EXERCISE 18–9

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.

EXERCISE 18–10

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.

EXERCISE 18–11

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.

Chapter 19

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)

Chapter 19 Learning Objectives

After completing this chapter, you should be able to:

LO 1: Describe earnings per share (EPS) and their role in accounting and business.

LO 2: Describe basic and diluted earnings per share in terms of an overview.

LO 2.1: Calculate basic earnings per share.

LO 2.2: Calculate diluted earnings per share and report the final results.

LO 3: Describe the issues that can affect both basic and diluted earnings per share.

LO 4: Calculate basic and diluted earnings per share in terms of a comprehensive illustration.

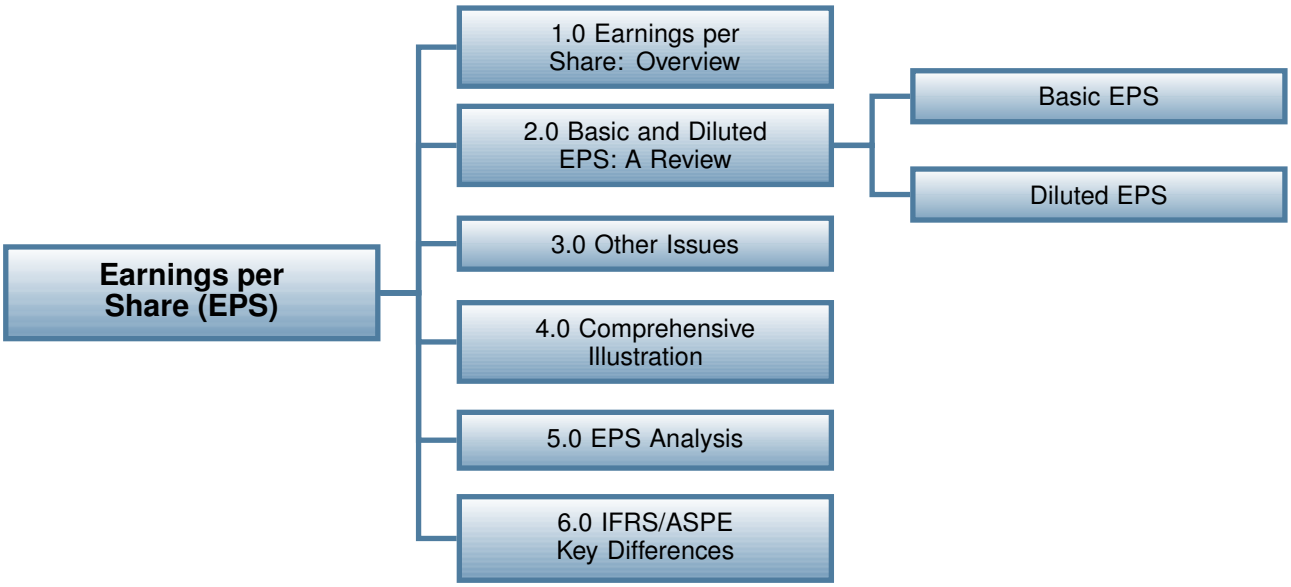
LO 5: Identify and explain how earnings per share and price-earnings ratio are used to analyze company performance from an investor perspective.

LO 6: 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



19.1 Earnings per Share: 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.).

19.2 Basic and Diluted Earnings per Share: A Review

Basic earnings per share (EPS) is simply:

$$\text{Basic EPS} = \frac{\text{Net income available to common shareholders}}{\text{Weighted average number of common shares outstanding}}$$

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:

Income Available to Common Shareholders		
Net income (loss)	$350,000	
Less:		
Class A: $3, cumulative, preferred shares (issued 10,000 shares × stated rate of $3)	(30,000)	Dividend entitlement
Class B: $4, non-cumulative, preferred shares (no dividend declared)	–	Dividend declared
Income available to common shareholders	$320,000	

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:

Income Available to Common Shareholders		
Net income (loss)	($125,000)	
Plus:		
Class A: $3, cumulative, preferred shares (issued 10,000 shares × stated rate of $3)	(30,000)	Dividend entitlement
Class B: $4, non-cumulative, preferred shares ($50,000 − 15,000 arrears − 30,000)	(5,000)*	Dividend declared
Net income (loss) available to common shareholders	($160,000)	

* 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 ×Factor ×Fraction 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	×1.1			
			163,900			
5	September 1	Issued shares	15,000			
			178,900			
6	November 1	2-for-1 stock split	×2			
			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.

Event	Date	Description	Shares Outstanding	Retroactive Restatement Factor(s)	Fraction of the Year	Total Shares Outstanding ×Factor ×Fraction of the Year
1	January 1	Opening balance	130,000	1.1× 2		
2	February 1	Issued shares	20,000			
			150,000	1.1× 2		
3	May 1	Repurchased shares	(1,000)			
			149,000	1.1× 2		
4	July 1	10% stock dividend	×1.1			
			163,900	2		
5	September 1	Issued shares	15,000			
			178,900	2		
6	November 1	2-for-1 stock split	×2			
			357,800			

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 ×Factor ×Fraction of the Year
1	January 1	Opening balance	130,000	1.1× 2	1/12	23,833*
	Jan 1 – Feb 1					
2	February 1	Issued shares	20,000			
	Feb 1 – May 1		150,000	1.1× 2	3/12	82,500
3	May 1	Repurchased shares	(1,000)			
	May 1 – Jul 1		149,000	1.1× 2	2/12	54,633
4	July 1	10% stock dividend	×1.1			
	Jul 1 – Sep 1		163,900	2	2/12	54,633
5	September 1	Issued shares	15,000			
	Sep 1 – Nov 1		178,900	2	2/12	59,633
6	November 1	2-for-1 stock split	×2			
	Nov 1 – Dec 31		357,800		2/12	59,633
					12/12	334,865

* $130{,}000 \times 1.1 \times 2 \times (1 \div 12) = 23{,}833$

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 ($350,000 − $30,000 preferred dividends).

The numerator and denominator are now both calculated, so the basic earnings per share calculation can now be completed as follows:

$$\text{Basic EPS} = \frac{\text{Net income available to common shareholders}}{\text{Weighted average number of common shares outstanding}}$$

$$\text{Basic EPS} = \frac{\$320{,}000}{334{,}865} = \$0.9556 \text{ or } \$0.96 \text{ rounded per share}$$

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: $(\$20{,}000 \div 334{,}865) = (\$0.0597)$

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:

$$\text{Diluted EPS} = \frac{\text{Net income available to common shareholder + adjustments from dilutive securities that are ranked from most dilutive to least dilutive}}{\text{Weighted average number of common shares outstanding + adjustments from dilutive securities that are ranked from most dilutive to least dilutive}}$$

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

[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

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 × $30 per share = $30,000)	1,000	shares
Proceeds used to purchase common shares from the market ($30,000 ÷ $50 market price per share)	(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 (1,000 × $40). If the current market price is currently $35 per share, the company would have to ensure that it issued an additional 1,143 shares ($40,000÷$35) 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 (50 × 3 managers) additional shares.

The incremental shares for the options and the contingently issuable shares will be included

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).

in the diluted EPS schedule as denominator values as shown below:

Diluted EPS Calculation Schedule

	Income (numerator)	# of shares (denominator)	EPS
Basic EPS	$320,000	334,865	$0.9556
Call options:			
Shares issued @ $30 per share		1,000	
Shares repurchased $(1{,}000 \times \$30) \div \$50$		(600)	
	-	400	
Contingently issuable shares:			
(3 managers $\times$ 50 shares)		150	
	-	150	
Put options:			
Shares issued ($40,000 ÷ $35)		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 $(400+143+150)$ 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.

Individual Effects Calculations

	Income (numerator)	# of shares (denominator)	EPS	
Basic EPS	$320,000	334,865	$0.9556	
Individual effects:				
3.2%, convertible bond:				
Interest savings ($400,000 × 3.2% × 73%) net of tax	9,344			#1 most dilutive
Shares issued ($400,000 ÷ $1,000 × 30)		12,000	0.7787	
		0.7787 is less than 0.96		dilutive
2.5%, convertible bond:				
Interest savings ($300,000 × 2.5% × 73%) net of tax	5,475			#2 most dilutive
Shares issued ($300,000 ÷ $1,000 × 23)		6,900	0.7935	
		0.7935 is less than 0.96		dilutive
$3, convertible preferred shares:				
~~Dividend savings (10,000 × $3)~~	~~30,000~~			exclude
~~Shares issued (10,000 × 3)~~		~~30,000~~	~~1.00~~	
		1.00 is more than 0.96		anti-dilutive

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:

$$\$400{,}000 \times 3.2\% \text{ per annum} \times (1 - 0.27) = \$9{,}344 \text{ after-tax increase to net income}$$

The increase in common shares if converted would be:

$$\$400{,}000 \div \$1{,}000 \times 30 \text{ shares} = 12{,}000 \text{ additional shares}$$

The individual EPS effect compared to basic EPS would be:

$9,344 ÷ 12,000 shares = $0.7787 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:

10,000 shares $\times$ \$3 dividends $=$ \$30,000 dividend savings, 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:

$$10{,}000 \times 3 \text{ shares} = 30{,}000 \text{ additional shares}$$

The individual EPS effect compared to basic EPS would be:

\$30,000 $\div$ 30,000 shares $=$ \$1.00 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:

Individual Effects Calculations

	Income (numerator)	# of shares (denominator)	Diluted EPS	
Basic EPS	$320,000	334,865	$0.9556	
Call options:				
Shares issued @ $30 per share		1,000		
Shares repurchased (1,000 × $30) ÷ $50		(600)		
	–	400		
Contingently issuable shares:				
(3 managers × 50 shares)		150		Rank #1 most dilutive
Put options:				
Shares issued ($40,000 ÷ $35)		1,143		
Share repurchased (1,000 @ $40)		(1,000)		
	–	143		
Subtotal	$320,000	335,558	$0.9536	
Convertible bond:				
3.2%, convertible bond:				
Interest savings ($400,000 × 3.2% × 73%) net of tax	9,344			Rank #2 most dilutive
Shares issued ($400,000 ÷ $1,000 × 30)		12,000		
Subtotal	$329,344	347,558	$0.9476	
2.5%, convertible bond:				
Interest savings ($300,000 × 2.5% × 73%) net of tax	5,475			Rank #3 most dilutive
Shares issued ($300,000 ÷ $1,000 × 23)		6,900		
Subtotal	$334,819	354,458	$0.9446	

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: ($20,000 net of tax loss ÷ 334,865 basic EPS shares) = ($0.06)
Diluted – Discontinued operations: ($20,000 net of tax loss ÷ 354,458 diluted EPS shares) = ($0.06)

Companies can choose to disclose EPS – discontinued operations in the notes to the financial statements.

19.3 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.

19.4 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 (Each $1,000 bond is convertible into 50 Class A Common shares, commencing August 1, 2020)	350,000
Share capital:	
$8, convertible, cumulative, preferred shares; each preferred share is convertible into 1 Class A common share, issued and outstanding, 12,500 shares	250,000
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 ×Factor ×Fraction 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	×1.1			
	Jul 1 – Aug 1		110,000		1/12	9,167
3	August 1	12,500 shares issued				
	Aug 1 –	($250,000 ÷ 1,000)				
	Dec 31	×50 shares	12,500			
			122,500		5/12	51,042
	Total WACS				12/12	115,209

	Income	WACS	Basic EPS
Net income from continuing operations ($690,000 + $210,000 discontinued operations)	900,000		
Less preferred dividends (12,500 × $8)	(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 $(1{,}000 \times \$18) \div \$21$		(857)	
		143	
Executive stock options:			
Shares issued @ $20 per share		500	
Shares repurchased $(500 \times \$20) \div \$21$		(476)	
		24	
Contingent shares:			
500 shares $\times$ 3 divisional managers		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.

	Income (Numerator)	Number of Shares (Denominator)	Individual EPS Effect	
Basic EPS (from continuing operations)	$800,000	115,209	$6.94	
Individual effects:				
Preferred shares (per share)	$8	1	$8.00	Not dilutive
8% bonds - actual conversion on Aug 1				
Interest saved $(\$250{,}000 \div \$600{,}000) \times \$561{,}494 \times 9\% \times (1 - 0.2) \times 2 \div 12$	2,807			
June 1 to August 1				
Additional shares $(\$250{,}000 \div \$1{,}000) \times 50 \times 2 \div 12$		2,083	$1.35	Dilutive
Remainder of the convertible 8% bonds				
Interest saved $(\$350{,}000 \div \$600{,}000) \times \$561{,}494 \times 9\% \times (1 - 0.2) \times (7 \div 12)$	13,757			
June 1 to December 31				
Additional shares $(\$350{,}000 \div \$1{,}000) \times 50$ shares $\times (7 \div 12)$		10,208	$1.35	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 (1,000 × $18) × $21		(857)	
		143	
Executive stock options:			
Shares issued @ $20 per share		500	
Shares repurchased (500 × $20) ÷ $21		(476)	
		24	
Contingent shares:			
500 shares × 3 divisional managers		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: ($210,000 net of tax loss ÷ 115,209 basic EPS shares) = ($1.82)
Diluted – Discontinued operations: ($210,000 net of tax loss ÷ 129,167 diluted EPS shares) = ($1.63)

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 site. Click here to watch the video.

19.5 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:

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

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:

$$\text{Low: } \frac{\$43.29}{\$2.98} = 14.5 \qquad \text{High: } \frac{\$45.86}{\$2.98} = 15.39$$

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.

19.6 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.

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.

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

CPA Canada. (2016). *CPA Canada handbook*. Toronto, ON: CPA Canada.

Investopedia. (n.d.). *Everything investors need to know about earnings*. Retrieved from http://www.investopedia.com/articles/basics/03/052303.asp

Exercises

EXERCISE 19–1

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.

EXERCISE 19–2

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.

EXERCISE 19–3

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?

EXERCISE 19–4

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.

EXERCISE 19–5

Below is data for Hurrington Inc.:

Net income	$4,500,000
$6, cumulative preferred shares, issued and outstanding 40,000 shares	4,000,000 $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.

EXERCISE 19–6

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.

EXERCISE 19–7

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?

EXERCISE 19–8

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.

EXERCISE 19–9

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 pre-

ferred 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.

Chapter 20

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.

Chapter 20 Learning Objectives

After completing this chapter, you should be able to:

LO 1: Describe the statement of cash flows (SCF) in accounting and business.

LO 2: Explain the purpose of the statement of cash flows and the two methods used.

LO 3: Describe the statement of cash flows using the *direct method* and explain the difference in format from the *indirect method*.

LO 4: Describe how the results from the statement of cash flows are interpreted.

LO 5: Describe the required disclosures for the statement of cash flows.

LO 6: Describe the types of analysis techniques used for the statement of cash flows.

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.

LO 8: Discuss specific items that affect the statement of cash flows.

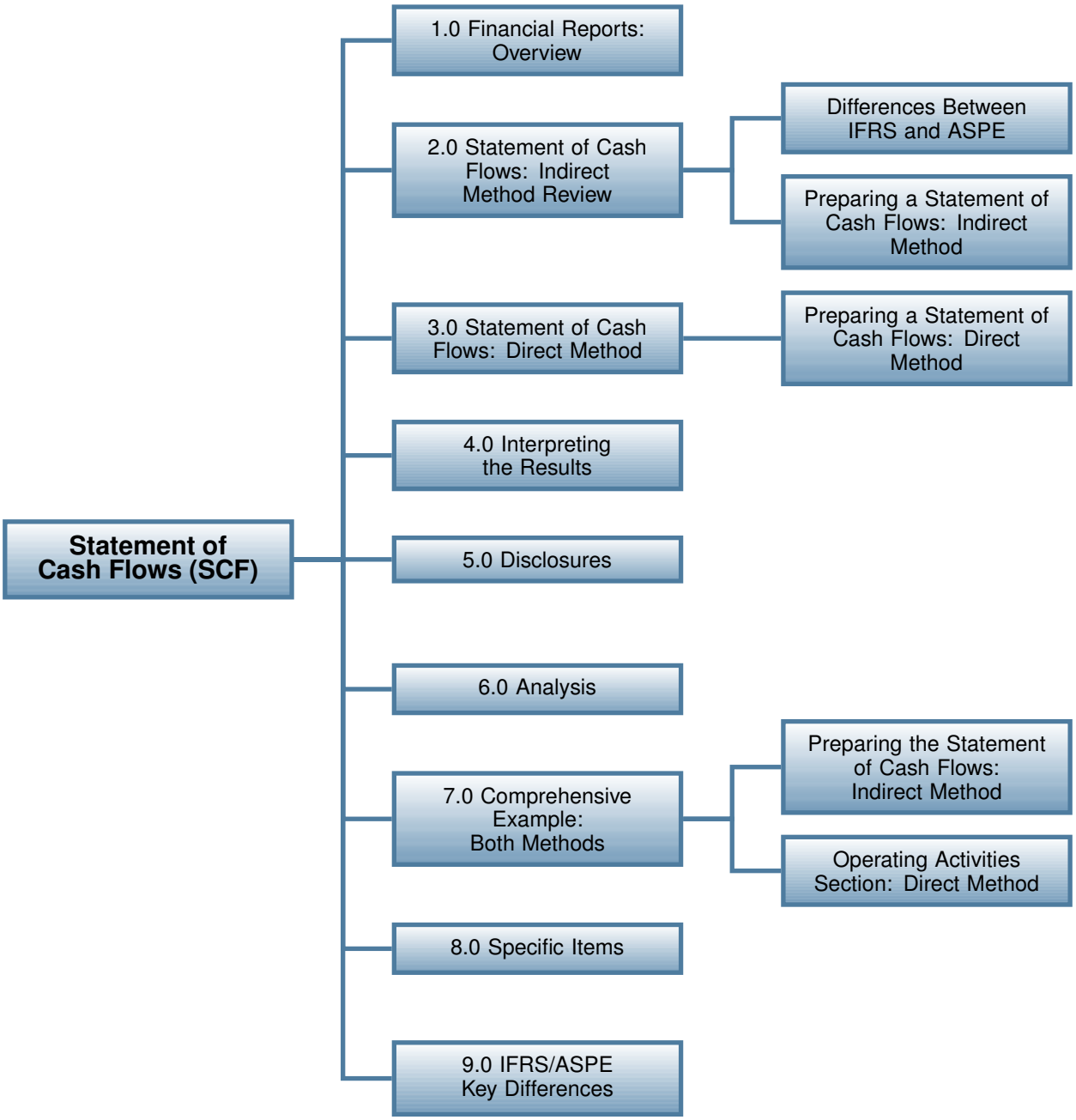
LO 9: Summarize the differences between ASPE and IFRS regarding reporting and disclosure requirements of the statement of cash flows.

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



20.1 Financial Reports: 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.

Wellbourn Services Ltd.
Statement of Financial Position
December 31, 2020

Assets		Liabilities	
Current assets		Current liabilities	
Cash	$135,500	Accounts payable	$ 77,500
Accounts receivable (net)	225,000	Accrued liabilities	225,000
Inventory	130,000	Total current liabilities	302,500
Total current assets	490,500	Bonds payable	160,000
Investments	100,000	Total liabilities	462,500
Property, plant, and equipment (net)	246,000	Equity	
Intangible assets	15,000	Share capital	210,000
Total assets	$851,500	Contributed surplus	25,000
		Retained earnings	105,500
		Accum. Other Comp. Income(AOCI)	48,500
		Total equity	389,000
		Liabilities and equity	$851,500

Wellbourn Services Ltd.
Statement of Cash Flows
For the year ended December 31, 2020

Cash flows from operating activities		
Cash received from sales	$ 50,000	
Cash paid for goods and services	(25,000)	
Cash paid to or on behalf of employees	(51,200)	
Net cash flows from operating activities		(26,200)
Cash flows from investing activities		
Purchase of equipment	(25,000)	
Net cash flows from investing activities		(25,000)
Cash flows from financing activities		
Dividends paid	(50,000)	
Issued bonds	160,000	
Net cash flows from financing activities		110,000
Net increase in cash		58,800
Cash balance, January 1		76,700
Cash balance, December 31		$135,500

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.

20.2 Statement of Cash Flows: 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.

XYZ Company Ltd.
Statement of Cash Flows
For the year ended December 31, 2020

		Linkage to other financial statements:
Cash flows from operating activities		
Net income (loss)	$$$ or ($$$)	line items from the income statement
Non-cash items (adjusted from net income)		
Depreciation, depletion and amortization expenses	+ $$$	
Losses (gains) from sale of non-current tangible assets	$$$ or ($$$)	
Deferred income tax expense	+ $$$	
Impairment losses from inventory or receivables	+ $$$	
Investment income from investment in associate	($$$)	
Unrealized foreign exchange losses (gains)	$$$ or ($$$)	
Cash in (out) from operating working capital		changes in current assets and current liabilities from the balance sheet
Decrease (increase) in trading investments	$$$ or ($$$)	
Decrease (increase) in accounts receivable	$$$ or ($$$)	
Decrease (increase) in notes receivable	$$$ or ($$$)	
Decrease (increase) in inventory	$$$ or ($$$)	
Decrease (increase) in prepaid expenses	$$$ or ($$$)	
Decrease (increase) in accounts payable	$$$ or ($$$)	
Decrease (increase) in interest payable	$$$ or ($$$)	
Decrease (increase) in other liabilities	$$$ or ($$$)	
Decrease (increase) in income taxes payable	$$$ or ($$$)	
Decrease (increase) in unearned revenue	$$$ or ($$$)	
Net cash from operating activities	$$$ or ($$$)	
Cash flows from investing activities		
Sales proceeds or (purchase) of non-current investments	$$$ or ($$$)	changes in non-current assets accounts
Sales proceeds or (purchase) of property, plant, and equipment	$$$ or ($$$)	
Sales proceeds or (purchase) of intangible assets	$$$ or ($$$)	
Net cash from investing activities	$$$ or ($$$)	
Cash flows from financing activities		
Additions to or (repayment) of long-term debt	$$$ or ($$$)	changes in non-current liabilities and equity accounts (share capital and dividends)
Proceeds from shares issuance	$$$ or ($$$)	
Dividends paid	($$$)	
Net cash from financing activities	$$$ or ($$$)	
Net increase (decrease) in cash and cash equivalents	$$$ or ($$$)	← sum of the 3 sections above
Cash and cash equivalents, January 1	$$$	reconciles the net change with opening and closing cash and cash equivalent balances from the balance sheet
Cash and cash equivalents, December 31	$$$	

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 earnings	84,410	50,000
	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:

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

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)

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:

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	

Accounting Equation:

A = L + E MUST ALWAYS BALANCE!

Assets = Liabilities + Equity

Cash + (all other) Assets = Liabilities + Equity

Cash + Assets = Liabilities + Equity

Cash + Assets = Liabilities + Equity

Cash + Assets = Liabilities + Equity

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:

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

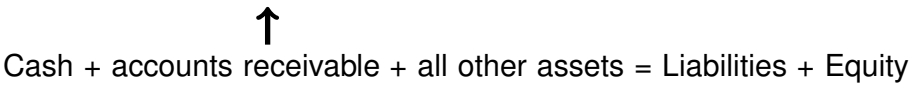
This must always remain in balance. This equation can be applied when analyzing the various accounts to record the changes. For example, accounts receivable has increased from $165,000 to $249,510 for a total increase of $84,510. Using the accounting equation, this can be expressed as:

$$A = L + E$$

Expanding the equation a bit:

Cash + accounts receivable + all other assets = Liabilities + Equity

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.

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	

↓ ↑
Cash + Assets = Liabilities + Equity

↑ ↓
Cash + Assets = Liabilities + Equity

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	
–	
??	
30,750	

= purchase of investment

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Investment (HTM)		30,750	
	Cash			30,750

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		55,000	
	Gain on sale of building			5,000
	Buildings (net)			50,000

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:

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

↑ Cash + Assets = Liabilities + ↑ Equity

↓ Cash + Assets = Liabilities + ↓ Equity

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	LT note payable		19,000	
	Cash			19,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		182,200	
	Common shares			182,200

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Retained earnings		42,590	
	Cash			42,590

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
(60,000 + 33,000 − 54,120)	
Cash paid for interest charges	11,400
(33,000 + 3,000 − 24,600)	
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.

 A video is available on the Lyryx site. Click here to watch the video.

20.3 Statement of Cash Flows: 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	$$	
Net cash flows from operating activities (supplementary disclosures for interest, dividends and income tax are required)		$$	Net cash flows from operating activities (interest and income tax categories exist 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

Cash flows from operating activities	I/S Accounts	Changes to Working Capital Accounts	Net Cash Flow 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):

Watson Ltd.
Income Statement
For the year ended December 31, 2020

Sales	$3,500,000	1
Cost of goods sold	2,100,000	2
Gross profit	1,400,000	
Operating expenses		
Salaries and benefits expense	800,000	3
Depreciation expense	43,000	4
Travel and entertainment expense	134,000	5
Advertising expense	35,000	6
Freight-out expenses	50,000	7
Supplies and postage expense	12,000	8
Telephone and internet expense	125,000	9
Legal and professional expenses	48,000	10
Insurance expense	50,000	11
	1,297,000	
Income from operations	103,000	
Other revenue and expenses		
Dividend income	3,000	12
Interest income from investments	2,000	13
Gain from sale of building	5,000	14
Interest expense	(3,000)	15
	7,000	
Income from continuing operations before income taxes	110,000	
Income tax expense	33,000	16
Net income	77,000	

Watson Ltd.
Operating Activities

Cash flows from operating activities	I/S Accounts		Changes to Working Capital Accounts	Net Cash Flow In (Out)
Cash received from sales	$ 3,500,000	1		
Cash paid for goods and services	(2,100,000)	2		
	(134,000)	5		
	(35,000)	6		
	(50,000)	7		
	(12,000)	8		
	(125,000)	9		
	(48,000)	10		
	(50,000)	11		
Cash paid to employees	(800,000)	3		
Cash received for interest income	2,000	13		
Cash paid for interest	(3,000)	15		
Cash paid for income taxes	(33,000)	16		
Cash received for dividends	3,000	12		
Memo items:				
Depreciation expense	(43,000)	4		
Gain on sale of building	5,000	14		
	$ 77,000			

Net cash flows from operating activities

Watson Ltd.
Balance Sheet
as at December 31, 2020

	2020	2019	Change	
Current assets				
Cash	$ 307,500	$ 250,000		
Investments – trading	12,000	10,000	$ (2,000)	17
Accounts receivable (net)	249,510	165,000	(84,510)	18
Notes receivable	18,450	22,000	3,550	19
Inventory	708,970	650,000	(58,970)	20
Prepaid insurance expenses	18,450	15,000	(3,450)	21
Total current assets	1,314,880	1,112,000		
Current liabilities				
Accounts payable	$ 221,000	$ 78,000	$ 143,000	22
Accrued interest payable	24,600	33,000	(8,400)	23
Income taxes payable	54,120	60,000	(5,880)	24
Unearned revenue	25,000	225,000	(200,000)	25
Current portion of long-term notes payable	60,000	45,000	N/A	
Total current liabilities	384,720	441,000	(216,660)	

Watson Ltd.
Operating Activities

Cash flows from operating activities	I/S Accounts		Changes to Working Capital Accounts		Net Cash Flow In (Out)
Cash received from sales	$ 3,500,000	1	$ (84,510)	18	
			3,550	19	
			(200,000)	25	
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			
Cash paid to employees	(800,000)	3			
Cash received for interest income	2,000	13	(2,000)	17	
Cash paid for interest	(3,000)	15	(8,400)	23	
Cash paid for income taxes	(33,000)	16	(5,880)	24	
Cash received for dividends	3,000	12			
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)		

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:

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

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				
Cash flows from operating activities	I/S Accounts		Changes to Working Capital Accounts		Net Cash Flow 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.
Operating Activities – Indirect Method

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)

Watson Ltd.
Operating Activities – Direct Method

Cash flows from operating activities	
Cash received from sales	$ 3,219,040
Cash paid for goods and services	(2,473,420)
Cash paid to employees	(800,000)
Cash received for interest income	0
Cash paid for interest	(11,400)
Cash paid for income taxes	(38,880)
Cash received for dividends	3,000
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).

 A video is available on the Lyryx site. Click here to watch the video.

 A video is available on the Lyryx site. Click here to watch the video.

 A video is available on the Lyryx site. Click here to watch the video.

20.4 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
(60,000 + 33,000 − 54,120)	
Cash paid for interest charges	11,400
(33,000 + 3,000 − 24,600)	
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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		225,000	
	Unearned revenue			225,000

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 (15,000 × $2) 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.

20.5 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.

20.6 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	$\frac{\text{Net cash flow from operating activities}}{\text{Average current liabilities}}$	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	$\frac{\text{Net cash flow from operating activities}}{\text{Average total liabilities}}$	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% ($101,660 loss ÷ $384,720) and the cash debt coverage ratio would be a negative 16.1% ($101,660 loss ÷ $630,720). 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 site. Click here to watch the video.

20.7 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 Comprehensive Income, pension	(40,000)	(20,000)
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.

20.7.1 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 ($50,000 fair value − $47,000 original cost) 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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		50,000	
	Investment, AFS			50,000

Entry to reclassify:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Realized gain on sale (OCI/AOCI)		3,000	
	Gain on sale of AFS investment			3,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Land		180,000	
	Cash			180,000

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 ($20,000 carrying value − $15,000 loss). The accumulated depreciation for the sold machinery would be $80,000 ($100,000 original cost − $20,000 carrying cost).

Entry for the sale:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		5,000	
	Loss on sale of machinery		15,000	
	Accumulated depreciation		80,000	
	Machinery			100,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	6% bond payable		750,000	
	Contributed surplus, conversion rights		35,000	
	Common shares			785,000

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 ($500,000 – $452,000) which will be amortized.

Entry for the bond issuance:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		452,000	
	7.2% bonds payable, net of discount			452,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Pension expense		??	
	Accrued pension liability			??
	Accrued pension liability		??	
	Cash			?? (greater by $10,000)

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Common shares		430,000	
	Retained earnings		55,000	
	Cash			485,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Cash		40,000	
	Contributed surplus, stock options		15,000	
	Common shares			55,000

Entry for compensation expense:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Compensation expense		27,000	
	Contributed surplus, stock options			27,000

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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Retained earnings		144,000	
	Cash			144,000

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.

Step 1: Headings

Step 2: Net income

Step 3: Non-cash items from income statement

Step 4: Changes in working capital accounts from balance sheet

Step 5: Changes in non-current asset accounts from balance

Step 6: Changes in non-current liability and equity accounts from balance sheet

Step 7: Subtotal and reconcile cash

Ace Ltd.
Statement of Cash Flows – Indirect Method
For the year ended December 31, 2020

Cash flows from operating activities		
Net income		$ 345,000
Non-cash items (adjusted from net income)		
Depreciation expense		43,000
Loss on sale of machinery		15,000
Gain on sale of AFS investment		(3,000)
Interest expense, amortization of bond	e	1,000
Deferred tax recovery	f	(12,000)
Reduction in pension benefit liability	g	(10,000)
Compensation expense, stock option plan	h	27,000
Cash in (out) from operating working capital		
Decrease in accounts receivable ($145,000 − 110,000)		35,000
Decrease in inventory ($200,000 − 175,000)		25,000
Increase in prepaid insurance ($0 − 6,000)		(6,000)
Decrease in accounts payable ($200,000 − 300,000)		(100,000)
Increase in salaries payable ($128,000 − 125,000)		3,000
Decrease in income taxes payable ($115,000 − 120,000)		(5,000)
Net cash flows from operating activities		358,000
Cash flows from investing activities		
Sale of AFS investment	a	50,000
Purchase of AFS investment	a	(76,000)
Purchase of land	b	(180,000)
Sale of machinery	c	5,000
Net cash flows from investing activities		(201,000)
Cash flows from financing activities		
Issuance of 7.2% bonds	e	452,000
Repurchase of common shares	h	(485,000)
Exercise of stock options for common shares	h	40,000
Dividends	i	(144,000)
Net cash flows from financing activities		(137,000)
Net increase in cash flows		20,000
Cash, January 1		30,000
Cash, December 31		$ 50,000

Step 8: Disclosures

Disclosures:

Cash paid for income taxes $(\$67{,}000 + \$12{,}000 + \$5{,}000) = \$84{,}000$

Cash paid for interest charges $(\$30{,}000 - \$1{,}000$ amortization$) = \$29{,}000$

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.

20.7.2 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.**

Ace Ltd.
Statement of Cash Flows – Direct Method
For the year ended December 31, 2020

	Step 3	Step 4		Step 5
			Changes to W/C	Net cash
Cash flows from operating activities	I/S Accounts		+/- add'l adjustments	flow
Cash received from sales	$1,400,000		$ 35,000	$1,435,000
Cash paid for goods and services	(630,000)		25,000	
	(50,000)		(6,000)	
	(26,000)		(100,000)	
	(80,000)			(867,000)
Cash paid to or on behalf of employees	(120,000)		3,000	
		g	(10,000)	
		h	27,000	(100,000)
Cash received for interest income	3,000			3,000
Cash paid for interest	(30,000)	e	1,000	(29,000)
Cash paid for income taxes	(67,000)		(5,000)	
		f	(12,000)	(84,000)
Cash received for dividends	–		–	–
Memo Items				
Depreciation	(43,000)			
Gain on sale of AFS investments	3,000			
Loss on sale of machinery	(15,000)			
Net cash flows from operating activities	$ 345,000			$ 358,000

Step 6

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).

20.8 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**

  Cash equivalents are short-term, highly liquid investments that are both readily convertible to cash and carry little risk. Treasury bills, and term deposits that mature within 90 days, are examples of financial instruments that meet these two criteria and, thus, can be treated as a cash equivalent and added to cash for purposes of a statement of cash flows. Other instruments, such as publicly traded stocks, do not meet both criteria. While they may be easily traded, they carry significant risk due to market price fluctuations. For this reason, they cannot be classified as a cash equivalent. However, companies can choose whether to include cash equivalents with cash when preparing a SCF. If they do not include them with cash, then they are to be treated the same as the other working capital accounts. In which case, the accounting policy is disclosed in the notes to the financial statements.

  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**

  These are to be reported separately in the SCF.

- **Bank overdrafts**

  Bank overdrafts are generally included in the opening and closing cash balances, provided that they are an integral part of the overall cash management for the company. However, depending on local practice or other conditions, they may be excluded. Line of credit accounts that are payable on demand are examples of accounts that would be netted with cash.

- **Discontinued operations**

  The SCF begins with income before discontinued operations. Items from discontinued operations are shown separately in the operating, investing, or financing activities according to their nature. For companies following IFRS, they can also disclose cash flow information about discontinued operations in the notes to the financial statements.

- **Impairments of identifiable tangible or intangible assets**

  Any impairment write-downs reported in net income are adjusted out of net income in the operating activities as non-cash items. This is also the case with impairment reversals.

- **Investments in associates**

  The accounting treatment for investments in associates was discussed in the previous accounting courses. Companies that follow IFRS account for these investments using the equity method. With ASPE, a policy choice allows either the equity method or fair

value through net income or cost, depending upon the type of investment. Since the SCF reports cash flows, the cash dividend income received would be included in the SCF. Any investment income accrued, or unrealized gains or losses included in net income, must be adjusted out of net income as a non-cash item in operating activities.

- **Comprehensive income**

  As discussed earlier in the chapter, only net income is relevant with regard to the SCF. Comprehensive income items are excluded since they are non-cash items. For example, investments classified as "available for sale," have fair value adjustments every reporting period which are recorded to OCI rather than to net income. It is only when an AFS investment is sold that its respective accumulated unrealized gains are reclassified from OCI/AOCI to net income. When this occurs, an adjustment to net income is required in operating activities, since the gain or loss on the sale of the AFS investment is a non-cash item, the same way that a gain or loss on the sale of a building or an equipment asset is a non-cash item.

- **Liabilities**

  Netting old and new debt in the SCF is not permitted and each individual debt instrument is to be individually reported. Amortization of a discount or premium is a non-cash component of interest expense, and since interest expense is reported in net income, amortization amounts are adjusted out of net income in operating activities.

- **Leases**

  The increase in assets and liabilities due to a new finance lease is treated as a non-cash transaction and is excluded from the SCF, although supplementary disclosures are required. Cash payments made or received regarding a lease obligation are reported as a financing activity for the lessee.

- **Complex financial instruments**

  Upon issuance of a hybrid instrument such as a convertible bond, only one cash inflow is recorded in the SCF for both the debt and the equity portion of the instrument. For more details regarding hybrid instruments, refer to the earlier complex financial instruments chapter.

- **Stock splits and dividends**

  As these are non-cash transactions, they are excluded from the SCF, although supplementary disclosures are required.

- **Estimate for uncollectible accounts**

  In cases where the balance sheet shows accounts receivable as a gross amount with a separate AFDA contra account, the indirect method will net the two accounts together and reports this net change as a change in the accounts receivable working capital account. However, with the direct method, an analysis is done on the AFDA to determine the current period estimate for uncollectible accounts and adjusts this amount from sales to cash paid for goods and services. This is done because the estimate for uncollectible

accounts is debited to bad debt expense, which is usually included as other expenses within the cash paid for goods and services category.

20.9 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.

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.

References

CPA Canada. (2016). *CPA handbook*. Toronto, ON: CPA Canada.

Exercises

EXERCISE 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 $A = L + E$ 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.

EXERCISE 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.

EXERCISE 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)?

EXERCISE 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.

EXERCISE 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.

EXERCISE 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.

EXERCISE 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.

EXERCISE 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.

Chapter 21

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)

Chapter 21 Learning Objectives

After completing this chapter, you should be able to:

LO 1: Describe the different types of accounting changes.

LO 2: Apply the appropriate method of accounting for an accounting policy change.

LO 3: Apply the appropriate method of accounting for an accounting estimate change.

LO 4: Apply the appropriate method of accounting for an error correction.

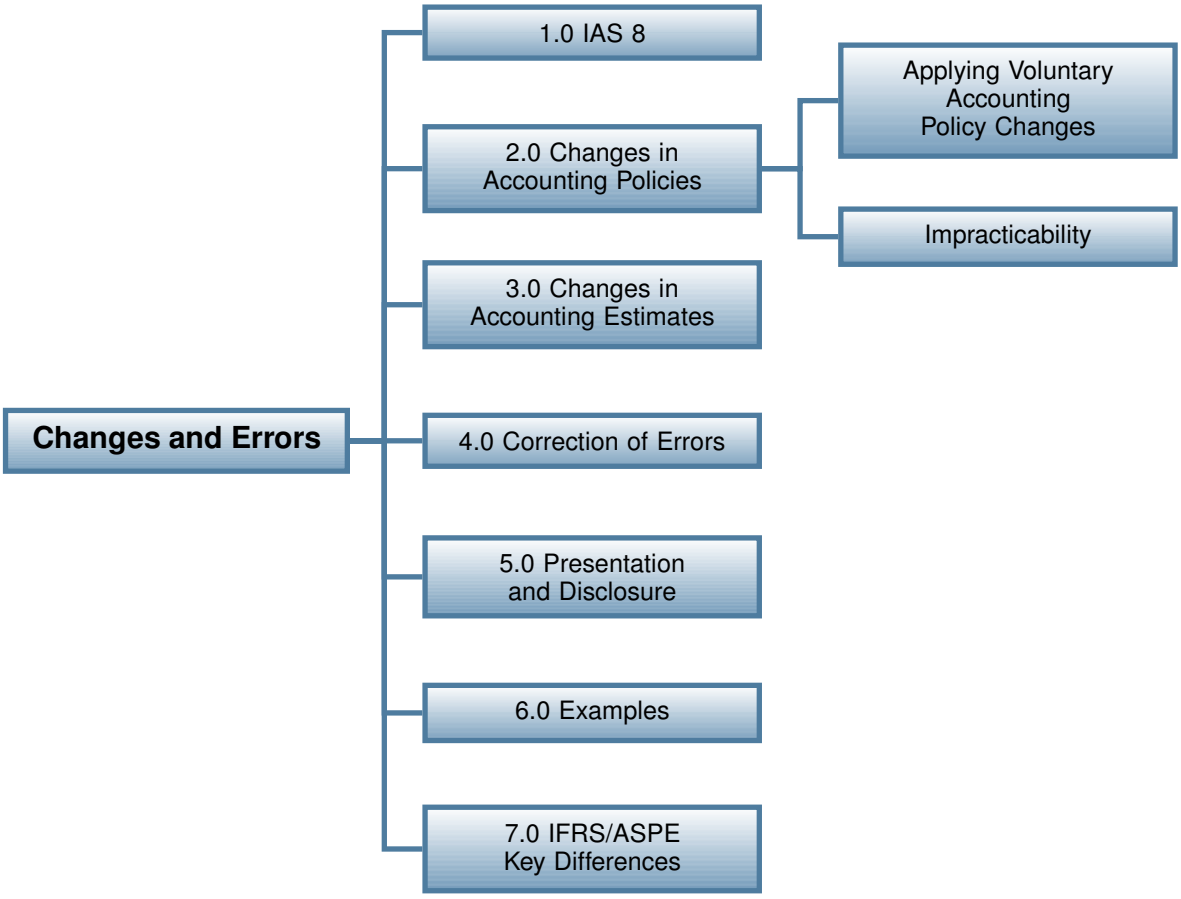
LO 5: Identify the disclosure requirements for different types of accounting changes.

LO 6: 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



21.1 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.

21.2 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.

21.2.1 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 ($2,000,000 − $1,850,000) during the year, so net income is reduced accordingly from $680,000 to $530,000. In 2021, the fair value increases by $250,000 ($2,100,000 − $1,850,000) 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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Investment in land		100,000	
	Deferred tax liability			20,000
	Retained earnings			80,000

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.

21.2.2 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.

21.3 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 ($120,000 ÷ 8 years) per year. Thus, on January 1, 2022, the carrying amount of the machine would have been $90,000 ($120,000 − ($15,000 × 2 years)). On January 1, 2022, the remaining useful life is now four years (6 − 2). The new depreciation amount will therefore be $22,500 ($90,000 ÷ 4 years) per year. On December 31, 2022, the following journal entry will be made:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Depreciation expense		22,500	
	Accumulated depreciation.....			22,500

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.

21.4 Correction 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 (Draft)	2021
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:

General Journal				
Date	Account/Explanation	PR	Debit	Credit
	Vehicle		50,000	
	Depreciation expense		10,000	
	Accumulated depreciation			30,000
	Income taxes payable			4,000
	Income tax expense			2,000
	Retained earnings			24,000

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, $32,000 − $8,000. 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 ($1,414,000 − $1,398,000 = $16,000) can be derived directly from the journal entry by adding the prior period retained earnings adjustment to the current year expense adjustments ($24,000 + $2,000 − $10,000 = $16,000). 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 site. Click here to watch the video.

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 A video is available on the Lyryx site. Click here to watch the video.

21.5 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.

21.6 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.

21.7 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.

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.

References

Barnes & Noble. (2014). *2013 annual report*. Retrieved from http://www.barnesandnobleinc.com/for_investors/annual_reports/2013_bn_annual_report.pdf

Dolmetsch, C. (2013, December 18). Barnes & Noble shareholder sues over SEC investigation. *Bloomberg.com*. Retrieved from http://www.bloomberg.com/news/articles/2013-12-18/barnes-noble-sued-by-shareholder-over-restatement

Solomon, B. (2013, December 6). Were nook's books cooked? Barnes & Noble's accounting investigated by SEC. *Forbes.com*. Retrieved from http://www.forbes.com/sites/briansolomon/2013/12/06/were-nooks-books-cooked-barnes-nobles-accounting-investigated-by-sec/#64fe44a048a8

Exercises

EXERCISE 21–1

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.	

EXERCISE 21–2

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.

EXERCISE 21–3

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.

EXERCISE 21–4

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.

EXERCISE 21–5

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.

EXERCISE 21–6

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.

EXERCISE 21–7

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.

EXERCISE 21–8

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%.

EXERCISE 21–9

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		

Chapter 22

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)

Chapter 22 Learning Objectives

After completing this chapter, you should be able to:

LO 1: Discuss the rationale and methods of full disclosure in corporate reporting.

LO 2: Identify the issues and disclosure requirements for related parties.

LO 3: Describe the appropriate accounting and disclosure requirements for events occurring after the reporting period.

LO 4: Describe the purpose of the audit opinion and the contents of the auditor's report.

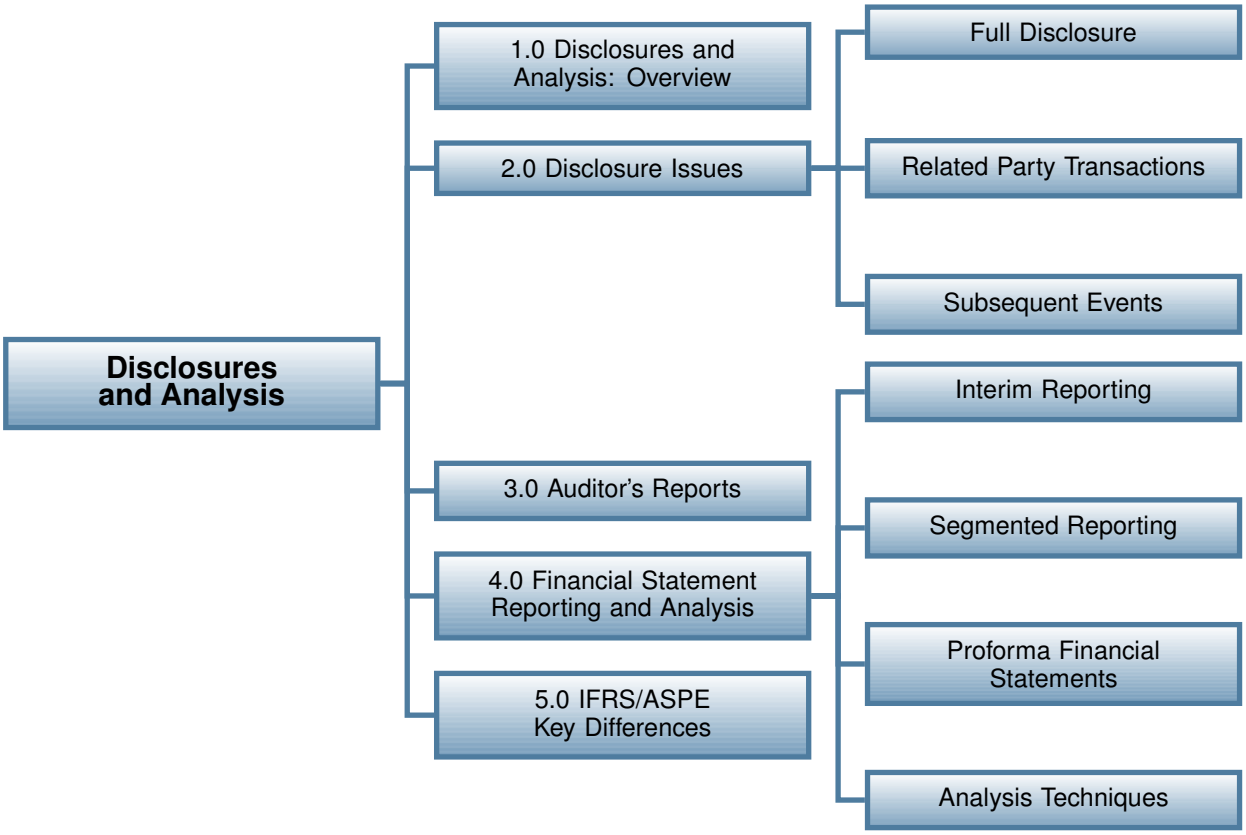
LO 5: Explain the various financial statement analysis tools and techniques.

LO 6: 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



22.1 Disclosures and Analysis: 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.

22.2 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.

22.2.1 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.

[1] https://s22.q4cdn.com/405442328/files/doc_financials/en/2015/annual/Canadian-Tire-Corporation_2015-Annual-Report_ENG.pdf

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.

22.2.2 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.

22.2.3 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

[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.

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.

22.3 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.

22.4 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, prof-

itability, 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.

22.4.1 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.).

[3] http://www.suncor.com/investor-centre/financial-reports/annual-disclosure

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.

22.4.2 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 in $ millions				10% Revenue	10% Profit/loss	10% Assets
Segment	Total Revenue	Reported Profit/loss	Assets	Threshold #1	Threshold #2	Threshold #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 $(10\% \times 4{,}200) = \$420$ threshold
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 $(10\% \times \$137) = \$13.7$ 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 $(10\% \times \$895) = \$89.5$ 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 $3,150 ($4,200 $\times$ 75%) , and all five segments meeting at least one of the three test criteria above total $3,500 ($500 $+$ 800$+$600$+$900$+$700). 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.

22.4.3 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.

[4] http://www.suncor.com/investor-centre/financial-reports/annual-disclosure

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.

22.4.4 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	$\frac{\text{Current assets}}{\text{Current liabilities}}$	ability to pay short term debt
Quick ratio (or acid test ratio)	$\frac{\text{Cash, marketable securities and net receivables}}{\text{Current liabilities}}$	ability to pay short term debt using near-cash assets
Current cash debt coverage ratio	$\frac{\text{Net cash provided by operating activities}}{\text{Average current liabilities}}$	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	$\frac{\text{Net income}}{\text{Net Sales}} \times 100\%$	net income for each dollar of sales
Return on total assets	$\frac{\text{Net income}}{\text{Average total assets}} \times 100\%$	overall profitability of assets
Return on common shareholders' equity	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Average common shareholders' equity(includes retained earnings/deficit)}} \times 100\%$	overall profitability of common shareholders' investment
Earnings per share	$\frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average common shares outstanding (WACS)}}$	net income for each common share
Payout ratio	$\frac{\text{Cash dividends}}{\text{Net income}} \times 100\%$	percentage of earnings distributed as dividends

Ratio	Formula	Purpose
Activity ratios – ability to effectively use assets		
Accounts receivable turnover	$\frac{\text{Net sales}}{\text{Average net accounts receivable}}$	how quickly accounts receivable is collected
Days' sales uncollected	$\frac{\text{Accounts receivable}}{\text{Net sales}} \times 365$	average # of days that sales are uncollected (this can be compared to the credit terms of the company)
Inventory turnover	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$	how quickly inventory is sold
Days' sales in inventory	$\frac{\text{Ending inventory}}{\text{Cost of Goods Sold}} \times 365$	average # of days to sell inventory.
Accounts payable turnover	$\frac{\text{Cost of goods sold}}{\text{Average accounts payable}}$	how quickly accounts payable is paid
Asset turnover	$\frac{\text{Net sales}}{\text{Average total assets}}$	the ability of assets to generate sales

Ratio	Formula	Purpose
Coverage – ability to pay long-term obligations		
Debt ratio	$\frac{\text{Total liabilities}}{\text{Total assets}} \times 100\%$	percentage of assets provided by creditors*
Equity ratio	$\frac{\text{Total equity}}{\text{Total assets}} \times 100\%$	percentage of assets provided by investors*
Cash debt coverage ratio	$\frac{\text{Net cash from operating activities}}{\text{Average total liabilities}} \times 100\%$	the ability to pay current and long-term debt from net cash from operating activities (statement of cash flows)
Book value per common share	$\frac{\text{Common shareholders' equity}}{\text{\# of common shares outstanding}}$	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; Total liabilities ÷ Total equity.
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.

22.5 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.

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.

References

Business Insider. (2015, December 30). *China firm to investors: A thief took my financial statements.* Retrieved from http://www.businessinsider.com/afp-china-firm-to-investors-a-thief-took-my-financial-statements-2015-12

Canadian Tire Corporation. (2016). *Annual report 2015.* Retrieved from http://s2.q4cdn.com/913390117/files/doc_financials/annual/2015/Canadian-Tire-Corporation_2015-Annual-Report_ENG.pdf

CPA Canada. (2016). *CPA Canada handbook.* Toronto, ON: CPA Canada.

Suncor Energy Inc. (n.d.). *Annual Report 2015*. Retrieved from http://www.suncor.com/%7E/media/Files/PDF/Investor%20Centre/Annual%20Reports/2015%20AR/2015%20English/2015%20Annual%20Message%20to%20SH%20EN_FINAL.ashx?la=en-CA

Weintraub, A. (2016, January 7). *China Animal Healthcare creates embarrassment for stakeholder Lilly.* FiercePharma. Retrieved from http://www.fiercepharma.com/animal-health/china-animal-healthcare-creates-embarrassment-for-stakeholder-lilly

Exercises

EXERCISE 22–1

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.

EXERCISE 22–2

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?

EXERCISE 22–3

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.

EXERCISE 22–4

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.

EXERCISE 22–5

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.

EXERCISE 22–6

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.

EXERCISE 22–7

Regarding interim reporting, what accounting issues can occur? Is there a difference between IFRS and ASPE regarding interim reporting?

EXERCISE 22–8

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?

EXERCISE 22–9

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 construction	220,000	345,000	
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.

EXERCISE 22–10

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 assets			$1,977,500
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 outstanding, 15,900 shares		159,000	
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.

EXERCISE 22–11

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?

EXERCISE 22–12

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.

EXERCISE 22–13

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.

EXERCISE 22–14

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.

Solutions To Exercises

Chapter 12 Solutions

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	$17 \times \$120$	12/12	\$2,040
Two-year subscription	$24 \times \$200$	12/24	\$2,400
Three-year subscription	$30 \times \$280$	12/36	\$2,800

	July 2021	**Factor**	**Revenue**
One-year subscription	$18 \times \$120$	6/12	\$1,080
Two-year subscription	$20 \times \$200$	6/24	\$1,000
Three-year subscription	$22 \times \$280$	6/36	\$1,027

	December 2021	**Factor**	**Revenue**
One-year subscription	$12 \times \$120$	1/12	\$120
Two-year subscription	$30 \times \$200$	1/24	\$250
Three-year subscription	$36 \times \$280$	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	$17 \times \$120$	0/12	\$0
Two-year subscription	$24 \times \$200$	12/24	\$2,400
Three-year subscription	$30 \times \$280$	12/36	\$2,800

	July 2021	Factor	Current Liability
One-year subscription	$18 \times \$120$	6/12	\$1,080
Two-year subscription	$20 \times \$200$	12/24	\$2,000
Three-year subscription	$22 \times \$280$	12/36	\$2,053

	December 2021	Factor	Current Liability
One-year subscription	$12 \times \$120$	11/12	\$1,320
Two-year subscription	$30 \times \$200$	12/24	\$3,000
Three-year subscription	$36 \times \$280$	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 $\times$ \$2.70 $=$ \$97,200

Fair value per cup = \$97,200 $\div$ $(36{,}000 + 2{,}000)$ $=$ \$2.56 per cup

(Denominator is total cups sold plus expected redemptions.)

Unearned revenue = 2,000 expected redemptions $\times$ \$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

$$\text{Present value of legal and constructive obligation} = (\text{FV } 3{,}500{,}000,\ \text{n } 10,\ \text{i } 11\%)$$
$$= \$1{,}232{,}646$$

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

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

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.

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 Solutions

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:

$$\$800{,}000 \times 0.99 = \$792{,}000 - 7{,}000 = \$785{,}000 \text{ bond value}$$
$$\$800{,}000 \times 5\% = 40{,}000 \div 2 = 20{,}000 \text{ semi-annual interest payment}$$

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: $(800{,}000 \times 0.99) + (800{,}000 \times 0.05 \times 4 \div 12) - 7{,}000$			
	For Bond payable: $(800{,}000 \times 0.99) - 7{,}000$			
Jul 1, 2021	Interest expense		20,218	
	Bond payable			218
	Cash			20,000
	For Interest expense: $(785{,}000 \times 2.5756\%)$			
Dec 31, 2021	Interest expense		20,224	
	Bond payable			224
	Interest payable			20,000
	For Interest expense: $((785{,}000 + 218) \times 2.5756\%)$			
	For Interest payable: $(800{,}000 \times 0.05 \times 6 \div 12)$			

c.

Harper Boyle Construction 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 $\times$ 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		

General Journal				
Date	Account/Explanation	PR	Debit	Credit
Dec 31, 2022	Interest expense		20,860	
	Note payable		24,640	
	Cash			45,500

d.

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			22,256
	($150,000 − $127,744)			

Interest schedule:

Payment 9%	Interest @ 10%	Adjust to 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 Solutions

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

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: $((4{,}500 \times \$1{,}000 \times 1.01) + 90{,}000)$, for Bonds payable: $((4{,}500 \times \$1{,}000 \times 1.01) - 54{,}000)$, for Contributed surplus: $(4{,}500 \times 2 = 9{,}000 \times \$6)$, for Interest expense: $(\$4{,}500{,}000 \times 8\% \times 3 \div 12)$			

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: $((4{,}500 \times \$1{,}000 \times 1.01) + 90{,}000)$, for Bonds payable: $(4{,}500 \times \$1{,}000 \times 1.01)$, for Interest expense: $(\$4{,}500{,}000 \times 8\% \times 3 \div 12)$			

EXERCISE 14–10

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

* $1{,}443{,}138 \times 10\% - 135{,}000 = 9{,}314$
$1{,}443{,}138 + 9{,}314 = 1{,}452{,}452 \times 10\% - 135{,}000 = 10{,}245$
$1{,}452{,}452 + 10{,}245 = 1{,}462{,}697$

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
** $1{,}462{,}697 - 1{,}470{,}000 = 7{,}303$
*** $10{,}000 - 7{,}303 = 2{,}697$

EXERCISE 14–11

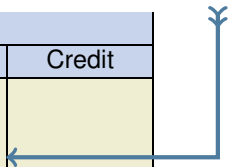
a.

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



* $922{,}687 \times 8\% = 73{,}815 - 50{,}000 = 23{,}815$
$922{,}687 + 23{,}815 = 946{,}502 \times 8\% = 75{,}720 - 50{,}000 = 25{,}720$
$946{,}502 + 25{,}720 = 972{,}222$

** $972{,}222 - 981{,}462 = 9{,}240$

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 Solutions

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
	$(10{,}000 \times 25\%)$			
2022	Current tax expense		11,000	
	Tax payable			11,000
	$(50{,}000 \times 20\%)$			
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
	$(112{,}000 - 55{,}000 - 10{,}000) = 47{,}000$; $47{,}000 \times 20\%$			
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
	$(10{,}000 \times 25\%)$			
2022	Current tax expense		11,000	
	Tax payable			11,000
	$(50{,}000 \times 20\%)$			
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 × 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 $\$295{,}000 \times 30\% = \$88{,}500$. This will offset the current tax expense of $\$345{,}000 \times 30\% = \$103{,}500$, 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

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 $= 27{,}000 - (1 \div 2 \times 28{,}800)$

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 Solutions

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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
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 gain: assets		20,500 DR				20,500 CR
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
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 loss: assets		52,000 CR				52,000 DR
Remeasurement loss: DBO	176,000 CR					176,000 DR
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
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 gain: assets		2,000 DR				2,000 CR
Remeasurement gain: DBO	27,000 DR					27,000 CR
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
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 loss: assets***		15,500 CR				15,500 DR
Remeasurement loss: DBO	0 CR					0 DR
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense	OCI
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 loss: assets		15,000 CR				15,000 DR
Remeasurement loss: DBO	42,000 CR					42,000 DR
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			

* $732,340 \times 8\% = \$58,587$

** $610,000 \times 8\% = \$48,800$

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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense
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 gain: assets		20,500 DR			20,500 CR
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 Assets	Net Defined Benefit Balance	Cash	Annual Pension Expense
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 loss: assets		52,000 CR			52,000 DR
Remeasurement loss: DBO	176,000 CR				176,000 DR
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 Solutions

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:	$6 \times \$25{,}100$	=	$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.

  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)

Date	Annual Lease Payment Excluding Executory Costs)	Interest @ 9%	Reduction of Lease Obligation	Balance Lease 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.

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	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			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	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

   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

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)**

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	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 × 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	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.

  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	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 Solutions

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 (20,000 × $15)			300,000
Feb 1	Incorporation costs		9,000	
	Common shares			9,000
Mar 15	Cash		500,000	
	Preferred shares (10,000 × $50)			500,000
Apr 30	Equipment		50,000	
	Common shares			50,000
Jun 15	Cash		125,000	
	Common shares (5,000 × $25)			125,000

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)			

$$\text{Note: Average issue cost of shares} = \frac{((150{,}000 - 10{,}000) \times \$25) + (20{,}000 \times \$22)}{160{,}000 \text{ shares}}$$
$$= \$24.625 \text{ per share}$$

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			250,000
	(100,000 × 10% × $25)			
May 15	Retained earnings		88,000	
	Dividend payable			88,000
	(100,000 × 110% × $0.80)			

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			660,000
	(100,000 × 110% × 8 × $0.75)			

May 30 – no journal entry required

General Journal				
Date	Account/Explanation	PR	Debit	Credit
May 31	Dividend payable		660,000	
	Inventory			660,000
	(100,000 × 110% × 8 × $0.75)			

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 × 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.

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 Solutions

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 Shares Outstanding ×Factor ×Fraction of the Year
2021						
1	Jan 1	Opening balance	100,000	2 × 1.15	2/12	38,333
	Jan 1 – Mar 1					
2	Mar 1	6,000 shares issued	6,000			
	Mar 1 – Jul 1		106,000	2 × 1.15	4/12	81,266
3	Jul 1	retired 2,000 shares	(2,000)			
	Jul 1 – Oct 1		104,000	2× 1.15	3/12	59,800
4	Oct 1	15% stock dividend	×1.15			
	Oct 1 – Dec 1		119,600	2×	2/12	39,866
5	Dec 1	10,000 shares issued	10,000			
	Dec 1 – Dec 31		129,600	2×*	1/12	21,600
6	Subsequent event	Stock split 2-for-1	×2			
	Total WACS		259,200		12/12	240,865

*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 (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.

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	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	535,000		3/12	133,750
	Total WACS		535,000		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

EXERCISE 19–3

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:

$$\frac{\$3{,}500{,}000 - 0}{1{,}809{,}500}$$ (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

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.

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:

$$\text{Basic EPS} = (\$4{,}500{,}000) \div 1{,}066{,}667 = \$4.22$$

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 $= \$350{,}000 \div 200{,}000 =$ $\underline{\underline{\$1.75}}$

Diluted EPS $= \$350{,}000 \div 200{,}000 + 4{,}091^{*} =$ $\underline{\underline{\$1.71}}$

* Additional common shares using the treasury method:

Shares purchased	45,000	
Less shares retired $(45{,}000 \times \$10) \div \$11$	(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:

$$45{,}000 \text{ options} \times ((\$11 - \$10) \div \$11) = 4{,}091 \text{ additional shares}$$

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

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

* $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)

EXERCISE 19–9

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

Chapter 20 Solutions

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

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

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
Cash flows from operating activities:	I/S Accounts	Changes to W/C +/- add'l adjustments	Net 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
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			78,000
	($98,000 − $100,000 + $80,000)			

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 Solutions

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 $= (100{,}000 - 10{,}000) \div 10$ years $= 9{,}000$ per year

   Amortization to 1 January 2021 $= 9{,}000 \times 3$ years $= 27{,}000$

   NBV at 1 January 2021 $= (100{,}000 - 27{,}000) = 73{,}000$

   New rate $= 73{,}000 \div 2$ 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	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: $\$50{,}000 \div 5$ years $= \$10{,}000$ per year

Depreciation should have been: $\$50{,}000 - \$5{,}000 \div 5$ 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

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 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 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 Solutions

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 × 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.

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:

$$\begin{aligned}\text{Days' sales in inventory} &= \frac{\text{Ending inventory}}{\text{COGS}} \times 365 \\ &= \frac{55{,}000}{500{,}000} \times 365 \\ &= 40 \text{ days}\end{aligned}$$

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.

$$\begin{aligned}\text{Accounts payable turnover} &= \frac{\text{COGS}}{\text{Average accounts payable}} \\ &= \frac{500{,}000}{265{,}200} \\ &= 1.89 \text{ times or every } 194 \text{ days}\end{aligned}$$

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.

$$\begin{aligned}\text{Book value per common share} &= \frac{\text{Equity applicable to common shares}}{\text{Number of common shares outstanding}} \\ &= \frac{1{,}399{,}400}{15{,}900} \\ &= \$88.01 \text{ per share}\end{aligned}$$

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.

$$\begin{aligned}\text{Book value per preferred share} &= \frac{\text{Equity applicable to preferred shares}}{\text{Number of preferred shares outstanding}} \\ &= \frac{93{,}600}{3{,}744} \\ &= \$25.00 \text{ per share}\end{aligned}$$

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.

$1{,}500 \div \frac{(310 + 180)}{2} = 6.12$ 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 $(\$172{,}700 \div \$183{,}550)^{*} \times 100$

* (49,325 + 40,000 + 50,000 − 46,000 + 79,375 net income**) = 172,700
** Net income $(2{,}000 + 314{,}000 - 22{,}000 - 20{,}000 - 123{,}900 - 4{,}875 - 5{,}000 - 1{,}200 - 17{,}900 - 41{,}750) = 79{,}375$

EXERCISE 22–13

Calculations:

	2020	2019
Current ratio	$(60 + 80 + 240) \div 180 = 2.11$	$(10 + 70 + 50) \div 75 = 1.73$
Acid-test ratio	$(60 + 80) \div 180 = 0.78$	$(10 + 70) \div 75 = 1.07$

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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