation			(82,500)						
Goodwill impairment			(66,000)						
Loss on Held for Trading investments			(32,500)			32,500***			
Gain on sale of land			24,200						
Loss on sale of			(10,800)						

machine									
Net cash flows from operating activities			(58,700)						(49,550)
Cash flows from investing activities:									
Proceeds from sale of land ($430,500 - 363,000 + 24,200 gain)									91,700
Proceeds from sale of building ($1,176,000 - 1,144,000 = 32,000) less accum. depr.									
($399,000 + 121,000 - 517,000) = $3,000 accum. depr. for the sold building									29,000
Sale of machinery									50,000
Purchase of machinery ($918,750 - 125,000 - 1,188,000) = $394,250 less									
$166,000 = $228,250. $166,000 is a non-cash entry in exchange for shares									
($199,500 - 60,000 - 305,500) = $166,000									(228,250)
Net cash flows from investing activities									(57,550)
Cash flows from financing activities:									
Issuance of preferred shares									
($885,150 – $1,152,800)									267,650
Repurchase of common shares									(65,000)
Dividends paid ($326,550 - 5,000 common shares retirement - $58,700 net loss -									

$151,800) = $111,050 dividends for both preferred and common shares.									
Preferred shares dividend is $40,000. Common shares dividend is $71,050.									(111,050)
Net cash flows from financing activities									91,600
Net increase in cash									(15,500)
Cash, opening									21,000
Cash, closing								$	5,500

Supplemental Disclosures:

Cash paid interest and income taxes are already reported as categories in operating activities when using the direct method. Only the non-cash items require supplementary disclosure (below).

Non-cash:

Machinery for $394,250 ($918,750 – $125,000 – $1,188,000) was purchased in exchange for $166,000 in common shares and $228,250 in cash.

Solution Notes: * Bond amortization is a non-cash adjusting entry that affects interest expense in the income statement, therefore net income must be adjusted by $54,750 ($1,089,000 – $1,034,250) bond amounts, net of discount. ** Deferred tax is a non-cash transaction affecting income tax expense in the income statement, therefore net income must be adjusted by $42,900 ($69,300 – $26,400). *** The change in investments held for trading is due to the unrealized loss included in the income statement. This has already been adjusted in step 3, so no further action is required. Memo item only.

b.

Bognar Ltd.			
Statement of Cash Flows			
For the Year Ended December 31, 2020			
Cash flows from operating activities:			
Cash received from sales		$	1,744,400
Cash paid for goods and services			(1,738,700)
Cash paid for interest			(71,750)
Cash received for income taxes			16,500
Net cash flows from operating activities		$	(49,550)

c. Indirect Method

Bognar Ltd.						
Statement of Cash Flows (Indirect method)						
For the Year Ending December 31, 2020						
Cash flows from operating activities:						
Net loss		$	(58,700)			
Non-cash items (adjusted from net income)						
Gain on sale of land			(24,200)			
Depreciation ($121,000 + 82,500)			203,500			
Loss on impairment of goodwill			66,000			
Loss on sale of machine			10,800			
Loss on Held for Trading investment			32,500***			
Interest expense for bond payable			54,750*			
Cash in (out) from operating working capital:						
Increase in accounts receivable			(108,000)			
Increase in inventory			(146,000)			
Decrease in accounts payable			(37,300)			
Decrease in deferred taxes payable			(42,900)**			
Net cash flows from operating activities					$	(49,550)

* Bond amortization is a non-cash adjusting entry that affects interest expense in the income statement and is not included in the adjustments. Net income must, therefore, be adjusted by $54,750 ($1,089,000 – $1,034,250) bond amounts, net of discount. ** Deferred tax is a non-cash transaction affecting income tax expense in the income statement and is not included in the adjustments. Net income must, therefore, be adjusted by $42,900 ($69,300 – $26,400). *** The change in investments held for trading asset account is due to the unrealized loss included in the income statement.

Supplemental Disclosures (Indirect Method):

Interest paid		$	71,750

($126,500 interest expense – bonds payable, net of discount of $54,750 ($1,034,250 – $1,089,000))

Non-cash:

Machinery for $394,250 ($918,750 – $125,000 – $1,188,000) was purchased in exchange for $166,000 in common shares and $228,250 in cash.

EXERCISE 20–7

a. Land – Entry #1

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Land (new)		100,000	
	Cash			5,000
	Land (old)			80,000
	Gain on disposal of land			15,000

Land – Entry #2

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Land		78,000	
	Cash ($98,000 – $100,000 + $80,000)			78,000

Equipment – Entry #1

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation, equipment		15,000	
	Cash		2,000	
	Equipment			15,000
	Gain on sale of equipment			2,000

Equipment – Entry #2

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation, equipment		2,800	
	Loss on disposal of equipment		1,200	
	Equipment			4,000

Equipment – Entry #3

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Equipment		9,000	
	Cash			9,000
	($60,000 + $15,000 + $4,000 – $70,000)			

Equipment – Entry #4

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Depreciation expense		4,400	
	Accumulated depreciation, equipment			4,400
	($6,600 – $20,000 + $15,000 + $2,800)			

Lease – Entry #1

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Equipment under lease		99,854	
	Obligations under lease			99,854
	PV = 20,000 PMT/AD, 8 I/Y, 6 N = $99,854			

Lease - Entry #2

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Obligations under lease		20,000	
	Cash			20,000

Lease – Entry #3

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Interest expense		3,194	
	Interest payable			3,194
	(($99,854 – $20,000) × 8% × 6 ÷ 12)			

Lease – Entry #4

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Depreciation expense		8,321	
	Accumulated depreciation, lease			8,321
	($99,854 ÷ 6 years × 6 ÷ 12)			

b.

Investing activities:			
Payment on exchange of land			(5,000)
Purchase of land			(78,000)
Proceeds from sale of equipment			2,000
Purchase of equipment			(9,000)
Financing activities:			
Payment on capital lease			(20,000)

c.

Partial statement of cash flows – indirect method			
Cash flows from operating activities:			
Net income			N/A
Non-cash items (adjusted from net income):			
Gain on disposal of land			(15,000)
Gain on sale of equipment			2,000
Loss on disposal of equipment			1,200
Depreciation expense on equipment			4,400
Depreciation expense on leased equipment			8,321
Cash in (out) from operating working capital:			
Increase in interest payable			3,994
Net cash flows from operating activities			N/A

Disclosures:

Interest paid ($3,994 interest expense – $3,994 increase in interest payable)		$	0

Non-cash items:

Land that originally cost $80,000 was exchanged for another tract of land with a fair value of $100,000 and a cash payment of $5,000.

Equipment worth $99,854 was acquired in exchange for a six year capital lease at an annual interest rate of 8%.

EXERCISE 20–8

Aegean Anchors Ltd.			
Statement of Cash Flows (Indirect method)			
For the Year Ended December 31, 2020			
Cash flows from operating activities:			
Net income		$	288,000
Non-cash items (adjusted from net income)			
Depreciation			217,000
Equity in earnings of Vogeller			(26,400)
Loss on sale of equipment			3,000
Cash in (out) from operating working capital:			
Increase in accounts receivable			(95,640)
Decrease in inventory			(51,120)
Decrease in accounts payable			(73,200)
Decrease in income taxes payable			(10,800)
Net cash flows from operating activities			250,840
Cash flows from investing activities:			
Loan to Vancorp Ltd.			(350,000)
Cash payment received from Vancorp Ltd.			48,200
Sale of equipment			50,000
Net cash flows from investing activities			(251,800)
Cash flows from financing activities:			
Cash dividends paid			(102,000)
Net cash flows from financing activities			(102,000)
Net decrease in cash			(102,960)
Cash and cash equivalent, opening			(34,200)
Cash and cash equivalent, closing		$	(137,160)

Disclosures:

Interest paid		$	18,000
Interest received			11,300
Income taxes paid			181,000

Non-cash:

Aegean Anchors acquired equipment in exchange for a financing lease of $324,000. (Interest rate is 8%.)

Cash and cash equivalents:

		2020			2019	
Cash		$	33,960		$	53,280
Bank overdraft			(171,120)			(87,480)
Total cash and cash equivalents		$	(137,160)		$	(34,200)

Chapter 21 Exercises

EXERCISE 21–1

Item	Type of Change
The useful life of a piece of equipment was revised from five years to six years.	**AE**
An accrued litigation liability was adjusted upwards once the lawsuit was concluded.	**AE**
An item was missed in the year-end inventory count.	**E**
The method used to depreciate a factory machine was changed from straight-line to declining balance as it was felt this better reflected the pattern of use.	**AE**
A company adopted the new IFRS for revenue recognition.	**P**
The accrued pension liability was adjusted downwards as the company's actuary had not included one employee group when estimating the remaining service life.	**E**
The allowance for doubtful accounts was adjusted upwards due to current economic conditions.	**AE**
The allowance for doubtful accounts was adjusted downwards because the previous estimate was based on an aged trial balance that classified some outstanding invoices into the wrong aging categories.	**E**
A company changed its inventory cost flow assumption from LIFO to FIFO, as the newly appointed auditors indicated that LIFO was not allowable under IFRS.	**E**
A company began to apply the revaluation model to certain property, plant, and equipment assets, as it was felt this presentation would be more useful to investors.	**P**

EXERCISE 21–2

a. Because the change in the useful life of the copyright is based on the existence of new information and new conditions, this would be a change in estimate and should be treated prospectively by adjusting amortization only for current and future years. The recording of the insurance premium is an accounting error as it should have originally been recorded as a prepaid expense. As such, this error should be accounted for retrospectively, correcting the error in the appropriate period and restating comparative information.

b. Original amortization $= (100{,}000 - 10{,}000) \div 10 \text{ years} = 9{,}000$ per year

NBV at 1 January 2021 $= (100{,}000 - 27{,}000) = 73{,}000$

New rate $= 73{,}000 \div 2 \text{ years} = 36{,}500$ per year

Note: Because the books are still open for 2021, we can correct the error for the current year as well as for the future year. However, the company would have to consider when the conditions changed that led to the estimate revision.

Journal entry:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Amortization expense		36,500	
	Copyright			36,500

The insurance premium should have been reported as a prepaid asset when purchased, and recognized as an expense at $\$1{,}500 \div 12 = \$125$ per month. Thus, for the year ended December 31, 2020, only $\$125 \times 2 = \$250$ should have been expensed. The following adjustment is required to correct this error:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Insurance expense		1,250	
	Retained earnings			1,250

Note that this entry simply moves ten months of the insurance expense from 2020 to 2021. There is no need to adjust the prepaid as the insurance was fully utilized by the end of 2021. However, a comparative balance sheet, if presented, would need to include the prepaid expense of $1,250.

EXERCISE 21–3

In this case, there is both an accounting error and a change in accounting estimate. The error should be corrected first, retrospectively, and then the change in estimate can be applied.

Depreciation as originally calculated: $\$50{,}000 \div 5 \text{ years} = \$10{,}000$ per year

Depreciation should have been: $\$50{,}000 - \$5{,}000 \div 5 \text{ years} = \$9{,}000$ per year

The following journal entry corrects the 2021 accounts:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation		1,000	
	Retained earnings			1,000

The carrying amount is now $\$50{,}000 - \$10{,}000 + \$1{,}000 = \$41{,}000$

As one year has passed, the remaining useful life is now $5 - 1 = 4$ years.

Double declining balance rate $= (1 \div 4) \times 2 = 50\%$.

Therefore, 2022 depreciation will be $\$41{,}000 \times 50\% = \$20{,}500$

Note: Remember that residual values are not used in DDB calculations.

The following journal entry will record current year depreciation:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Depreciation expense		20,500	
	Accumulated depreciation			20,500

EXERCISE 21–4

https://biz.libretexts.org/@go/page/97790

This is an accounting policy change that should be applied retrospectively. It means that the effect of the revaluations on prior years will need to be recorded, as well as the effects on depreciation expense. The changes are summarized below:

Year	Depr. Taken	Carrying Value	Revaluation	Revised Depr.	New CV
2018	25,000	725,000	800,000		800,000
2019	25,000	700,000	800,000	27,586	772,414
2020	25,000	675,000	800,000	27,586	744,828
2021	25,000	650,000	825,000	30,556	794,444

Note: On December 31, 2018, the building is revalued, creating a revaluation surplus of 75,000 ($800{,}000 - 725{,}000$). The revised depreciation is calculated as $800{,}000 \div 29 \text{ years} = 27{,}586$. This depreciation rate is used for 2019 and 2020. On December 31, 2020, the building is revalued creating a valuation surplus of 80,172 ($825{,}000 - 744{,}828$). The new depreciation rate to be used for 2021 and 2022 is $825{,}000 \div 27 \text{ years} = 30{,}556$.

On January 1, 2022, the total depreciation actually recorded is $100,000 ($25{,}000 \times 4$). Total depreciation that would have been recorded under the revaluation model is $110,728 ($25{,}000 + 27{,}586 + 27{,}586 + 30{,}556$). The additional depreciation of 10,728 ($110{,}728 - 100{,}000$) needs to be adjusted to retained earnings. As well, the two revaluation surplus amounts 155,172 ($80{,}172 + 75{,}000$) need to be reflected in the revaluation surplus account.

The following journal entry adjusts the opening balances on January 1, 2022:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Retained earnings		10,728	
	Building		75,000	
	Accumulated depreciation		69,444	
	Revaluation surplus (OCI)			155,172

Note: Remember that when using the revaluation model, previous accumulated depreciation amounts are eliminated when a revaluation occurs. Thus, the accumulated depreciation on December 31, 2021, would be $30,556, so the adjustment needs to be 69,444 ($100{,}000 - 30{,}556$). The building cost adjustment is based on the revised value (825,000) less the original cost recorded (750,000). This solution also assumes that there is no reclassification of OCI to retained earnings, as this is an optional treatment.

In 2022, the depreciation would be recorded as follows:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Depreciation expense		30,556	
	Accumulated depreciation			30,556

When the revaluation occurs on December 31, 2022, previous accumulated depreciation (the prior two years) is reversed and the revaluation is recorded:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation		61,112	
	Building			61,112

The carrying value of the building, prior to revaluation, is 763,888 ($825{,}000 - 61{,}112$).

The entry to record the revaluation on December 31, 2022, is:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Revaluation surplus (OCI)		23,888	
	Building			23,888

This will reduce the carrying value of the building to $740,000.

EXERCISE 21–5

a. This is an accounting policy change that should be applied retrospectively. The following journal entry is required on January 1, 2021, to reflect the adjustment:

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Inventory (opening)*		70,000	
	Retained earnings			49,000
	Income taxes payable			21,000

* The account used here will depend on whether the company uses a perpetual or periodic inventory system. With a periodic system, opening inventory is adjusted. With a perpetual system, cost of sales would be adjusted.

Note: Only the effect in 2020 needs to be considered. Inventory adjustments are self-correcting over a two-year period, so only the difference in the 2020 ending inventory needs to be adjusted.

b. The comparative column (2020) of the retained earnings statement would look like this:

		2020	
		(Restated)	
Opening retained earnings as previously stated		$	1,100,000
Accounting policy change, net of tax of $18,000			42,000
Opening balance, restated			1,142,000
Net income (restated)			282,000
Closing retained earnings		$	1,424,000

The effect on opening retained earnings (i.e., January 1, 2020) reflects the inventory difference on December 31, 2019 (650,000 – 590,000) less tax. The net income for 2020 is calculated as follows:

Income as previously reported		$	275,000
Reversal of 2019 difference, less tax			(42,000)
2020 difference, less tax			49,000
Revised net income		$	282,000

EXERCISE 21–6

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Salaries payable		7,000	
	Salaries expense			7,000
	Miscellaneous revenue		8,000	
	Accumulated depreciation		31,000	
	Vehicle			40,000
	Depreciation expense			5,000
	Retained earnings		6,000	
	Bad debt expense		12,500	
	Allowance for doubtful accounts			12,500

AFDA s/b $1,500,000 × 2%	=	$30,000
Current AFDA balance = $1,750,000 × 1%	=	$17,500
Adjustment required		$12,500

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Inventory		12,000	
	Retained earnings		8,000	
	Cost of sales			20,000

EXERCISE 21–7

Repair Expense Error

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation		2,250	
	Equipment			9,000
	Depreciation expense			1,500
	Retained earnings		8,250	

2021 depreciation recorded = $9,000 ÷ 6 years × 1 ÷ 2 = $750

2022 depreciation recorded = $9,000 ÷ 6 years = $1,500

Accrued Interest Omission

Accrued interest receivable on December 31, 2022 = $150,000 × 8% × 1 ÷ 12 = $1,000

Note: This represents the interest accrued between November 30 and December 31.

As the balance of the interest receivable account is $1,000, no adjustment is required as the balance is already correct.

Land Depreciation Error

Building depreciation as recorded:

2020: $(1{,}000{,}000 - 50{,}000) \div 50 \times \frac{1}{2} =$	$	9,500
2021:	$	19,000
2022:	$	19,000
Total	$	47,500

Building depreciation should be:

2020: $(750{,}000 - 50{,}000) \div 50 \times \frac{1}{2} =$	$	7,000
2021:	$	14,000
2022:	$	14,000
Total	$	35,000

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Land		250,000	
	Building			250,000
	Accumulated depreciation		12,500	
	Depreciation expense			5,000
	Retained earnings			7,500

Note: Adjustment to accumulated depreciation is 12,500 (35,000 – 47,500), which is allocated to depreciation expense (14,000 – 19,000 = 5,000) for the current year, with the remainder allocated to retained earnings.

Machine Disposal Error

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Accumulated depreciation		52,000	
	Factory machine			50,500
	Gain on disposal			1,500

EXERCISE 21–8

Depreciation charges should be:

2020: $35,000 \times 33.33\% = 11,666$

2021: $(35,000 - 11,666) \times 33.33\% = 7,778$

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Automobile		35,000	
	Accumulated depreciation			19,444
	Depreciation expense		7,778	
	Income tax expense			1,556
	Retained earnings			18,667
	Income tax payable or deferred taxes			3,111

Retained earnings adjustment: $(35,000 - 11,666) \times 80\%$

Tax payable (deferred) adjustment: $(35,000 - 19,444) \times 20\%$

General Journal

Date	Account/Explanation	PR	Debit	Credit
	Provision for lawsuit liability		750,000	
	Recovery of provision			750,000
	Deferred tax asset			150,000
	Deferred tax expense		150,000	
	Inventory		11,500	
	Sales		18,000	
	Cost of sales			11,500
	Accounts receivable			18,000
	Income tax payable		1,300	
	Income tax expense			1,300
	Retained earnings		48,000	
	Revenue			60,000
	Income tax expense		12,000	

EXERCISE 21–9

	2021		**2020**	
Reported net income	$	1,200,000	$	1,050,000
Adjustment for rent		60,000		(90,000)
Adjustment for office supplies		5,700		(4,500)
Adjustment for warranty		(6,000)		(38,000)
Corrected net income	$	1,259,700	$	917,500

Chapter 22 Exercises

EXERCISE 22–1

a. Sterling Inc. is owned by a close family member of a director of Kessel Ltd. This makes Kessel Ltd. and Sterling Inc. related parties. Disclosure is required for the relationship, any transactions during the period, and the fact that the amount was written off during the year.
b. Kessel Ltd.'s 35% share ownership of Saunders Ltd. would normally be presumed to give it significant influence, thus making the parties related. As such, the nature of the relationship and the transaction itself need to be disclosed. There is, however, no requirement to state that the transaction was at arm's length unless this fact can be verified.
c. Mr. Chiang is a member of the key management personnel of Kessel Ltd., making them related parties. Therefore, the details of the transaction need to be disclosed along with the nature of the relationship. As well, the guarantee of the mortgage should also be disclosed.
d. Even where there is economic dependence, regular supplier-customer relationships do not indicate related party relationships. Thus, no separate disclosure of this transaction is required.

EXERCISE 22–2

a. Without any further information about cross shareholdings, the presence of a single common director between companies does not, in and of itself, indicate a related party relationship.
b. A single investor has influence, but not control, over the other two companies. This would not normally indicate a related party relationship between the two associate companies.
c. Each of the directors is individually related to each of the companies. The presence of common directors does not, in and of itself, indicate a related party relationship between the two companies. However, IAS 24 does require an examination of the substance, and not just the form, of the relationships. If the five directors have demonstrated a pattern of acting together as a single voting unit, then it can be argued that as a group, they control the two companies. In this case, the presence of a common controlling group would indicate that the companies are related.

EXERCISE 22–3

a. January 8, 2023: The appropriation was approved after the year-end and there is no indication that this action was substantively enacted prior to the approval date. As such, this was not a condition present at year-end, and no adjustment is required. However, disclosure should be made, as this event will likely have a material effect on future operations.
b. January 27, 2023: Although the bonus was approved after year-end, it clearly relates to the financial results of the year and was committed under employment contracts that existed at the year-end. The bonus should thus be accrued on December 31.
c. February 3, 2023: The additional taxes should be accrued, as the tax dispute already existed at the year-end. The change will be treated prospectively, (i.e., adjust in 2022 only) unless it can be demonstrated that the previous provision was made in error.
d. February 21, 2023: This should be adjusted, as the error caused by the fraud existed at the reporting date. As well, because there is an illegal act involved, there may be further disclosures required.
e. March 16, 2023: Dividends should not be adjusted, as there is no obligation to pay them until they are declared. However, disclosure of the declaration should be made.
f. March 18, 2023: The condition did not exist at the reporting date, so no adjustment is required. If the loss of the machine will have a material effect on future operations, then disclosure should be made.

EXERCISE 22–4

Although the damage only appeared after the reporting period, the engineers have indicated that the problem may have been present for several years. This would indicate the presence of an adjusting event. However, a provision should not be made as there is no legal obligation to make the repairs at year-end, that is, the building could simply be abandoned rather than repaired. What should be done, however, is an impairment review under IAS 36, and any impairment of the asset should be recorded.

EXERCISE 22–5

The auditor needs to consider if there is sufficient evidence available to support a clean opinion, that is, that the financial statements have not been materially misstated. The correspondence with the legal counsel should be examined carefully in order to determine if the assertion that the outcome cannot be determined is supportable. Contingent liabilities are not accrued as provisions if there is only a possible, but not present, obligation that will only be settled by an uncertain future event, or if a present obligation cannot be reliably measured. If accrual of the provision is not warranted, disclosure in the notes is still required. In this case, the effects appear material, so the auditor will need to make sure that the appropriate note disclosures are made.

The auditor will also need to assess management's assertion that the plant will be closed if the legal case is lost as this may have a pervasive effect on future operations. The auditor may need to question the going concern assumption. Although it may be too early to make this determination, the compromise of the going concern assumption would lead to presentation of the financial statements using a different basis of accounting. If management refused to make this change, then the auditor would need to consider if a qualified, or adverse, opinion was warranted.

Even if the auditor is satisfied with the disclosures made, the pervasiveness of the matter may suggest the need for an emphasis of matter paragraph to be included in the audit report, thus drawing attention to the disclosures.

EXERCISE 22–6

Revenue test:

$(\$289{,}000 \times 10\%) = \$28{,}900$. Business lines 1 and 4 meet this threshold.

Profit/(Loss) Test:

The total profits of $52,000 are greater than the total losses of $14,000, therefore $(\$52{,}000 \times 10\%) = \$5{,}200$

In absolute terms, ignoring the + and – signs, business lines 1, 2, and 4 meet this threshold.

Assets test:

$(\$478{,}000 \times 10\%) = \$47{,}800$. Business lines 1 and 4 meet this threshold.

Conclusion:

Based on the tests above, business lines 1, 2, and 4 all meet at least one of the three tests above.

For the 75% or greater test $(\$289{,}000 \times 75\%) = \$216{,}750$

Sum of business lines 1, 2, and 4 $(90{,}000 + 25{,}000 + 140{,}000) = \$255{,}000$

This test has been met by all of the reportable segments, which are business lines 1, 2, and 4. However, management can override these tests and report a business line as a reportable segment if they consider the segmented information to be useful to the stakeholders.

EXERCISE 22–7

Interim reporting has several challenges:

- Changes in accounting principles: If this change were to occur in the second or third quarter, how should this affect the first quarter interim financial statements? The general consensus is that, even if the change of a particular accounting policy, such as a depreciation method, is prospective, the annual change should be prorated to each of the interim accounting periods so as not to over/under state any specific quarter. This would lessen any tendency of management to manipulate accounting policies within a specific quarter to influence bonuses or operational results targets. Thus, even though the change in policy is applied prospectively for the fiscal year, if interim statements are prepared, the change in policy would be applied retroactively, but proportionally, between each quarterly period to smooth the results over each quarter for that fiscal year.
- Cyclical and seasonal swings experienced by businesses within a fiscal year: Revenue can be concentrated over a limited number of months, while expenses may be incurred monthly. If IFRS guidelines are followed, the principles of revenue recognition and matching (of expenses incurred to earn those revenues) will continue to be accrued and recorded within each of the interim periods and the same tests used for annual financial statements would be applied to the interim reports.
- Allocations for income taxes and earnings per share: The treatment requires each interim period to be independent of each other and for interim allocations to be determined by applying all the same tests as those used for the annual reports.
- Auditors: While some stakeholders continue to push for an examination of the interim reports in order to provide assurance, auditors are reluctant to express an opinion on interim financial statements. As such, there will always be a trade-off between the need for assurance through an audit opinion and the need to produce the interim report on a timely basis.

ASPE does not contain any guidance for reporting interim reporting or segmented information. The issues would be the same for companies following either IFRS or ASPE, except that IFRS requires more disclosures.

EXERCISE 22–8

a. Percentage (common-size) vertical analysis is as follows:

		2021		2020		2019
Net sales		100%		100%		100%
Cost of goods sold (COGS)		65%		60%		63%
Gross profit		35%		40%		37%
Selling and administrative expenses		20%		21%		22%
Income from continuing operations before income taxes		15%		19%		15%

The company's income before taxes declines in 2021 due to higher cost of goods sold (COGS) as a percentage of net sales, as compared with 2020. Moreover, the COGS in 2020 decreased by 3% from the previous year followed by a more than offsetting increase back to greater than the 2019 percentage levels. Was there a write-off of inventory in 2021 that would cause COGS to sharply increase from the previous year? More investigation would be needed to determine the reason for the difference. Selling and administration continues to slowly decrease over the three-year period as a percentage of sales, suggesting that management may be taking steps to make operations more efficient. Separating the selling from the administration expenses would be a worthwhile drill-down into the numbers.

Horizontal (trend) analysis is as follows:

		2021		2020		2019
Net sales		119%		107%		100%
Cost of goods sold (COGS)		123%		102%		100%
Gross profit		113%		116%		100%
Selling and administrative expenses		109%		104%		100%
Income from continuing operations before income taxes		118%		132%		100%

This trend-line analysis highlights the jump in COGS between 2020 and 2021. Note how sales increased by 19% from 2019 while COGS increased by 23%. This divergent trend between these two accounts should be investigated further. Even though selling and administration expenses were shown to be dropping as a percentage of sales, these expenses actually increased over the two years. Further investigation of the increasing selling and administration costs might be necessary.

As can be seen from analysis of the two schedules above, different areas of operations may become targeted for further investigation depending on which schedule is examined. An area may not look particularly troublesome until another type of analyses is considered.

b. Limitations of these types of analyses include:

- Vertical/Common Size Analysis: The downside to this type of analysis is the need to avoid management bias, or the temptation to use various accounting policies to favourably change a gross margin for personal reasons such as bonuses or positive performance evaluations. For example, if a gross margin decreased from 40% to 35% over a two-year period, the decline could be a realistic reflection of operations, or it could be the result of a change in estimates or of accounting policy. For this reason, any change in the ratios should always be further investigated.
- Horizontal/Trend Analysis: If the company's operations are relatively stable each year, this analysis can be useful. However, changes in these ratios could also be due to a change in pricing policy and not due to actual transactions and economic events. Again, more investigation is necessary to determine if the increase is due to true economic events or changes in policy made by management.

It is important to remember that ratios are only as good as the data presented in the financial statements. For example, if quality of earnings is high, then ratio analysis can be useful, otherwise it may do more harm than good. Also, it is important to focus on a few key ratios for each category to avoid the risk of information overload; it is those few key ratios that should be investigated and tracked over time. It is also important to understand that industry benchmarks make no assurances about how a company compares to its competitors since the basis for the industry ratio may be different than the basis used for the company. As such, ratios provide good indicators for further investigation, but they are not the end-point of an evaluation.

EXERCISE 22–9

a. Liquidity Ratio: Measures the enterprise's short-term ability to pay its maturing obligation:

Current ratio: $499{,}500 \div 393{,}200 = 1.27$

If a guideline of 2:1 is the norm for this industry, then this company's ratio is low. This company can meet its current debts provided that accounts receivable are collectible and inventory sellable. Too low could be an issue while too high could also be an issue and indicate an inefficient use of funds.

Quick ratio: $499{,}500 - 210{,}500 - 15{,}900 \div 393{,}200 = 0.69$

If a guideline of 1:1 is the norm for this industry, this company's ratio is low. More information is needed, such as historical trends or industry standards. Nearly 50% of the current assets are made up of inventory. Therefore, inventory risks such as obsolescence, theft, or competitors' products could affect this company.

b. Activity Ratio: Measures how effectively the enterprise is using its assets. Activity ratios also measure the liquidity of certain assets such as inventory and receivables (i.e., how fast the asset's value is realized by the company).

Receivables turnover: $550{,}000 \div 213{,}100 = 2.58$ times per year or every $365 \div 2.58 = 141$ days

If a guideline of 30 to 60 days is the norm for this industry, receivables are being collected too slowly and too much cash is being tied up in receivables. Comparison to industry standards or historical trends would be useful.

Inventory Turnover: $385{,}000 \div 210{,}500 = 1.83$ times per year or every $365 \div 1.83 = 199$ days

An inventory turnover of less than three times per year appears to be very low. Too low may mean that too much cash is being tied up in inventory or there is too much obsolete inventory that cannot be sold. Too high can signal that inventory shortages may be resulting in lost sales. More information about the industry is needed.

Asset Turnover: $550{,}000 \div 1{,}369{,}500 = 0.40$

This ratio appears low. Too low means that this company uses its assets less efficiently to generate sales. Industry standards and historical trends would be useful.

EXERCISE 22–10

Liquidity:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}} = \frac{1{,}296{,}500}{390{,}700} = 3.32 \text{ times}$$

Current ratio describes the company's ability to pay current liabilities as they come due.

This company's comparable current ratio is favourable.

Activity:

Days' sales in inventory	$= \frac{\text{Ending inventory}}{\text{COGS}} \times 365$
	$= \frac{55{,}000}{500{,}000} \times 365$
	$= 40$ days

Days' sales in inventory measures the liquidity of the company's inventory. This is the number of days that it takes for the inventory to be converted to cash. The company's days' sales in inventory are unfavourable when compared to the industry statistics.

$$\text{Total asset turnover} = \frac{\text{Net sales (or revenues)}}{\text{Average total assets}} = \frac{1{,}100{,}000}{1{,}977{,}500} = 0.56 \text{ times}$$

Total asset turnover describes the ability of a company to use its assets to generate sales—the higher the better.

This company's comparable asset turnover is unfavourable.

Accounts payable turnover	$= \frac{\text{COGS}}{\text{Average accounts payable}}$
	$= \frac{500{,}000}{265{,}200}$
	= 1.89 times or every 194 days

Accounts payable turnover describes how much time it takes for a company to meet its obligations to its suppliers. This company's accounts payable turnover is lower than the industry average which means they are preserving their cash longer by comparison.

Solvency/coverage:

$$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}} = \frac{484{,}500}{1{,}977{,}500} = 24.50\%$$

Debt ratio measure how much of the assets are financed by debt versus equity. The greater the debt ratio, the greater the risk associated with making interest and principal payments. This company's comparable debt ratio is favourable.

Profitability:

$$\text{Profit margin} = \frac{\text{Net income}}{\text{Net sales (or revenues)}} = \frac{544{,}960}{1{,}100{,}000} = 49.54\%$$

Measures the company's ability to generate a profit from sales. This company's profit margin is favourable.

Book value per common share	$= \frac{\text{Equity applicable to common shares}}{\text{Number of common shares outstanding}}$
	$= \frac{1{,}399{,}400}{15{,}900}$
	= $88.01 per share

When compared to its market price of $97, it appears that the market considers the earning power of its assets to be greater than the value of the company on its books. It follows that most profitable companies try to sustain a market value higher than the book value. Conversely, if the book value was higher than the market price, then the market considers that the company is worth less than the value on its books.

Book value per preferred share	$= \frac{\text{Equity applicable to preferred shares}}{\text{Number of preferred shares outstanding}}$
	$= \frac{93{,}600}{3{,}744}$
	= $25.00 per share

There are no dividends in arrears, so this ratio reflects the average paid-in amount, or the call price if they are callable.

EXERCISE 22–11

a. i. Acid-test ratio for 2020:

$$\frac{75 + 310}{129 + 100} = 1.68{:}1$$

This is a liquidity ratio that is a more rigorous test of a company's ability to pay its short-term debts as they come due. Inventory and prepaid expenses are excluded from this ratio and only the most liquid assets are included.

ii. The company's acid-test ratio is favourable relative to the industry average.

b. i. Accounts receivable turnover for 2020.

$$1{,}500 \div \frac{(310 + 180)}{2} = 6.12 \text{ times/year}$$ or every 59.64 days $(365 \div 6.12)$

ii. The company's accounts receivable turnover is unfavourable relative to the industry average because the company's turnover rate of 6.12 is lower than the industry rate of 8.2 times. In days, the company's rate is every 59.6 days $(365 \div 6.12)$ as compared to industry's every 44.5 days $(365 \div 8.2)$ which represents the average number of days to collect accounts receivable.

c. Using the return on assets ratio:

$$223 \div \frac{(2{,}189 + 1{,}050)^{*}}{2} \times 100 = 13.77\%$$

$*(310 + 75 + 1{,}360 + 250 - 206 + 400) = 2{,}189;$
$(180 + 42 + 500 + 210 - 282 + 400) = 1{,}050$

13.77% is higher (more favourable) than the industry average

EXERCISE 22–12

The balance sheet was strengthened from June 30, 2019 to June 30, 2020:

Debt financing (percentage of liabilities to total assets) decreased significantly, from 62.5% at June 30, 2019 $(\$75{,}000 \div \$120{,}000)^{*} \times 100$ to 5.91% at June 30, 2020 $(\$10{,}850 \div \$183{,}550) \times 100$

* (1,800 + 7,000 + 950 + 1,100) = 10,850 total liabilities
(29,000 − 3,800 − 1,400 + 10,000 + 15,000 + 17,000 + 14,000 + 750 + 75,000 + 25,000 + 2,500 + 500) = 183,550 total assets

Equity financing (percentage of equity to total assets) increased from 37.5% at June 30, 2019 ($45,000 ÷ $120,000 × 100) to 94.09% at June 30, 2020 ($172,700 ÷ $183,550)* × 100

* (49,325 + 40,000 + 50,000 − 46,000 + 79,375 net income**) = 172,700
(2,000+314,000−22,000−20,000−123,900−4,875−5,000−1,200−17,900−41,750) =
** Net income 79,375

EXERCISE 22–13

Calculations:

	2020	2019
Current ratio	(60 + 80 + 240) ÷ 180 = 2.11	(10 + 70 + 50) ÷ 75 = 1.73
Acid-test ratio	(60 + 80) ÷ 180 = 0.78	(10 + 70) ÷ 75 = 1.07

Yeo Company's current ratio improved significantly from 1.73 in 2019 to 2.11 in 2020. This means that in 2020, Yeo Company had $2.11 of current assets available to pay each $1.00 of short-term debt. However, the acid-test is a more rigorous measure of short-term debt-paying ability because it excludes less liquid current assets such as Yeo Company's merchandise inventory. Merchandise inventory is excluded because it is not available to pay short-term debt until it has been sold; there is also the risk that it might not be sold, due to obsolescence, spoilage, or poor sales. The acid-test for 2019 showed that there was $1.07 of quick current assets, or liquid current assets, available to pay each $1.00 of short-term obligations. The acid-test decreased in 2020 indicating that there was $0.78 of quick current assets available to pay each $1.00 of current liabilities, highlighting a potential cash flow problem. When there are insufficient current assets available to pay current liabilities, liquidity, or cash flow, is a concern, hence the relationship between short-term debt-paying ability and cash flow.

EXERCISE 22–14

Kevnar Corporation has strengthened its balance sheet because its debt ratio decreased from 2019 to 2020. Strengthening the balance sheet refers to how assets are financed—through debt or equity. The greater the equity financing, the stronger the balance sheet. This is because there is risk associated with debt financing (i.e., the risk of being unable to meet interest and/or principal payments). Therefore, although Kevnar Corporation has a greater percentage of its assets financed through debt than does Dilly Inc., it has increased equity financing which indicates a strengthening of the balance sheet because of the decrease in risk associated with debt financing.

Financing through equity also has its disadvantages. Having more equity-based financing can mean a dilution of ownership that results from the issuance of more shares to outside investors. Having more shareholders also means that there will be additional claims to the equity in the business. Conversely, debt does not dilute the ownership of a business since a creditor is only entitled to the repayment of the agreed-upon principal plus interest, so there is no direct claim on future profits of the business. Moreover, if the company is successful, the existing owners will reap a larger portion of the rewards than they would have if they had issued more shares to outside investors in order to finance the growth. Additionally, interest on debt can reduce net income and, hence, reduce income taxes, making equity financing potentially a more costly source of financing than debt. Because of the requirement to comply with federal laws and securities legislation, financing through issuance of shares is usually a more complicated and lengthy process than acquiring funds from debt sources. This certainly slows the financing process down, but it can also add to the costs of equity based financing.

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