

CHAPTER 21

Accounting for Leases

LEARNING OBJECTIVES

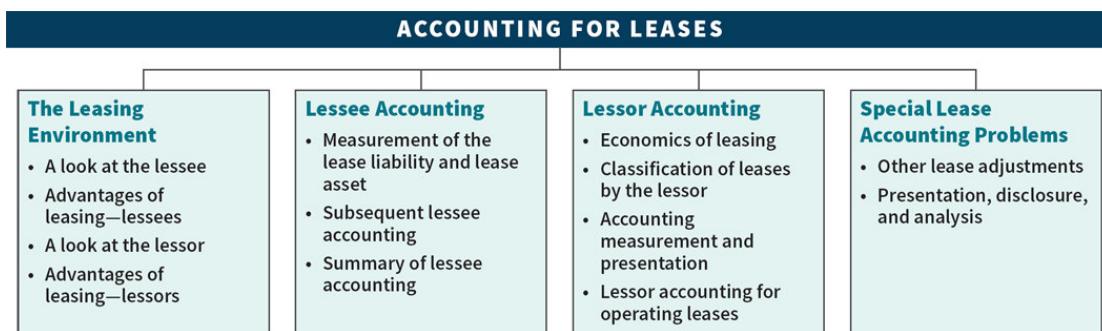
After studying this chapter, you should be able to:

1. Describe the environment related to leasing transactions.
2. Explain the accounting for leases by lessees.
3. Explain the accounting for leases by lessors.
4. Discuss the accounting and reporting for special features of lease arrangements.

This chapter also includes numerous conceptual discussions that are integral to the topics presented here.

PREVIEW OF CHAPTER 21

The following opening story highlights the substantial impact the new leasing standard will have on companies' statements of financial position. In this chapter, we discuss the accounting and reporting issues related to leases under this new standard. The content and organization of the chapter are as follows.

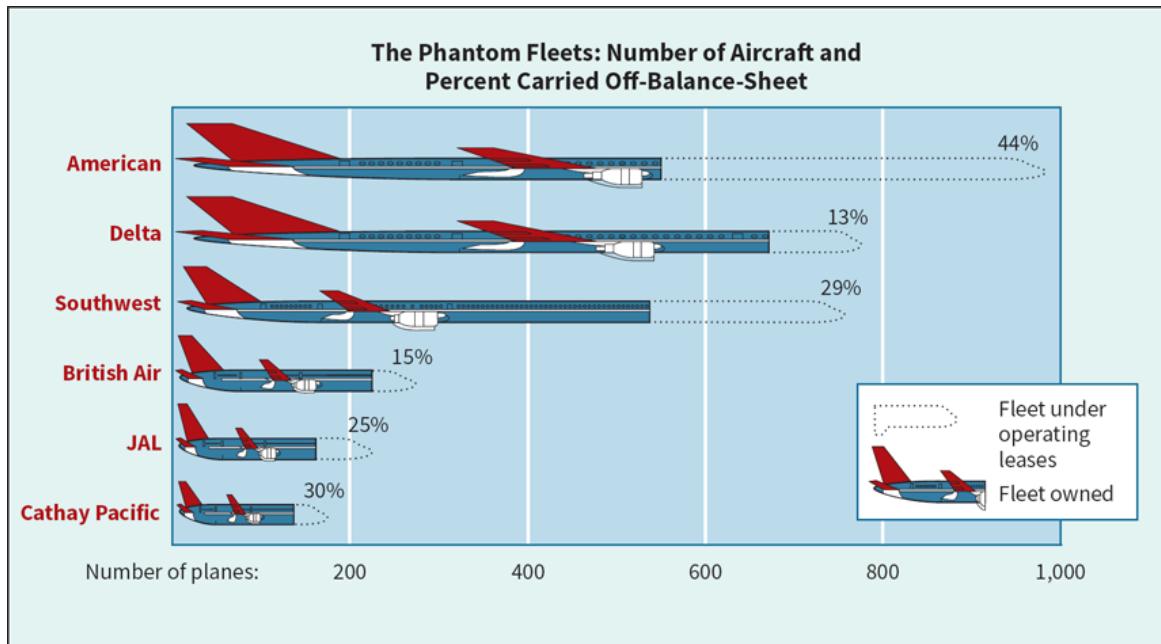


Times Are A-Changing

Leasing has grown tremendously in popularity. Today, it is the fastest growing form of capital investment. Instead of borrowing money to buy an airplane, computer, nuclear core, or satellite, a company makes periodic payments to lease these assets. Even gambling casinos lease their slot machines. Companies that

lease tend to be smaller and high growth, and are in technology-oriented industries.

A classic example is the airline industry. Many travelers on airlines such as **British Airways** (GRB), **Cathay Pacific** (CHN), and **Japan Airlines** (JPN) believe these airlines own the planes on which they are flying. Often, this is not the case. Airlines have leased many of their airplanes due to the favorable accounting treatment they received if they leased rather than purchased. The following chart shows the off-balance-sheet lease percentages for a number of major international airlines, just before the issuance of a new lease accounting standard in 2016.



The same has held true for many other industries as well. What was this favorable accounting treatment? The previous IASB standard on leasing depended on whether a lease qualified as an operating lease or a finance lease. In an operating lease, companies did not report an asset on their statement of financial position for the item they leased, nor did they report a related liability for their lease obligation. Only if the company had a finance lease would companies have to report an asset and a related liability on the statement of financial position. However, in 2016 the IASB issued a new standard on leasing that mandates that all companies will have to report both assets and related liabilities for practically all lease arrangements.

Companies have implemented the new rules in 2019 and 2020. Some airlines are seeing a silver lining to the new rules, as a number of their leases involve variable payments, which under the new rules are not subject to capitalization. Nonetheless, most companies will see a significant effect on their reported assets and liabilities. For example, retailers such as **Marks and Spencer plc** (GBR) and

Carrefour SA (FRA) are experiencing substantial increases in their debt ratios, such as debt to equity and debt to operating income, as a result of the new standard. Overall, a significant number of retailers are seeing an increase of over 25 percent in their reported debt. Sir David Tweedie, the IASB's previous chairman, is known for saying that one day he would like to fly on an airplane that actually appears on that company's statement of financial position. Well, Sir David, get ready because your wish is coming true.

Review and Practice

Go to the [Review and Practice](#) section at the end of the chapter for a targeted summary review and practice problem with solution. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available online.

The Leasing Environment

LEARNING OBJECTIVE 1

Describe the environment related to leasing transactions.

A lease is a contractual agreement between a lessor and a lessee. This arrangement gives the **lessee** the right to use specific property, which is owned by the **lessor**, for a specified period of time. In return for the use of the property, the lessee makes rental payments over the lease term to the lessor.

A Look at the Lessee

Aristotle once said, “Wealth does not lie in ownership but in the use of things!” Clearly, many global companies have decided that Aristotle is right, as they have become heavily involved in leasing assets rather than owning them. For example, according to a recent *Global Leasing Report* (Brendan Gleeson, White Clarke Group, 2019), the top 50 companies reported leasing volume exceeding \$1.3 trillion. Three regions, North America, Europe, and Asia, account for more than 90 percent of total lease volume. Remember that these statistics are just for equipment leasing. Add in real estate leasing, which is probably larger, and we are talking about a very large and growing business, one that was at least in part driven by accounting.

What types of assets are being leased? As the opening story indicated, any type of equipment can be leased, such as railcars, helicopters, bulldozers, barges, CT scanners and computers. [Illustration 21.1](#) summarizes what several major companies are leasing.

Company	Description
Carrefour (FRA)	“Stores not fully owned are rented under leasing agreements. The Group also owns shopping centers, mainly anchored by its hypermarkets and supermarkets, that are rented out.”
Ahold Delhaize Group (NLD/BEL)	“Delhaize Group operates a significant number of its stores under finance lease arrangements. Various properties leased are (partially or in full) subleased to third parties, where the Group is therefore acting as a lessor. Lease terms (including reasonably certain renewal options) generally range from 1 to 36 years with renewal options ranging from 3 to 30 years.”
Diageo (GBR)	“The company owns or leases land and buildings throughout the world. Diageo’s largest individual facility, in terms of net book value of property, is St James’s Gate brewery in Dublin. Approximately 96% by value of the group’s properties are owned and approximately 3% are held under leases running for 50 years or longer.”
Marks and Spencer plc (GBR)	“The Group leases various stores, offices, warehouses and equipment under non-cancellable lease agreements. The leases have varying terms, escalation clauses and renewal rights.”
McDonald’s Corp. (USA)	“The Company was the lessee at 15,235 restaurant locations through ground leases (the Company leases the land and the Company or franchisee owns the building) and through improved leases (the Company leases land and buildings).”
RELX (GBR/NLD)	“The company leases various properties, principally offices and warehouses, which have varying terms and renewal rights that are typical to the territory in which they are located.”

ILLUSTRATION 21.1 What Do Companies Lease?

The largest group of leased equipment involves information technology equipment, followed by assets in the transportation area (trucks, aircraft, rail), and then construction and agriculture.

Advantages of Leasing—Lessees

From the perspective of the lessee, leasing can provide significant advantages, such as the following:

- 1. 100% financing at fixed rates.** Leases are often signed without requiring any money down from the lessee. This helps the lessee conserve scarce cash—an especially desirable feature for new and developing companies. In addition, lease payments often remain fixed, which protects the lessee against

inflation and increases in the cost of money. The following comment explains why companies choose a lease instead of a conventional loan: “Our local bank finally came up to 80 percent of the purchase price but wouldn’t go any higher, and they wanted a floating interest rate. We just couldn’t afford the down payment, and we needed to lock in a final payment rate we knew we could live with.”

2. **Protection against obsolescence.** Leasing equipment reduces risk of obsolescence to the lessee and in many cases passes the risk of residual value to the lessor. For example, **Perrigo Company** (IRL) (a pharmaceutical maker) leases computers. Under the lease agreement, Perrigo may turn in an old computer for a new model at any time, canceling the old lease and writing a new one. The lessor adds the cost of the new lease to the balance due on the old lease, less the old computer’s trade-in value. As one treasurer remarked, “Our instinct is to purchase.” But if a new computer is likely to come along in a short time, “then leasing is just a heck of a lot more convenient than purchasing.” Naturally, the lessor also protects itself by requiring the lessee to pay higher rental payments or provide additional payments if the lessee does not maintain the asset.
3. **Flexibility.** Lease agreements may contain less restrictive provisions than other debt agreements. Innovative lessors can tailor a lease agreement to the lessee’s special needs. For instance, the duration of the lease—the **lease term**—may be anything from a short period of time to the entire expected economic life of the asset. The rental payments may be level from year to year, or they may increase or decrease in amount. The payment amount may be predetermined or may vary with sales, the prime interest rate, or some other factor. In most cases, the rent is set to enable the lessor to recover the cost of the asset plus a fair return over the life of the lease.
4. **Less costly financing.** Some companies find leasing cheaper than other forms of financing. For example, start-up companies in depressed industries or companies in low tax brackets may lease to claim tax benefits that they might otherwise lose. Depreciation deductions offer no benefit to companies that have little if any taxable income. Through leasing, the leasing companies or financial institutions use these tax benefits. They can then pass some of these tax benefits back to the user of the asset in the form of lower rental payments.

A Look at the Lessor

Who are the lessors that own the property being leased? They generally fall into one of three categories:

1. Banks.

2. Captive leasing companies.
3. Independents.

According to recent data from the *2019 Equipment Leasing & Finance Industry Horizon Report* on new business volume by lessor type, banks hold about 43 percent of the market, followed by captives at 33 percent. Independents and others had the remaining 24 percent of new business.

Banks

Banks are the largest players in the leasing business. They have low-cost funds, which give them the advantage of being able to purchase assets at less cost than their competitors. Banks have been aggressive in the leasing markets. Deciding that there is money to be made in leasing, banks have expanded their product lines in this area. Finally, leasing transactions are now quite standardized, which gives banks an advantage because they do not have to be as innovative in structuring lease arrangements. Thus, banks like **Credit Suisse** (CHE), **Chase** (USA), **Barclays** (GBR), and **Deutsche Bank** (DEU) have substantial leasing subsidiaries.

Captive Leasing Companies

Captive leasing companies are subsidiaries whose primary business is to perform leasing operations for the parent company. Companies like **CNH Capital** (NLD) (for CNH Global), **BMW Financial Services** (DEU) (for BMW), and **IBM Global Financing** (USA) (for IBM) facilitate the sale of products to consumers. For example, suppose that **Ivanhoe Mines Ltd.** (CAN) wants to acquire a number of earthmovers from CNH Global. In this case, CNH Capital will offer to structure the transaction as a lease rather than as a purchase. Thus, CNH Capital provides the financing rather than an outside financial institution.

Captive leasing companies have the point-of-sale advantage in finding leasing customers. That is, as soon as CNH Global receives a possible equipment order, its leasing subsidiary can quickly develop a lease-financing arrangement. Furthermore, the captive lessor has product knowledge that gives it an advantage when financing the parent's product. The current trend is for captives to focus primarily on their companies' products rather than do general lease financing. For example, **Boeing Capital** (USA) and **UPS Capital** (USA) are two captives that have left the general finance business to focus exclusively on their parent companies' products.

Independents

Independents are the final category of lessors. Their market share has dropped fairly dramatically as banks and captive leasing companies have become more

aggressive in the lease-financing area. Independents do not have point-of-sale access, nor do they have a low cost of funds advantage. What they are often good at is developing innovative contracts for lessees. In addition, they are starting to act as captive finance companies for some companies that do not have leasing subsidiaries. For example, **AerCap** (IRL) is one of the world's largest independent lessors.

Advantages of Leasing—Lessors

Lessors find leasing attractive because:

1. It often provides **profitable interest margins**.
2. It can **stimulate sales** of a lessor's product whether it be from a dealer (lessor) or a manufacturer (lessor).
3. It often provides **tax benefits** to various parties in the lease, which enhances the return to all the parties involved, including the lessor. To illustrate, **Airbus** (FRA) might sell one of its A320 planes to a wealthy investor who does not need a plane but could use the tax benefit. The investor (the lessor) then leases the plane to a foreign airline, to which the tax benefit is of no use. Everyone gains. Airbus sells its airplane, the investor receives the tax benefit, and the foreign airline receives a lower rental rate because the lessor is able to use the tax benefit.
4. It can provide a **high residual value to the lessor** upon the return of the property at the end of the lease term. Residual values can sometimes provide large profits. **Citigroup** (USA) at one time estimated that the commercial aircraft it was leasing to the airline industry would have a residual value of five percent of the purchase price. It turned out that the aircraft were worth 150 percent of their cost—a handsome profit. At the same time, if residual values decline, lessors can suffer losses when less-valuable leased assets are returned at the conclusion of the lease. At one time, automaker **Ford** (USA) took a \$2.1 billion write-down on its lease portfolio, when rising gas prices spurred dramatic declines in the resale values of leased trucks and SUVs. Such residual value losses led **Chrysler** (USA) to get out of the leasing business altogether.

What Do the Numbers Mean?

Residual Value Regret

As discussed, residual value profits are an important driver for the popularity of leasing for lessors, especially for leases of equipment and vehicles.

However, the profitability of equipment leasing hinges on the lessors' ability to accurately estimate the residual value of the leased asset at the end of the lease so as to resell the asset at a profit when returned by the lessee. **General Motors (GM)** (USA) has learned that residual value profits are *not* guaranteed. Here is what happened.

GM took advantage of a government subsidy of \$7,500 per electric vehicle to help drive down the cost of a lease for its electric car, the Chevy Volt. The taxpayer subsidies along with other GM incentives provided for low monthly lease payments, given the estimated residual value, and led to a full two-thirds of all Volt "sales" being attributed to leases. That's about three times the lease rate for the overall industry. The problems for GM started when the Volts came back at the end of the lease. Unfortunately for GM and other electric car enthusiasts, demand for electric cars without the incentives (which expired) has not been sustained, and resale values for Volts plummeted.

The rollback of electric car subsidies has spread around the globe. In the United Kingdom, the British car industry has blamed the government downgrade of subsidies for the decline in sales of electrified vehicles (down 11.8 percent). Notable players in the electric car market, **Tesla** (USA) and **Daimler** (DEU), have felt the effects.

As a result, rather than reaping residual value profits, these carmakers will sustain losses when an electric vehicle, like the Volt, is returned but must be sold for less than the original expected residual values. It's a double whammy for GM, as the already low sales numbers for new Volts will be further hurt by the supply of low-priced Volts on the used car lot. Although it appears that GM made a bad bet on residual value profits on the Volt, there may be beneficiaries, as those looking for a good deal on a Volt now have a supply of low-priced, used models from which to choose.

Sources: M. Modica, "Chevy Volt Resale Values Plunge as Lease Returns," *National Legal and Policy Center* (August 7, 2014); and J. Jolly, "Subsidy Cuts Blamed for Fall in UK Sales of Electrified Vehicles," *The Guardian* (July 4, 2019).

Lessee Accounting

LEARNING OBJECTIVE 2

Explain the accounting for leases by lessees.

A **lease** is defined as a “contract, or part of a contract, that conveys the right to control the use of identified property, plant or equipment (an identified asset) for a period of time in exchange for consideration.” [1] (See the [Authoritative Literature References](#) section near the end of the chapter.) A lease therefore conveys the use of an asset from one party (the lessor) to another (the lessee) without transferring ownership. Accounting for lease transactions is controversial, as the following example illustrates.

If **Air France** (FRA) borrows \$47 million on a 10-year note from **Barclays** (GBR) to purchase a Boeing 737 jet plane, Air France should report an asset and related liability at that amount on its statement of financial position. Similarly, if Air France purchases the 737 for \$47 million directly from Boeing through an installment purchase over 10 years, it should report an asset and related liability (i.e., it should “capitalize” the installment transaction).

However, what would happen if Air France **leases** the Boeing 737 for 10 years from **International Lease Finance Corp. (ILFC)** (USA) (a subsidiary of the Irish company **AerCap**) through a non-cancelable lease transaction with payments of the same amount as the installment purchase transaction? In that case, opinion differs over how to report this transaction. The various views on **capitalization of leases** are summarized in [Illustration 21.2](#). In short, the viewpoints range from no capitalization to capitalization of all long-term leases.

The IASB now requires lessees to capitalize all leases. The only exceptions to the capitalization requirement are for leases covering a term of less than one year or for a lease of property with a value less than \$5,000. The IASB indicates that the right to use property under the terms of the lease is an asset, and the lessee’s obligation to make payments under the lease is a liability. As a result, Air France records the right-of-use of the airplane as an asset on its statement of financial position. It also records a liability for its obligation to make payments under the lease.¹

1. **Do not capitalize any leased assets.** This view considers capitalization inappropriate because Air France does not own the property. Furthermore, a lease is an “**executory**” contract requiring continuing performance by both parties. Because companies do not currently capitalize other executory contracts (such as purchase commitments and employment contracts), they should not capitalize leases either.
2. **Capitalize leases that are similar to installment purchases.** This view holds that companies should report transactions in accordance with their economic substance. Therefore, if companies capitalize installment purchases, they should also capitalize leases that have similar characteristics. For example, Air France makes the same payments over a 10-year period for either a lease or an installment purchase. Lessees make rental payments, whereas owners make mortgage payments.
3. **Capitalize all long-term leases.** This approach requires only the long-term right to use the property in order to capitalize. This property-rights approach capitalizes all long-term leases.
4. **Capitalize firm leases where the penalty for non-performance is substantial.** A final approach advocates capitalizing only “firm” (non-cancelable) contractual rights and obligations. “Firm” means that it is unlikely to avoid performance under the lease without a severe penalty.

ILLUSTRATION 21.2 Views on Lease Capitalization

Once the lease is recorded, the lessee (e.g., Air France) recognizes interest expense on the lease liability over the life of the lease using the effective-interest method and records depreciation expense on the right-of-use asset. This accounting, referred to as the **finance lease method**, is applied whether the lease arrangement is effectively a purchase of the underlying asset (Air France’s lease with ILFC above) or when the lessee **obtains control of only the use of the underlying asset** but not the underlying asset itself. For example, a lease may convey use of one floor of an office building for five years. At the end of the lease, the lessee vacates the floor and the lessor can then lease the floor to another tenant. In this situation, the lease conveys right-of-use but not ownership. However, lessee accounting for leases that transfer ownership or transfer control is the same.²

Measurement of the Lease Liability and Lease Asset

As indicated, at commencement of the lease, lessees record a right-of-use asset and lease liability. The lease liability is computed as the present value of the lease payments. The asset representing the right-of-use of the underlying asset (i.e., the

right-of-use asset) is equal to the lease liability.³ Measurement of the lease liability is based on the lease term, lease payments, and discount rate.

Lease Term

The lease term is generally considered to be the fixed, non-cancelable term of the lease. Some leases include a **bargain renewal option**, which gives the lessee an option to renew the lease for a rental that is lower than the expected fair rental at the time the option becomes exercisable. The lease term should include the bargain renewal periods if, at the commencement of the lease, the difference between the renewal rental and the expected fair rental is great enough to make exercise of the option to renew reasonably certain.⁴

For example, assume that **Carrefour** (FRA) leases PCs from **Lenovo** (CHN) for two years at a rental of \$100 per month per computer. In addition, Carrefour can lease these computers for \$10 per month per computer for another two years. The lease clearly offers a bargain renewal option, and Carrefour should consider the lease term for these computers to be four years, not two.

Lease Payments

The lease payments generally include the following:

1. **Fixed payments.** These are the rental payments that are specified in the lease agreement and fixed over the lease term.
2. **Variable payments that are based on an index or a rate.** The lessee should include variable lease payments in the value of the lease liability at the level of the index/rate at the commencement date. When valuing the lease liability, no increases or decreases to future lease payments should be assumed based on increases or decreases in the index or rate. Instead, any difference in the payments due to changes in the index or rate is expensed in the period incurred. [Illustrations 21.3](#) and [21.4](#) provide an analysis of variable lease payments.

Including Variable Lease Payments

Facts: On January 1, 2022, Jose Shipping leases an airplane for 6 years. The annual lease payments are R\$1,000,000 per year, payable at the beginning of each year (annuity-due basis). In addition, the lease agreement specifies that the lease payment increases by R\$30,000 every year.

Question: What are the lease payments in 2023?

Solution: On January 1, 2023, the lease payment is R\$1,030,000 (R\$1,000,000 + R\$30,000), which is considered a variable payment. Given that the amount of the variable payment is known from year to year (the rate is set at commencement of the lease and in substance fixed), such variable payments are included in calculating the present value of the lease liability.

ILLUSTRATION 21.3 Variable Lease Payments

Expensing Variable Lease Payments

Facts: Assume the same information as in [Illustration 21.3](#), except that the lease payments are adjusted each year by a change in a price index.

Question: If the price index is 100 at January 1, 2022, and increases to 104 on January 1, 2023, what is the payment on January 1, 2023?

Solution: The variable payment on January 1, 2023, is R\$1,040,000 ($R\$1,000,000 \times 1.04$). Because the amount of the variable payment from year to year is not known at the lease commencement date, this payment is not included in determining the present value of the lease liability. This additional payment (R\$40,000) is recognized as an expense in the period it is incurred. Similarly, when lease payments vary with a performance measure (e.g., sales at a store location, asset usage), the variable amounts will be expensed in the period incurred.

ILLUSTRATION 21.4 Variable Lease Payments

3. Amounts guaranteed by a lessee under a residual value guarantee.

Residual value is the expected value of the leased asset at the end of the lease term. A residual value can be guaranteed or unguaranteed. In a

guaranteed residual value, the lessee has an obligation not only to return the leased asset at the end of the lease term but also to guarantee that the residual value will be a certain amount. If the lease involves an **unguaranteed residual value**, the lessee does not have any obligation to the lessor at the end of the lease, except to return the leased asset to the lessor. As a result, an unguaranteed residual value is not included in the lease payments. [5]

A guaranteed residual value is included in the lease payments, only to the extent that the guaranteed amount exceeds the expected residual value of the underlying asset at the end of the lease. That is, for measurement of the lease liability, the lessee includes **only the expected residual value probable of being owed by the lessee under the residual value guarantee**.

4. **Payments related to purchase or termination options that the lessee is reasonably certain to exercise.** If the lease contains a bargain purchase option that is reasonably certain to be exercised, the cost of that option should be considered part of the lease payments. Analysis of a termination option is indicated in [**Illustration 21.5**](#).

Analyzing a Termination Option

Facts: Cabrera Company leases a building and land from Worldwide Leasing for 6 years with monthly payments of \$10,000. The lease contract allows Cabrera to terminate the lease after 2 years for a total payment of \$140,000. At the commencement of the lease, it is reasonably certain that Cabrera will not continue the lease beyond 2 years.

Question: What are Cabrera's lease payments?

Solution: In this case, Cabrera should include the cost of the termination option in its calculation of the present value of its lease liability. The total lease payments are therefore \$380,000 $[(\$10,000 \times 24) + \$140,000]$.

[**ILLUSTRATION 21.5**](#) Termination Option

Discount Rate

To determine the lease liability, a lessee (i.e., the **Air France** example discussed earlier) should compute the present value of the lease payments using the **implicit interest rate**. [6] This rate is defined as the discount rate that, at commencement of the lease, causes the aggregate present value of the lease

payments and unguaranteed residual value to be equal to the fair value of the leased asset. [7]

Air France may find that it is impracticable to determine the implicit rate of the lessor. In the event that it is impracticable to determine the implicit rate, Air France uses its incremental borrowing rate. The **incremental borrowing rate** is the rate of interest the lessee would have to pay on a similar lease, or the rate that, at commencement of the lease, the lessee would incur to borrow over a similar term the funds necessary to purchase the asset. The implicit rate of the lessor is generally a more realistic rate to use in determining the amount to report as the asset and related liability for Air France. However, given the difficulty the lessee may have in determining the implicit rate, it is likely that the lessee will use the incremental borrowing rate.⁵

Subsequent Lessee Accounting

Throughout the term of the lease, a lessee like Air France uses the **effective-interest method** to allocate each lease payment between principal and interest on the lease liability. This method produces a periodic interest expense equal to a constant percentage of the carrying value of the lease obligation. When applying the effective-interest method, a lessee such as Air France should use the implicit rate (if known) or its incremental borrowing rate. Depreciation of the right-of-use asset is accounted for similarly to other non-financial assets. That is, the lessee should depreciate the right-of-use asset using an approach that reflects the consumption of the economic benefits of the leased asset. Generally, companies use the straight-line method for recording the consumption of a right-of-use asset.

If the lease agreement transfers ownership of the asset to Air France at the end of the lease, it depreciates the aircraft consistent with its normal depreciation policy for other aircraft, **using the economic life of the asset**. On the other hand, if the lease does not transfer ownership, then Air France depreciates it over the **term of the lease**.⁶ In this case, the aircraft reverts to ILFC after a certain period of time. Recognizing the interest on the lease liability coupled with the depreciation of the right-of-use asset will **generally result in higher total expense in the earlier years and lower total expense in the later years of the lease**.

Lessee Accounting: Example 1

To illustrate the accounting for a lease using the finance lease method, assume that **CNH Capital** (NLD) (a subsidiary of **CNH Global**) and **Ivanhoe Mines Ltd.** (CAN) sign a lease agreement dated January 1, 2022, that calls for CNH to lease a backhoe to Ivanhoe beginning January 1, 2022. The terms and provisions of the lease agreement and other pertinent data are as follows.

- The term of the lease is five years. The lease agreement is non-cancelable, requiring equal rental payments of €20,711.11 at the beginning of each year (annuity-due basis).
- The backhoe has a fair value at the commencement of the lease of €100,000, an estimated economic life of five years, and a guaranteed residual value of €5,000. (Ivanhoe expects that it is probable that the expected residual value at the end of the lease will be greater than the guaranteed amount of €5,000.)
- The lease contains no renewal options. The backhoe reverts to CNH Capital at the termination of the lease.
- Ivanhoe's incremental borrowing rate is 5 percent per year.
- Ivanhoe depreciates its equipment on a straight-line basis.
- CNH sets the annual rental rate to earn a rate of return of 4 percent per year; Ivanhoe is aware of this rate.

Ivanhoe computes the lease liability and the amount capitalized as a right-of-use asset as the present value of the lease payments, as shown in [Illustration 21.6](#).⁷

Capitalized amount	= €20,711.11 × Present value of an annuity due of 1 for 5 periods at 4%
	= €20,711.11 × 4.62990 ($PVF-AD_{5,4\%}$)
	= €95,890.35*

*Rounded by €0.02.

ILLUSTRATION 21.6 Present Value of Lease Payments

Note that the present value measurement does not include the residual value guarantee. That is, Ivanhoe includes only the expected residual value probable of being owed under **the residual value guarantee**. Because Ivanhoe believes that it is probable that the expected residual value will be greater than the guaranteed residual value, the guaranteed residual value is not included in the measurement of the lease liability.⁸

Ivanhoe uses CNH's implicit interest rate of 4 percent instead of its incremental borrowing rate of 5 percent because the implicit rate is known to Ivanhoe.⁹ Ivanhoe records the lease on its books as follows.

January 1, 2022		
Right-of-Use Asset	95,890.35	
Lease Liability		95,890.35

Note that Ivanhoe records the obligation at the net amount of €95,890.35 (the present value of the lease payments) rather than at the gross amount of €103,555.55 ($\text{€}20,711.11 \times 5$).¹⁰ Ivanhoe then records the **first lease payment** as follows.

January 1, 2022		
Lease Liability	20,711.11	
Cash		20,711.11

The annual interest expense, applying the effective-interest method, is a function of the outstanding liability as shown in the lease amortization schedule in **Illustration 21.7**.

Ivanhoe Mines Lease Amortization Schedule Annuity-Due Basis				
Date	Annual Lease Payment	Interest (4%) on Liability	Reduction of Lease Liability	Lease Liability
(a)	(b)	(c)	(d)	
1/1/22				€95,890.35
1/1/22	€ 20,711.11	€ –0–	€ 20,711.11	75,179.24
1/1/23	20,711.11	3,007.17	17,703.94	57,475.30
1/1/24	20,711.11	2,299.01	18,412.10	39,063.20
1/1/25	20,711.11	1,562.53	19,148.58	19,914.62
1/1/26	20,711.11	796.49*	19,914.62	0.00
	<u>€103,555.55</u>	<u>€7,665.20</u>	<u>€95,890.35</u>	

a. Lease payment as required by lease.
b. Four percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
c. (a) minus (b).
d. Preceding balance minus (c).

*Rounded by €0.09.

ILLUSTRATION 21.7 Lease Amortization Schedule—Lessee

Each lease payment of €20,711.11 consists of two elements: (1) a reduction of the lease liability and (2) a financing cost (interest expense).¹¹ The total financing cost (interest expense) over the term of the lease is €7,665.20. This amount is the difference between the present value of the lease payments (€95,890.35) and the actual cash disbursed (€103,555.55). Ivanhoe records **interest expense** for the first year of the lease as follows.

December 31, 2022		
Interest Expense	3,007.17	
Lease Liability		3,007.17

Depreciation of the right-of-use asset over the five-year lease term, applying Ivanhoe's normal depreciation policy (straight-line method), results in the following entry at December 31, 2022.

December 31, 2022		
Depreciation Expense	19,178.07	
Right-of-Use Asset (€95,890.35 ÷ 5 years)		19,178.07

At December 31, 2022, Ivanhoe reports right-of-use assets and related lease liabilities separately from other assets and liabilities on its statement of financial position, or discloses these assets and liabilities in the notes to its financial statements.

Ivanhoe classifies the portion of the liability due within one year or the operating cycle, whichever is longer, with current liabilities, and the rest with non-current liabilities. For example, the current portion of the December 31, 2022, total obligation of €75,179.24 in Ivanhoe's amortization schedule is the amount payable in 2023, or €20,711.11. Note that this current portion is composed of two components: (1) accrued interest on the liability outstanding throughout the year (€3,007.17) and (2) reduction of the initial lease liability (€17,703.94).

Illustration 21.8 shows the presentation of the lease assets and liabilities sections as they relate to lease transactions at December 31, 2022, assuming Ivanhoe chose to present right-of-use assets and lease liabilities separately from other assets and liabilities on the statement of financial position.

Non-current assets	
Right-of-use assets ($\text{€}95,890.35 - \text{€}19,178.07$)	$\text{€}76,712.28$
Current liabilities	
Lease liability ($\text{€}3,007.17 + \text{€}17,703.94$)	$\text{€}20,711.11$
Non-current liabilities	
Lease liability	57,475.30

ILLUSTRATION 21.8 Statement of Financial Position Presentation

On its December 31, 2022, income statement, Ivanhoe reports interest expense on the liability and depreciation expense related to right-of-use assets, as shown in **Illustration 21.9.**

Expenses	
Interest expense (lease liabilities)	$\text{€} 3,007.17$
Depreciation expense (right-of-use assets)	19,178.07

ILLUSTRATION 21.9 Income Statement Presentation

Ivanhoe records the second lease payment as follows.

January 1, 2023		
Lease Liability ($\text{€}3,007.17 + \text{€}17,703.94$)	20,711.11	
Cash		20,711.11

Entries through 2026 follow the pattern above. **Upon expiration of the lease**, Ivanhoe has fully depreciated the amount capitalized as a right-of-use asset. It also has fully discharged its lease obligation. At the date the lease expires, both the right-of-use asset account and lease liability account related to Ivanhoe's lease of the backhoe have zero balances. If Ivanhoe does not purchase the backhoe, it returns the equipment to CNH.¹²

If Ivanhoe purchases the equipment from CNH at the termination of the lease at a price of €5,000 and the estimated remaining life of the equipment is two years, it makes the following entry.

January 1, 2027		
Equipment	5,000	
Cash		5,000

Lessee Accounting: Example 2

In the CNH/Ivanhoe lease just discussed, the residual value was guaranteed by the lessee. This guaranteed residual value did not affect the computation of the lease liability, however, because it was probable that the expected residual value was greater than the guaranteed residual value. If the expected residual value is **greater** than the guaranteed residual value, then Ivanhoe simply returns the equipment to CNH. However, if the expected residual value is **less** than the guaranteed residual value, Ivanhoe must record a loss on the lease to cover this deficiency.

To illustrate a situation where the expected residual value is below the guaranteed residual value, assume in the earlier CNH/Ivanhoe example that it is probable that the residual value will be €3,000 instead of the guaranteed amount of €5,000. If Ivanhoe estimates the residual value of the backhoe at the end of the lease to be €3,000, Ivanhoe includes €2,000 ($\text{€}5,000 - \text{€}3,000$) as an additional lease payment in determining the lease liability and right-of-use asset.

Illustration 21.10 shows the computation of the lease liability/right-of-use asset for Ivanhoe in this situation.

Ivanhoe's Capitalized Amount (4% Rate) Annuity-Due Basis, Including Guaranteed Residual Value	
Present value of five annual rental payments ($\text{€}20,711.11 \times 4.62990$ ($PVF-AD_{5,4\%}$))	€95,890.35*
Present value of probable residual value payment of €2,000 due 5 years after date of commencement ($\text{€}2,000 \times .82193 (PVF_{5,4\%})$)	1,643.86
Lessee's lease liability/right-of-use asset	€ 97,534.21

*Rounded by €0.02.

ILLUSTRATION 21.10 Computation of Lessee's Capitalized Amount—Guaranteed Residual Value

Ivanhoe makes the following entries to record the lease and the first payment.

January 1, 2022		
Right-of-Use Asset	97,534.21	
Lease Liability		97,534.21
Lease Liability	20,711.11	
Cash		20,711.11

Ivanhoe prepares a lease amortization schedule to show interest expense and related amortization of the lease liability over the five-year period. The schedule, shown in **Illustration 21.11**, is based on an expected residual value payment of €2,000 ($\text{€}5,000 - \text{€}3,000$) at the end of five years.

Ivanhoe Mines
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (4%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/22				€97,534.21
1/1/22	€ 20,711.11	€ -0-	€20,711.11	76,823.10
1/1/23	20,711.11	3,072.92	17,638.19	59,184.91
1/1/24	20,711.11	2,367.40	18,343.71	40,841.20
1/1/25	20,711.11	1,633.65	19,077.46	21,763.74
1/1/26	20,711.11	870.55	19,840.56	1,923.18
1/1/27	2,000.00	76.82*	1,923.18	0.00
	<u>€105,555.55</u>	<u>€8,021.34</u>	<u>€97,534.21</u>	

- a. Lease payment as required by lease.
- b. Four percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
- c. (a) minus (b).
- d. Preceding balance minus (c).

*Rounded by €0.11.

ILLUSTRATION 21.11 Lease Amortization Schedule—Lessee

Illustration 21.12 shows, in comparative form, Ivanhoe's entries for the first two years of the lease when:

1. Ivanhoe expects to pay €2,000 at the end of the lease related to the guaranteed residual value (see [Illustration 21.11](#)).
2. Ivanhoe does not expect to owe an additional payment for the guaranteed residual value (see [Illustration 21.7](#)).

Guaranteed Residual Value (\$2,000 expected payment)			Guaranteed Residual Value (no expected payment)		
Capitalization of lease (January 1, 2022):					
Right-of-Use Asset Lease Liability	97,534.21	97,534.21	Right-of-Use Asset Lease Liability	95,890.35	95,890.35
First payment (January 1, 2022):					
Lease Liability Cash	20,711.11	20,711.11	Lease Liability Cash	20,711.11	20,711.11
Adjusting entry for accrued interest (December 31, 2022):					
Interest Expense Lease Liability	3,072.92	3,072.92	Interest Expense Lease Liability	3,007.17	3,007.17
Entry to record depreciation of the ROU asset (December 31, 2022):					
Depreciation Expense Right-of-Use Asset (\$97,534.21 ÷ 5 years)	19,506.84	19,506.84	Depreciation Expense Right-of-Use Asset (\$95,890.35 ÷ 5 years)	19,178.07	19,178.07
Second payment (January 1, 2023):					
Lease Liability (\$3,072.92 + €17,638.19) Cash	20,711.11	20,711.11	Lease Liability (\$3,007.17 + €17,703.94) Cash	20,711.11	20,711.11

ILLUSTRATION 21.12 Journal Entries—Guaranteed Residual Value

Following similar entries in subsequent years of the lease and using the amounts in [Illustration 21.11](#), at the end of the lease term (January 1, 2027), Ivanhoe returns the asset to CNH and makes the entries shown in [Illustration 21.13](#) under the two situations.

Guaranteed Residual Value (\$2,000 expected payment)			Guaranteed Residual Value (no expected payment)
Final payment (January 1, 2027):			
Lease Liability Cash	2,000.00	2,000.00	No entry

ILLUSTRATION 21.13 Final Payments—Guaranteed and Unguaranteed Residual Value

Following the entries summarized in [Illustrations 21.12](#) and [21.13](#), the Right-of-Use Asset and the Lease Liability accounts have been fully amortized and have zero balances. If at the end of the lease (January 1, 2027) Ivanhoe has no additional obligations under the residual value guarantee, no further entries are needed.

Residual Value Loss

What if the fair value of the underlying asset is less than the expected residual value, such that Ivanhoe will have to further compensate CNH under the residual value guarantee? In this situation, Ivanhoe will record a loss. For example, assume that due to poor maintenance of the backhoe, Ivanhoe and CNH agree that the fair value of the asset is zero upon returning the backhoe to CNH on

January 1, 2027. In this case, Ivanhoe reports a loss of €3,000. Under the expected payment scenario, Ivanhoe makes the following entry.

January 1, 2027		
Loss on Lease (€5,000 – €2,000)	3,000	
Cash		3,000

Under the *no expected* payment scenario, Ivanhoe makes the following entry.

Loss on Lease (€5,000 – €0)	5,000	
Cash		5,000

Bargain Purchase Option

As stated earlier, a **bargain purchase option** allows the lessee to purchase the leased property for a future price that is substantially lower than the asset's expected future fair value. That is, the price is so favorable at the lease's commencement that the future exercise of the option appears to be reasonably certain. If a bargain purchase option exists, the lessee must increase the present value of the lease payments by the present value of the option price. For example, assume that Ivanhoe Mines (see [Illustration 21.11](#)) had an option to buy the leased equipment for €2,000 at the end of the five-year lease term. At that point, Ivanhoe and CNH expect the fair value to be €10,000. The significant difference between the option price and the fair value creates a bargain purchase option, as the exercise of that option is reasonably certain.

A bargain purchase option affects the accounting for leases in the same way as a guaranteed residual value with a probable amount to be owed. In other words, with a guaranteed residual value, the lessee is expected to make an additional payment related to the residual value at the end of the lease. Similarly, the cost of a bargain purchase option is expected to be paid by the lessee. Therefore, the computations, amortization schedule, and entries prepared for this €2,000 bargain purchase option are identical to those shown for the €2,000 probable amount to be owed under the guaranteed residual value (see [Illustrations 21.11](#), [21.12](#), and [21.13](#)).

The only difference between the accounting treatment for a bargain purchase option and a guaranteed residual value of identical amounts and circumstances is in the computation of the annual depreciation. In the case of a guaranteed residual value, Ivanhoe depreciates the right-of-use asset over the lease term. **In the case of a bargain purchase option, it uses the economic life of the underlying asset, given that the lessee takes ownership of the asset.**

Lessee Accounting: Example 3

The first two lessee examples illustrate leases with guaranteed residual values. To illustrate lessee accounting with an unguaranteed residual value, assume that Hathaway Disposal (lessor) and **Marks and Spencer plc (M&S)** (GBR) (the lessee) sign a lease agreement dated January 1, 2022. The lease agreement specifies that Hathaway will grant right-of-use of one of its standard cardboard compactors for use at one of M&S's stores. Information relevant to the lease is as follows.

- The term of the lease is three years. The lease agreement is non-cancelable, requiring equal rental payments of £17,620.08 at the beginning of each year of the lease (annuity-due basis).
- The compactor has a cost and fair value at commencement of the lease of £60,000, an estimated economic life of seven years, and an expected residual value of £12,000, which is unguaranteed.
- The lease contains no renewal options, and the compactor reverts to Hathaway at the termination of the lease.
- The implicit rate of the lessor is not known by M&S. M&S's incremental borrowing rate is six percent.

Under this lease arrangement, M&S has right of use of the compactor for three years and will return the asset to Hathaway at the end of the lease; Hathaway retains ownership of the compactor. The present value of the lease payments for M&S in this situation is £49,924.56 ($\text{£17,620.08} \times 2.83339 (\text{PVF-AD}_{3,6\%})$). Note that the lease liability of £49,924.56 does not include any payments related to the unguaranteed residual value. M&S makes the following entries to record the lease and the first payment.

January 1, 2022		
Right-of-Use Asset	49,924.56	
Lease Liability		49,924.56
Lease Liability	17,620.08	
Cash		17,620.08

M&S prepares a lease amortization schedule to show interest expense and related amortization of the lease liability over the three-year period, as shown in

Illustration 21.14.

Marks and Spencer plc
Lease Amortization Schedule
Annuity-Due Basis

Date	Lease Payment	Interest (6%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/22				£49,924.56
1/1/22	£17,620.08	£ -0-	£17,620.08	32,304.48
1/1/23	17,620.08	1,938.27	15,681.81	16,622.67
1/1/24	17,620.08	997.41*	16,622.67	0.00
	<u>£52,860.24</u>	<u>£2,935.68</u>	<u>£49,924.56</u>	

- a. Lease payment as required by lease.
- b. Six percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
- c. (a) minus (b).
- d. Preceding balance minus (c).

*Rounded by £0.05.

ILLUSTRATION 21.14 Lease Amortization Schedule—Lessee

The journal entries to be prepared by M&S throughout the lease to record lease expense and amortization of the lease liability and depreciation of the right-of-use asset are as shown in [Illustration 21.15](#), using the amounts presented in [Illustration 21.14](#).

Marks and Spencer plc (Lessee)		
Recognize lease expense, record depreciation (December 31, 2022):		
Interest Expense	1,938.27	
Lease Liability		1,938.27
Depreciation Expense	16,641.52	
Right-of-Use Asset ($\text{£}49,924.56 \div 3$)		16,641.52
Record second lease payment (January 1, 2023):		
Lease Liability ($\text{£}1,938.27 + \text{£}15,681.81$)	17,620.08	
Cash		17,620.08
Recognize lease expense, record depreciation (December 31, 2023):		
Interest Expense	997.41	
Lease Liability		997.41
Depreciation Expense	16,641.52	
Right-of-Use Asset ($\text{£}49,924.56 \div 3$)		16,641.52
Record third lease payment (January 1, 2024):		
Lease Liability ($\text{£}997.41 + \text{£}16,622.67$)	17,620.08	
Cash		17,620.08
Record depreciation (December 31, 2024):		
Depreciation Expense	16,641.52	
Right-of-Use Asset ($\text{£}49,924.56 \div 3$)		16,641.52

ILLUSTRATION 21.15 Journal Entries by Lessee

Following these entries, as indicated in [Illustration 21.14](#), the lease liability and the right-of-use asset have zero balances. M&S returns the asset to Hathaway.

Low-Value and Short-Term Leases

As indicated, the IASB provided an exception to the required capitalization of all leases for (1) leases of underlying assets with low value and (2) short-term leases with a term of 12 months or less. [\[8\]](#)

Low-Value Leases

For **low-value leases** (of underlying assets with values of \$5,000 or less), rather than recording a right-of-use asset and lease liability, a lessee may elect to expense the lease payments as incurred. This election can be made on a lease-by-lease basis, and if chosen, the lessee assesses the value of an underlying asset based on the value of the asset when it is new, regardless of the age of the asset being leased. Examples of low-value assets include desktop and laptop computers, small items of office furniture, telephones, and other low-value equipment.

Short-Term Leases

A **short-term lease** is a **lease** that, at the **commencement date**, has a **lease term** of 12 months or less. Rather than recording a right-of-use asset and lease liability, lessees may elect to expense the lease payments as incurred. Leases may include options to either extend the term of the lease (a renewal option) or to terminate the lease prior to the contractually defined lease expiration date (a termination option). In these situations, renewal or termination options that are reasonably certain of exercise by the lessee are included in the lease term. Therefore, a one-year lease with a renewal option that the lessee is reasonably certain to exercise is not a short-term lease. [Illustration 21.16](#) provides an example of two short-term lease situations.¹³

Short-Term Leases

Facts: (a) Thomas Company (lessee) enters into an arrangement to lease a crane for a 6-month period, with the option to extend the term for up to 9 additional months (in 3-month increments). After considering the nature of the project, Thomas determines that it expects to use the crane for only 9 months and is therefore reasonably certain that it will exercise only one of the 3-month renewal options.

(b) Thomas Company enters into the same arrangement as in part (a), but the project for which the crane is being used is now expected to take 15 months to complete. After considering the nature of the project, Thomas determines that it expects to use the crane for 15 months and is therefore reasonably certain that it will exercise all three renewal options.

Question: How would Thomas report these two situations?

Solution:

- (a) Since the lease term is not more than 12 months, Thomas is able to elect the short-term lease exception, as it does not expect to exercise the renewal option.
- (b) The expected lease term is greater than 12 months because Thomas expects to exercise all three renewal options. Thus, Thomas is not able to apply the short-term lease exception and must record a right-of-use asset and related lease liability.

[ILLUSTRATION 21.16](#) Short-Term Lease Examples

Summary of Lessee Accounting

As shown in three finance lease examples, lessees capitalize all leases. The only exceptions to the capitalization requirement are for leases covering a term of less than one year, and leases of property with a value less than \$5,000. Once the lease is recorded, the lessee recognizes interest expense on the lease liability over the life of the lease using the effective-interest method and records depreciation expense on the right-of-use asset. A key source of variation relates to the treatment of residual values.

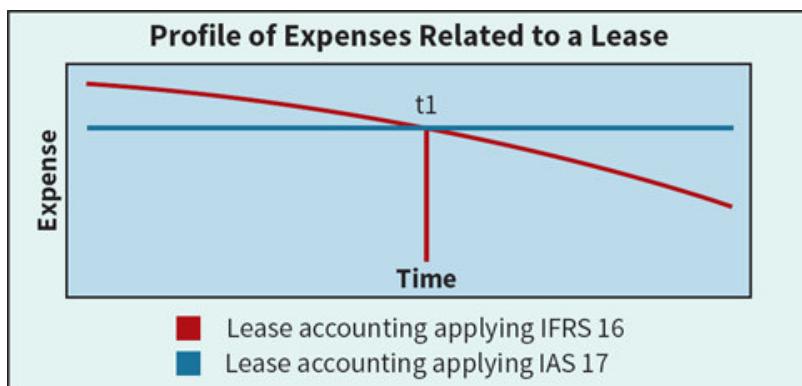
The guidelines for residual values, as shown in three lessee examples, are as follows. [9]

1. If it is probable that the expected residual value is equal to or greater than the guaranteed residual value, the lessee should not include the guaranteed residual value in the computation of the lease liability.
2. If it is probable that the expected residual value is less than the guaranteed residual value, the present value of the difference between the expected and guaranteed residual value should be included in computation of the lease liability.
3. The lessee does not include the unguaranteed residual value in the computation of the lease liability.

What Do the Numbers Mean?

Your Lease Is Killing My Income

As indicated, applying the new guidance in *IFRS 16* can result in “front-loading” of expenses, compared to the prior standard (*IAS 17*). *IAS 17* allowed companies to expense payments as incurred on some leases (hereafter referred to as the operating method). The operating method leads to a constant expense from period to period. Under the new lease standard, lease expense is generally higher than the operating method in the earlier years of the lease because depreciation plus interest expense exceeds the constant expense charge under the operating method. The expense profiles from application of *IFRS 16* and prior IFRS (*IAS 17*) are shown in the following chart for an individual lease (assuming lease payments are even throughout the lease term).



The chart shows that (a) the sum of interest and depreciation on a lease applying *IFRS 16* is higher than straight-line expense for an operating lease at the beginning of the lease term and lower at the end of the lease term, and (b) the point at which interest plus depreciation is equal to expense under the operating lease method expense (t_1 in the chart) occurs somewhere after the midpoint of the lease.

However, earnings before interest, taxes, depreciation, and amortization (EBITDA)—a metric closely watched by market analysts to assess profitability and financial leverage—is expected to **increase** under the new rules. This is because, under the new rules, EBITDA does not include lease expenses (interest, depreciation and amortization), while the prior rules included the entire expense for operating leases in EBITDA. One analysis, based on 3,199 IFRS reporters worldwide, estimates the increases in EBITDA will range from 6 percent to 11 percent, depending on industry and geographic region.

Sources: “A Study on the Impact of Lease Capitalization: *IFRS 16: The New Leases Standard*,” www.pwc.com (February 2016); *Effects Analysis: IFRS 16 Leases*, IASB (January 2016); and N.

Trentmann, "CFOs Overhaul Performance Measures in Response to New Accounting Rules," *Wall Street Journal* (May 2, 2019).

Lessor Accounting

LEARNING OBJECTIVE 3

Explain the accounting for leases by lessors.

Economics of Leasing

In our examples with CNH/Ivanhoe (Examples 1 and 2), the rental payment was given at €20,711.11. It is important to understand that CNH (the lessor) determines the amount of the rental payment, not the lessee. CNH determines this payment using the rate of return—the implicit rate—needed to justify leasing the backhoe. In establishing the implicit rate, CNH considers the credit standing of Ivanhoe, the length of the lease, and the status of the residual value (guaranteed versus unguaranteed).

In Examples 1 and 2, CNH determined the implicit rate to be 4 percent, the fair value of the equipment to be €100,000, and the residual value to be €5,000. CNH then computed the lease payment as shown in [Illustration 21.17](#).

Fair value of leased equipment	€100,000.00
Less: Present value of the residual value ($€5,000 \times .82193$ ($PVF_{5.4\%}$))	4,109.65
Amount to be recovered by lessor through lease payments	€ 95,890.35
Five beginning-of-year lease payments to earn a 4% return ($€95,890.35 \div 4.62990$ ($PVF-AD_{5.4\%}$)))	€ 20,711.11

[ILLUSTRATION 21.17](#) Lease Payment Calculation

As indicated, when a residual value is involved (whether guaranteed or not), CNH would not have to recover as much from the lease payments. Therefore, the periodic lease payments would be less.

Classification of Leases by the Lessor

For accounting purposes, the **lessor** classifies leases as a finance lease or an operating lease. For a lease to be a **finance lease**, it must be non-cancelable and **meet at least one of five tests** (see [Illustration 21.18](#)). **[10] To meet one of these five tests, the lessor** must transfer control of a substantial portion of the

underlying asset to the lessee or provide ownership of the underlying asset to the lessee.¹⁴

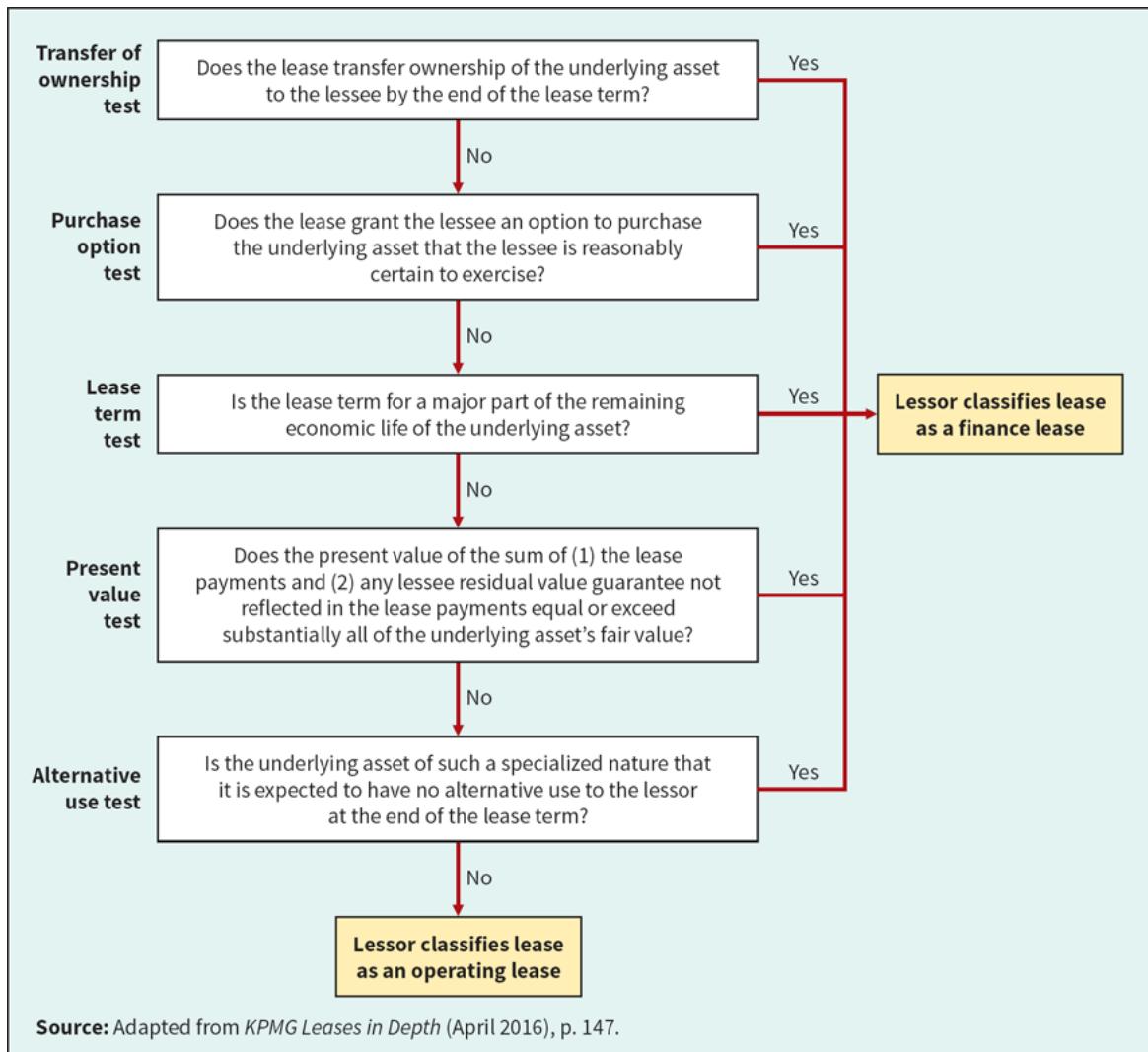


ILLUSTRATION 21.18 Lessor Classification Tests

All leases that do not meet one of the tests are classified as **operating leases**. In an operating lease, the lessor conveys the right to use the underlying asset for the term of the lease but not ownership (or control of a substantial portion) of the underlying asset itself. **Illustration 21.18** presents the **lease classification tests**, which are used to determine whether a lessor should classify the lease as a finance lease or as an operating lease.

We discuss in detail each of the five tests on the following pages.

Transfer of Ownership Test

If the lease transfers ownership of the asset to the lessee, the lessor classifies the lease as a finance lease. This test is not controversial and is easily implemented in

practice.

Purchase Option Test

As indicated earlier, a purchase option test is met if it is reasonably certain that the lessee will exercise the option. The lease purchase option allows the lessee to purchase the property for a price that is significantly lower than the underlying asset's expected fair value at the date the option becomes exercisable (a **bargain purchase option**). That is, the lessor transfers control (ownership) of the asset to the lessee.

Lease Term Test

When the lease term is a major part of the remaining economic life of the leased asset, lessors should use the finance method in accounting for the lease transaction. The question is, what is a major part of the economic life of a leased asset? The IASB indicates that lessees should use judgment and offers additional factors to consider in its application guidance for *IFRS 16* to assist in these decisions. *For purposes of your homework, if the lease term is 75 percent or greater of the economic life of the lease asset, assume that the lease meets the lease term test, and finance lease treatment is appropriate.*¹⁵

Present Value Test

If the present value of the lease payments is reasonably close to the fair value of the asset, the lessor is effectively transferring control (ownership) of the asset to the lessee. Again, the IASB recognizes that determining what is reasonably close often involves significant judgment and therefore provides additional application guidance related to this test. *For purposes of your homework, if the present value of the lease payments equals or exceeds 90 percent of the fair value of the asset, assume that the lease meets the **present value test**, and finance lease treatment is appropriate.*

Lease Payments

As discussed earlier, the lease payments generally include the following: (1) Fixed payments, which are the rental payments that are specified in the lease agreement and fixed over the lease term; (2) Variable payments, which are based on an index or a rate. The lessor should include variable lease payments at the level of the index/rate at the commencement date; (3) Residual values (whether guaranteed or not), which are included because a lessor, does not have to recover as much from the rental payments and therefore the rental payments are less; and (4) Payments related to purchase or termination options that the lessee is reasonably certain to exercise. As indicated earlier, if the lease contains a bargain purchase option, the cost of that option should be considered part of the lease payments.

Discount Rate

The lessor should use the implicit rate to determine the present value of the payments. This rate is defined as the discount rate that, at commencement of the lease, causes the aggregate present value of the lease payments and unguaranteed residual value to be equal to the fair value of the leased asset.

Alternative Use Test

If at the end of the lease term the lessor does not have an alternative use for the asset, it is assumed that the lessor has transferred control (ownership) of the asset to the lessee. Therefore, the lessor uses the finance lease method. For example, an equipment manufacturer might build hydraulic lifts to meet unique loading dock configurations of a lessee, like [Amazon.com](#) (USA). Given the specialty nature of the equipment, only Amazon can use the lifts and it receives substantially all of the benefits of the leased asset, such that the alternative use test is met for the lessor.¹⁶

What Do the Numbers Mean?

Not So Fast

As an illustration of the importance of the control criteria, consider the case of computer leasing companies, which at one time bought **IBM** (USA) equipment, leased the equipment to their customers, and removed the leased assets from their statements of financial position. In leasing the assets, the computer lessors stated that they would substitute new IBM equipment if obsolescence occurred (a sales return provision). However, when IBM introduced a new computer line, IBM refused to sell it to the computer leasing companies. As a result, a number of the lessors could not meet their contracts with their customers and had to take back the old equipment. Thus, control had not been fully transferred, and the computer leasing companies had to reinstate the assets they had taken off the books. Such a case demonstrates one reason why the lessor classification tests must be aligned with those for revenue recognition.

Accounting Measurement and Presentation

Lessors account for finance leases similarly to the accounting for the sale of an asset with a loan, by eliminating the asset and recording a **Lease Receivable** equal to the present value of the lease payments. Lessors then recognize interest revenue on the lease receivable over the life of the lease using the effective-

interest method. The Lease Receivable is computed as shown in **Illustration 21.19**.¹⁷

Lease Receivable	=	Present Value of Rental Payments	+	Present Value of Guaranteed and Unguaranteed Residual Values
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ILLUSTRATION 21.19 Lease Receivable

Under the operating method, lessors continue to recognize the asset on the statement of financial position and record equal amounts of lease revenue (straight-line basis) in each period. Lessors generally depreciate the leased asset on a straight-line basis.¹⁸

Accounting for Finance Lease (Lessor)

Finance leases are often subdivided into **sales-type leases** and direct financing leases. Normally, sales-type leases arise when manufacturers or dealers use leasing as a means of marketing their products. For example, a computer manufacturer will lease its computer equipment (possibly through a captive) to businesses and institutions. Direct financing leases generally result from arrangements with lessors that are primarily engaged in financing operations (e.g., banks and insurance companies). Sales-type leases are covered extensively in this chapter because these type of transactions involve the recording of sales revenue, cost of goods sold, and interest revenue. Direct financing leases generally record only interest revenue. Both of these approaches follow the revenue recognition guidelines in *IFRS 15*.

Finance (Sales-Type) Lease Example

To illustrate lessor accounting for a finance (sales-type) lease, refer to the preceding CNH Global/Ivanhoe Mines example. We repeat here the information relevant to CNH in accounting for this lease transaction.

- The term of the lease is five years. The lease agreement is non-cancelable, requiring equal rental payments at the beginning of each year (annuity-due basis).
- The backhoe has a fair value at the commencement of the lease of €100,000, an estimated economic life of five years, and a guaranteed residual value of €5,000 (which is less than the expected fair value of the backhoe at the end of the lease). Further, assume the underlying asset (the backhoe) has an €85,000 cost to the dealer, CNH.
- The lease contains no renewal options. The backhoe reverts to CNH at the termination of the lease.

- Collectibility of payments by CNH is probable.
- CNH sets the annual rental payment to earn a rate of return of 4 percent per year (implicit rate) on its investment as shown in [**Illustration 21.20**](#).

Fair value of leased equipment	€100,000.00
Less: Present value of the residual value ($€5,000 \times .82193$ $(PVF_{5,4\%})$)	4,109.65
Amount to be recovered by lessor through lease payments	€ 95,890.35
Five beginning-of-year lease payments to earn a 4% return ($€95,890.35 \div 4.62990$ ($PVF-AD_{5,4\%}$))	€ 20,711.11

ILLUSTRATION 21.20 Lease Payment Calculation

CNH determines the lease payments based on the implicit rate (rate of return) needed to justify leasing the asset. In establishing this rate of return, CNH considers the credit standing of Ivanhoe, the term of the lease, and whether the residual value is guaranteed or unguaranteed. In the CNH/Ivanhoe example, when a residual value is involved (whether guaranteed or not), CNH does not have to recover as much from the rental payments and therefore the rental payments are less.

CNH evaluates the lease classification tests as indicated in [**Illustration 21.21**](#).

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to CNH at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is equal to the economic life of the asset (100%). Therefore, the lease meets the lease term test.
4. Present value test	The present value of the lease payments is €100,000*, which is 100% (greater than or equal to 90%) of the fair value of the backhoe. Therefore, the lease meets the present value test.
5. Alternative use test	Since the asset is returned to CNH with some residual value, the alternative use test is not met.
*Present value of payments ($\text{€}20,711.11 \times 4.62990 (\text{PVF}_{\text{AD}, 5.4\%})$)	€ 95,890.35
Present value of the residual value ($\text{€}5,000 \times .82193 (\text{PVF}_{5.4\%})$)	4,109.65
	<u>€100,000.00</u>

ILLUSTRATION 21.21 Lease Classification Tests—Sales-Type Lease

The lease meets the criteria for classification as a finance (sales-type) lease because (1) the present value of the lease payments is equal to the fair value of the asset, and (2) the lease term is equal to the economic life of the asset. That is, Ivanhoe will consume substantially the entire underlying asset over the lease term. CNH computes the lease receivable as shown in [Illustration 21.22](#).

Lease receivable	= Present value of the rental payment + Present value of the guaranteed residual value
	= €95,890.35 ($€20,711.11 \times 4.62990 (PVF-AD_{5,4\%})$) + €4,109.65 ($€5,000.00 \times .82193 (PVF_{5,4\%})$)
	= €100,000.00

ILLUSTRATION 21.22 Lease Receivable Calculation

CNH then records the lease receivable, cost of goods sold, and sales revenue and removes the leased asset (which prior to the lease was included in CNH's inventory). The journal entry to record this transaction on January 1, 2022, is as follows.

January 1, 2022		
Lease Receivable	100,000	
Cost of Goods Sold	85,000	
Sales Revenue		100,000
Inventory		85,000

As a result, CNH reports a gross profit of €15,000 ($€100,000 - €85,000$) on its income statement. CNH then prepares a lease amortization schedule, as shown in **Illustration 21.23**, applying the effective-interest method and recognizing interest revenue as a function of the lease receivable balance.¹⁹

CNH Capital
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (4%) on Lease Receivable	Reduction of Lease Receivable	Lease Receivable
	(a)	(b)	(c)	(d)
1/1/22				€100,000.00
1/1/22	€ 20,711.11	€ -0-	€ 20,711.11	79,288.89
1/1/23	20,711.11	3,171.56	17,539.55	61,749.34
1/1/24	20,711.11	2,469.97	18,241.14	43,508.20
1/1/25	20,711.11	1,740.33	18,970.78	24,537.42
1/1/26	20,711.11	981.50	19,729.61	4,807.81
1/1/27	<u>5,000.00</u>	<u>192.19*</u>	<u>4,807.81</u>	0.00
	€108,555.55	€8,555.55	€100,000.00	

- a. Lease payment as required by lease.
- b. Four percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
- c. (a) minus (b).
- d. Preceding balance minus (c).

*Rounded by €0.12.

ILLUSTRATION 21.23 Lease Amortization Schedule—Lessor

On January 1, 2022, CNH records receipt of the first year's lease payment as follows.

January 1, 2022		
Cash	20,711.11	
Lease Receivable		20,711.11

On December 31, 2022, CNH recognizes the interest revenue on the lease receivable during the first year through the following entry (see **Underlying Concepts**).

Underlying Concepts

Interest revenue for the lessor may differ from interest expense for the lessee because the lease receivable amount is different than that for the lease liability.

December 31, 2022		
Lease Receivable	3,171.56	
Interest Revenue		3,171.56

At December 31, 2022, CNH reports the lease receivable in its statement of financial position among current assets and non-current assets. It classifies the portion due within one year or the operating cycle, whichever is longer, as a current asset, and the rest with non-current assets.

Illustration 21.24 shows CNH's assets section as it relates to the Ivanhoe lease transactions at December 31, 2022.

Current assets	
Lease receivable ($\text{€}3,171.56 + \text{€}17,539.55$)	€20,711.11
Non-current assets (investments)	
Lease receivable	61,749.34

ILLUSTRATION 21.24 Statement of Financial Position Presentation

In its income statement for 2022, CNH presents the revenue and expense items shown in **Illustration 21.25**.

Sales	
Sales revenue	€100,000.00
Less: Cost of goods sold	85,000.00
Other revenue	
Interest revenue	3,171.56

ILLUSTRATION 21.25 Income Statement Presentation

The following entries record receipt of the second year's lease payment and recognition of the interest revenue in 2023.

January 1, 2023		
Cash	20,711.11	
Lease Receivable		20,711.11

December 31, 2023		
Lease Receivable	2,469.97	
Interest Revenue		2,469.97

Journal entries through 2026 follow the same pattern, except for the year 2026. In 2026, the final lease payment is made on January 1, 2026, but the asset is not returned to CNH until January 1, 2027.

CNH makes the following entry on December 31, 2026.

December 31, 2026		
Lease Receivable	192.19	
Interest Revenue		192.19

As a result, interest revenue of €192.19 is recognized for the year 2026 as the residual value accretes up to €5,000 at the end of the lease. At January 1, 2027, when the leased asset is returned to CNH, the Lease Receivable account is reduced to zero and the asset returned is recorded in inventory, as follows.

January 1, 2027		
Inventory	5,000	
Lease Receivable		5,000

Lessor Accounting for Residual Values

Lessor Perspective—Guaranteed Residual Value

In the Ivanhoe/CNH example, Ivanhoe guaranteed a residual value of €5,000. In computing the amount to be recovered from the rental payments, the present value of the residual value was subtracted from the fair value of the backhoe to arrive at the amount to be recovered by the lessor. [Illustration 21.26](#) (which is the same as [Illustration 21.17](#)) shows this computation.

Fair value of leased equipment	€100,000.00
Less: Present value of the residual value ($\text{€}5,000 \times .82193$ ($PVF_{5,4\%}$)))	4,109.65
Amount to be recovered by lessor through lease payments	€ 95,890.35
Five beginning-of-year lease payments to earn a 4% return ($\text{€}95,890.35 \div 4.62990$ ($PVF-AD_{5,4\%}$)))	€ 20,711.11

[ILLUSTRATION 21.26](#) Lease Payment Calculation

The computation in [Illustration 21.26](#) is the same whether the residual value is guaranteed or unguaranteed.

The lease agreement between CNH and Ivanhoe is accounted for as a sales-type lease. CNH therefore recorded sales revenue and related cost of goods sold at lease commencement. CNH accounts for the guaranteed residual value as part of sales revenue because the lessor receives this amount at the end of the lease either in cash or in the residual value returned.

Lessor Perspective—Unguaranteed Residual Value

What happens if the residual value for CNH is unguaranteed? In this case, there is less certainty that the unguaranteed residual portion of the asset has been “sold.” Therefore, the lessor recognizes sales revenue and cost of goods sold only for the portion of the asset for which recovery is assured. To account for this uncertainty, both sales revenue and cost of goods sold are reduced by the present value of the unguaranteed residual value. [\[12\]](#) Given that the amounts subtracted from sales revenue and cost of goods sold are the same, the gross profit computed will still be the same amount as when a guaranteed residual value exists.

To compare a sales-type lease with a guaranteed residual value to one with an unguaranteed residual value, assume the same facts as in the previous CNH/Ivanhoe lease situation. That is:

1. The sales price is €100,000.
2. The residual value is €5,000 (the present value of which is €4,109.65).
3. The leased equipment has an €85,000 cost to the dealer, CNH.

[Illustration 21.27](#) shows the computation of the amounts relevant to a sales-type lease, under both a guaranteed and unguaranteed residual value situation.

	Guaranteed Residual Value	Unguaranteed Residual Value
Lease receivable	€100,000 [€20,711.11 × 4.62990 (PVF- $AD_{5,4\%}$) + €5,000 × .82193 (PVF _{5,4%})]	Same
Sales price of the asset	€100,000	€95,890.35 (€100,000 – €4,109.65)
Cost of goods sold	€85,000	€80,890.35 (€85,000.00 – €4,109.65)
Gross profit	€15,000 (€100,000 – €85,000)	€15,000 (€95,890.35 – €80,890.35)

ILLUSTRATION 21.27 Computation of Lease Amounts by CNH—Sales-Type Lease

CNH makes the entries with respect to the lease arrangement under guaranteed and unguaranteed residual value situations, as shown in Illustration 21.28.

Guaranteed Residual Value	Unguaranteed Residual Value
To record sales-type lease at commencement (January 1, 2022):	
Cost of Goods Sold 85,000.00	Cost of Goods Sold 80,890.35
Lease Receivable 100,000.00	Lease Receivable 100,000.00
Sales Revenue 100,000.00	Sales Revenue 95,890.35
Inventory 85,000.00	Inventory 85,000.00
To record receipt of the first lease payment (January 1, 2022):	
Cash 20,711.11	Cash 20,711.11
Lease Receivable 20,711.11	Lease Receivable 20,711.11
To recognize interest revenue during the first year (December 31, 2022):	
Lease Receivable 3,171.56	Lease Receivable 3,171.56
Interest Revenue 3,171.56	Interest Revenue 3,171.56
To record receipt of the second lease payment (January 1, 2023):	
Cash 20,711.11	Cash 20,711.11
Lease Receivable (€3,171.56 + €17,539.55) 20,711.11	Lease Receivable (€3,171.56 + €17,539.55) 20,711.11
To recognize interest revenue during the second year (December 31, 2023):	
Lease Receivable 2,469.97	Lease Receivable 2,469.97
Interest Revenue 2,469.97	Interest Revenue 2,469.97
To record receipt of residual value at £3,000 end of lease term (January 1, 2027):	
Inventory 3,000.00	Inventory 3,000.00
Cash 2,000.00	Loss on Lease 2,000.00
Lease Receivable 5,000.00	Lease Receivable 5,000.00

ILLUSTRATION 21.28 Entries for Guaranteed and Unguaranteed Residual Values—Sales-Type Lease

CNH records the same gross profit (€15,000) at the point of sale whether the residual value is guaranteed or unguaranteed. However, the amounts recorded for sales revenue and the cost of goods sold are different between the guaranteed and unguaranteed situations. The reason for the difference is the uncertainty surrounding the realization of the unguaranteed residual value. Unlike the guaranteed residual value situation, where the lessor knows that it will receive the full amount of the guarantee at the end of the lease, in an unguaranteed residual value situation the lessor is not sure what it will receive at the end of the lease regarding the residual value. That is, due to the uncertainty surrounding the realization of the unguaranteed residual value, sales revenue and related cost of goods sold are reduced by the present value of the residual value. This results in **sales revenue and cost of goods sold being reported at different amounts under an unguaranteed residual value situation.**

Lessor Accounting for Operating Leases

To illustrate lessor accounting for an operating lease, we use the previously discussed lease agreement between Hathaway Disposal Ltd. and M&S for the use of one of Hathaway's standard cardboard compactors. Information relevant to the lease is as follows.

- The term of the lease is three years. The lease agreement is non-cancelable, requiring three annual rental payments of £17,620.08, with the first payment on January 1, 2022 (annuity-due basis).
- The compactor has a cost and fair value at commencement of the lease of £60,000, an estimated economic life of five years, and a residual value at the end of the lease of £12,000 (unguaranteed).
- The lease contains no renewal options. The compactor reverts to Hathaway at the termination of the lease.
- The implicit rate of the lessor is known by M&S. M&S's incremental borrowing rate is six percent. Hathaway sets the annual rental rate to earn a rate of return of six percent per year (implicit rate) on its investment, as shown in [Illustration 21.29](#).

Fair value of leased equipment	£60,000.00
Less: Present value of the residual value ($\text{£12,000} \times .83962$ ($PVF_{3,6\%}$))	10,075.44
Amount to be recovered by lessor through lease payments	£49,924.56
Three beginning-of-year lease payments to earn a 6% return ($\text{£49,924.56} \div 2.83339$ ($PVF-AD_{3,6\%}$)))	<u>£17,620.08</u>

ILLUSTRATION 21.29 Computation of Lease Payments

Hathaway classifies the lease as an operating lease because none of the finance lease tests are met, as shown in Illustration 21.30.

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Hathaway at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is 60% ($3 \div 5$) of the economic life of the asset, which is less than a major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is £49,924.56*, which is 83.2% ($\text{£49,924.56} \div \text{£60,000}$) of the fair value of the compactor. Therefore, the lease does not meet the present value test.
5. Alternative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to Hathaway when returned at the end of the lease.
<u>*£17,620.08 $\times 2.83339$ ($PVF-AD_{3,6\%}$)</u>	

ILLUSTRATION 21.30 Lease Classification Tests—Operating Lease

Under the operating method, Hathaway (the lessor) continues to recognize the asset on its statement of financial position and recognizes lease revenue (generally on a straight-line basis) in each period. Hathaway continues to **depreciate the leased asset** (see Underlying Concepts).

Underlying Concepts

Since the lessor owns the underlying asset, the lessor depreciates the compactor over its entire useful life.

To illustrate the operating method for the Hathaway/M&S lease, Hathaway records the lease payment on a straight-line basis on January 1, 2022, 2023, and 2024, as follows.

January 1, 2022, 2023, and 2024		
Cash	17,620.08	
Unearned Lease Revenue		17,620.08

On December 31, 2022, 2023, and 2024, Hathaway records the recognition of the revenue each period as follows.

Unearned Lease Revenue	17,620.08
Lease Revenue	17,620.08

Hathaway also records depreciation expense on the leased equipment (assuming the double-declining-balance method, given a cost basis of £60,000 and a five-year economic life), as follows.

Depreciation Expense ($\text{£}60,000 \times .40$)	24,000.00	
Accumulated Depreciation—Equipment		24,000.00

In addition to depreciation expense, Hathaway records other costs related to the lease arrangement, such as insurance, maintenance, and taxes, in the period incurred. Hathaway classifies the leased equipment and accompanying accumulated depreciation as Leased Assets.

Special Lease Accounting Problems

LEARNING OBJECTIVE 4

Discuss the accounting and reporting for special features of lease arrangements.

The features of lease arrangements that cause unique accounting problems are:

1. Other lease adjustments.
2. Presentation, disclosure, and analysis.

Other Lease Adjustments

Additional lease adjustments that affect the measurement of lease assets and liabilities relate to the following:

- Executory costs.
- Lease prepayments and incentives.
- Initial direct costs.

Executory Costs

Executory costs are normal expenses associated with owning a leased asset, such as property insurance and property taxes. The accounting for executory costs depends on how the lease is structured, that is, whether the lease is a gross lease or a net lease. In a gross lease, the payments to the lessor are fixed as part of the rental payments in the contract. In a net lease, the lessee makes variable payments to a third party or to the lessor directly for the executory costs.

[Illustration 21.31](#) provides examples of these two situations.

Gross versus Net Leases

Facts: Ortiz SpA enters into a lease arrangement to lease a retail space in a shopping mall from Bryant Group. The lease term is 2 years with monthly payments of €15,000 per month. Ortiz does not have any obligation to pay any of the property taxes or property insurance on the retail space. Ortiz estimates that Bryant is paying approximately €1,500 per month related to these executory costs.

Question: How should Ortiz account for the executory costs in this situation?

Solution: Ortiz and Bryant have a gross lease arrangement in that the property taxes and property insurance are included in the rental payments made by Ortiz. In this arrangement, the payment for the executory costs are fixed (per the rental agreement) and should be included in the computation of the lease liability.

Now assume that Ortiz agrees to a lease arrangement in which it must reimburse the lessor for the property taxes and property insurance, or pay a relevant third party directly. In this case, Ortiz and Bryant have a net lease arrangement because the lessee makes variable payments to a third party or to the lessor for the executory costs. In this case, Ortiz is responsible for paying directly the executory costs and therefore it is a variable payment which is expensed in the period incurred (not included in the lease liability and right-of-use assets).

ILLUSTRATION 21.31 Executory Cost Example

Note that including executory costs in the measurement of the lease liability and related right-of-use asset may lead to inflated values on the statement of financial position in comparison to lessees who do not capitalize these costs. Thus, the way parties structure the payment of executory costs (i.e., variable or fixed) can have potentially material implications with regard to the values that appear on the statement of financial position.

In summary, executory costs included in the fixed payments required by the lessor should be included in lease payments for purposes of measuring the lease liability. Payments by the lessee made directly to the taxing authority or insurance provider are considered variable payments and are expensed as incurred. [13]

Lease Prepayments and Incentives

For all leases at the commencement date, the lease liability is the starting point to determine the amount to record for the right-of-use asset. Companies adjust the right-of-use asset for any lease prepayments, lease incentives, and initial direct costs made prior to or at the commencement date. These adjustments determine the amount to report as the right-of-use asset at the lease commencement date as follows.

1. Lease prepayments made by the lessee **increase** the right-of-use asset.
2. Lease incentive payments made by the lessor to the lessee **reduce** the right-of-use asset.
3. Initial direct costs incurred by the lessee (discussed in the next section) **increase** the right-of-use asset.

Illustration 21.32 identifies the adjustments made to the lease liability balance to determine the proper amount to report for the right-of-use asset.

Initial Measurement of Lease Liability	+	Prepaid Lease Payments	-	Lease Incentives Received	+	Initial Direct Costs	=	Right-of-Use Asset
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ILLUSTRATION 21.32 Right-of-Use Asset Adjustments

Initial Direct Costs

Initial direct costs are incremental costs of a lease that would not have been incurred had the lease not been executed. [14] Costs directly or indirectly attributable to negotiating and arranging the lease (e.g., external legal costs to draft or negotiate a lease or an allocation of internal legal costs) are not considered initial direct costs. **Illustration 21.33** provides examples of costs included and excluded from initial direct costs from the lessee and lessor side.²⁰

Included	Excluded
<ul style="list-style-type: none"> • Commissions (including payments to employees acting as selling agents) • Legal fees resulting from the execution of the lease • Lease document preparation costs incurred after the execution of the lease • Consideration paid for a guarantee of residual value by an unrelated third party 	<ul style="list-style-type: none"> • Employee salaries • Internal engineering costs • Legal fees for services rendered before the execution of the lease • Negotiating lease term and conditions • Advertising • Depreciation • Costs related to an idle asset

ILLUSTRATION 21.33 Initial Direct Costs

Initial direct costs incurred by the lessee are included in the cost of the right-of-use asset but are not recorded as part of the lease liability.

Illustration 21.34 provides an example of the computation of the right-of-use asset with initial direct costs.

Right-of-Use Cost Analysis

Facts: Mangan Company leases from DeMallie Ltd. solar equipment for 8 years starting on January 1, 2022. The lease is a finance/sales-type lease. The terms of the lease are as follows.

1. DeMallie will pay Mangan €30,000 as a cash incentive for entering the lease by January 1, 2022.
2. DeMallie pays initial direct costs of €5,000 for legal fees related to the execution of the lease.
3. Mangan incurred €1,500 of initial direct costs (commission paid to lease negotiator) which are payable by January 1, 2022.
4. Mangan must pay not only the first rental payment of €10,000 on January 1, 2023, but also must prepay the last month's rental payment on December 31, 2021.
5. The initial measurement of the liability is €400,000.

Question: What is the amount to be reported for Mangan's right-of-use asset at the commencement date?

Solution: The measurement of the right-of-use asset for Mangan is as follows.

Initial measurement of the lease liability	€400,000
Cash incentive received from DeMallie (lessor)	(30,000)
Initial direct costs (commission paid to lease negotiator)	1,500
Prepayments made by Mangan to DeMallie before the lease commencement	10,000
Measurement of right-of-use asset at January 1, 2022	<u>€381,500</u>

Mangan therefore reports the right-of-use asset at €381,500.

DeMaille (the lessor) expenses its initial direct costs in the period incurred, given that DeMaille reported a gross profit related to its sales-type lease.

ILLUSTRATION 21.34 Computation of Right-of-Use Asset

For lessors, initial direct costs often are more significant because they usually solicit lessees as part of their sales activities. As a result, lessors often engage attorneys to prepare the legal documents, as well as pay commissions incurred in connection with the execution of a lease.

Lessor accounting for initial direct costs depends on the type of lease. [15]

- For **operating leases**, a lessor defers the initial direct costs and amortizes them as expenses over the term of the lease.
- For **finance leases**, the lessor expenses initial direct costs at lease commencement (in **the period** in which it recognizes the profit on the sale). An exception is when there is no selling profit or loss on the transaction. If there is no selling profit or loss, the initial direct costs are deferred and recognized over the lease term.

Lessors commonly also incur **internal costs** related to leasing activities, such as advertising, servicing existing leases, and establishing and monitoring credit policies, as well as the costs for supervision and administration or for expenses such as rent and depreciation. Internal direct costs should not be included in initial direct costs. Such costs would have been incurred regardless of whether a lease was executed. As a result, internal direct costs are generally expensed as incurred.

Presentation, Disclosure, and Analysis

Presentation

Illustration 21.35 is a summary of how the **lessee** reports the information related to leases in the financial statements.

	Statement of Financial Position	Income Statement
All Leases*	Right-of-use asset	Depreciation expense
	Lease liability	Interest expense

*Except low-value and short-term leases.

ILLUSTRATION 21.35 Presentation in Financial Statements—Lessee

Illustration 21.36 is a summary of **lessor** presentation of lease information in the financial statements.

	Statement of Financial Position	Income Statement
Finance Lease	Lease receivable presented separate from other assets	Interest revenue
	Derecognize the leased asset	Selling profit or loss for a sales-type lease
Operating Lease	Continue to recognize assets subject to operating leases as property, plant, and equipment	Revenue generally recognized on a straight-line basis
		Depreciation expense on the leased asset

ILLUSTRATION 21.36 Presentation in Financial Statements—Lessor

Disclosure

Lessees and lessors must also provide additional qualitative and quantitative disclosures to help financial statement users assess the amount, timing, and uncertainty of future cash flows. These disclosures are intended to supplement the amounts provided in the financial statements. Qualitative disclosures to be provided by both lessees and lessors are summarized in **Illustration 21.37.** [16]

- Nature of the leases, including a general description.
- How variable lease payments are determined.
- Existence and terms and conditions for options to extend or terminate the lease, and for residual value guarantees.
- Information about significant assumptions and judgments (e.g., discount rates).

ILLUSTRATION 21.37 Qualitative Lease Disclosures

Illustration 21.38 presents the type of quantitative information that should be disclosed for **the lessee**.

- Total lease cost.
- Finance lease cost, segregated between the depreciation of the right-of-use assets and interest on the lease liabilities.
- Low-value and short-term lease cost.
- Weighted-average remaining lease term and weighted-average discount rate.
- Maturity analysis of finance lease liabilities, on an annual basis for a minimum of each of the next five years, the sum of the undiscounted cash flows for all years thereafter.

ILLUSTRATION 21.38 Lessee Quantitative Disclosures

Illustration 21.39 presents financial statement excerpts from the 2018 annual report of **Air France** (FRA). These excerpts represent the statement and note disclosures typical of a lessee.

Air France (partial) (€ in millions)					
					2018
<u>Non-Current Assets</u>					
Right-of-use assets					€5,243
<u>Liabilities</u>					
Lease debt					€4,535
Note 4.15. Lease contracts					
Types of capitalized lease contracts					
— Aircraft lease contracts					
For the aircraft lease contracts fulfilling the capitalization criteria defined by IFRS 16, the lease term corresponds to the duration of the contracts signed except in cases where the Group is reasonably certain of exercising the renewal options contractually foreseen. The discount rate used to calculate the lease debt corresponds, for each aircraft, to the implicit interest rate induced by the contractual elements and residual market values. The present value should be equal to the sum of the fair value of the leased asset and any initial direct costs of the lessor.					
— Real-estate lease contracts					
Based on its analysis, the Group has identified lease contracts according to the standard concerning surface areas rented in its hubs, lease contracts on building dedicated to the maintenance business, customized lounges in airports other than hubs and lease contracts on office buildings. The lease term corresponds to the non-terminable period. Most of the contracts do not provide renewal options. The discount rate used to calculate the lease debt is determined, for each asset, according to the incremental borrowing rate at the signature date.					
Note 20. Right-of-use assets					
The table below presents the right-of-use assets per category:					
Right-of-use assets	Aircraft	Maintenance	Land & Real Estate	Others	Total
	As of December 31, 2017	3,792	1,213	473	246
	New contract	27	118	249	34
	Change in contract	99	71	2	—
	Disposals	(1)	(4)	—	1
	Reclassification	(3)	169	6	35
	Amortization	(795)	(289)	(122)	(60)
	Others	18	(9)	(23)	(4)
	As of December 31, 2018	<u>3,137</u>	<u>1,269</u>	<u>585</u>	<u>252</u>
Note 32. Lease Debt					
As of December 31, 2018					
Reconciliation, timing, and amounts of cash outflows	Non-current	Current	Total		
	Lease debt-aircraft	2,657	821	3,478	
	Lease debt-real estate	654	119	773	
	Lease debt-other	234	30	264	
	Accrued interest	1	19	20	
	Total-Lease debt	<u>3,546</u>	<u>989</u>	<u>4,535</u>	
The lease debt maturity breaks down as follows as of December 31, 2018:					
	Y+1	1,236			
	Y+2	1,090			
	Y+3	921			
	Y+4	744			
	Y+5	490			
	Over 5 years	1,124			
	Total	<u>5,605</u>			
Including:					
— Principal					
— Interest					
Types of non-capitalized lease contracts					
The Group uses the two exemptions foreseen by the standard allowing for non-recognition in the balance sheet: short-term lease contracts and lease contracts for which the underlying assets have a low value.					
Short duration lease contracts					
There are contracts whose duration is equal to or less than 12 months. Within the Group, they mainly relate to leases of:					
— Surface areas in our hubs with a reciprocal notice-period equal to or less than 12 months;					
— Accommodations for expatriates with a notice period equal to or less than 12 months;					
— Spare engines for a duration equal to or less than 12 months.					
Low value lease contracts					
Low-value lease contracts concern assets with a value equal to or less than US\$5,000. Within the Group, these include, notably, lease contracts on printers, tablets, laptops and mobile phones.					

General description

ILLUSTRATION 21.39 Disclosure of Leases by Lessee

Illustration 21.40 shows the type of quantitative information that should be disclosed for the lessor.

- Lease-related income, including profit and loss recognized at lease commencement for sales-type and direct financing leases, and interest income.
- Income from variable lease payments not included in the lease receivable.
- The components of the net investment in sales-type and other financing leases, including the carrying amount of the lease receivable, the unguaranteed residual asset, and any deferred profit on direct financing leases.
- A maturity analysis for operating lease payments and a separate maturity analysis for the lease receivable (sales-type and direct financing leases).
- Management approaches for risk associated with residual value of leased assets (e.g., buyback agreements or third-party insurance).

ILLUSTRATION 21.40 Lessor Quantitative Disclosures

Illustration 21.41 presents the lease note disclosure from the 2018 annual report of **Trinity Biotech plc** (IRL). The disclosure highlights required lessor disclosures.



Trinity Biotech
Notes to Financial Statements

Note 17: Trade and Other Receivables (in part)

Finance Lease Commitments

The Group leases instruments as part of its business. Future minimum finance lease receivables with non-cancellable terms are as follows:

	December 31, 2018 US\$'000		
	Gross Investment	Unearned Income	Minimum Payments Receivable
Less than 1 year	617	258	359
Between 1 and 5 years	888	412	476
	<u>1,505</u>	<u>670</u>	<u>835</u>

Operating Lease Commitments

The Group leases instruments under operating leases as part of its business. Future minimum rentals receivable under non-cancellable operating leases are as follows:

	December 31, 2018 US\$'000	
	Instruments	Total
Less than 1 year	3,498	3,498
Between 1 and 5 years	32	32
More than 5 years	—	—
	<u>3,530</u>	<u>3,530</u>

General description
Reconciliation and timing of amounts receivable and unearned revenue

Description of leased assets
Nature, timing, and amounts of future rentals

ILLUSTRATION 21.41 Disclosure of Leases by Lessor

Analysis

Many companies that lease are likely to see the amounts reported in their statements of financial position grow substantially over the next few years as a result of implementing the new standard on leasing. Estimates as to its impact on the assets and liabilities of companies vary, but it will be in the trillions of dollars.

As shown in the opening story, airlines use lease arrangements extensively, which results in a great deal of off-balance-sheet financing. However, airlines have not been the only ones playing the off-balance-sheet leasing game. As indicated in [Illustration 21.1](#), retailers like **Marks and Spencer plc** and **Carrefour**, and publisher **RELX** employ leases in their businesses. Thus, analysts must adjust reported debt levels for the effects of non-capitalized leases. A PwC survey of 3,000 international companies indicated the impacts of leasing for several industries as shown in [Illustration 21.42](#).

	Average Increase in Interest-Bearing Debt	Companies with over 25% Increase	Average Increase in Leverage
Retail and trade	213%	71%	64%
Other services	51	35	34
Transportation and warehousing	95	38	31
Professional services	158	52	19
Accommodation	101	41	18
All companies	58%	4%	13%

ILLUSTRATION 21.42 Leasing Impacts

Some contend that “grossing up” the assets and liabilities on companies’ statements of financial position will not have any significant impact on analysis, based on information in the financial statements. Their rationale is that equity does not change substantially, nor will net income. In addition, it is argued that users could have determined the obligations that lessees were incurring by examining the notes to the financial statements.

These assertions are debatable. With the increase in the assets and liabilities as a result of the new standard, a number of financial metrics used to measure the profitability and solvency of companies will change, which could create challenges when performing financial analysis. On the profitability side, return on assets will decrease because a company’s assets will increase, but net income will often be the same. Furthermore, analysts commonly focus on income subtotals, such as earnings before interest, taxes, and depreciation and amortization (EBITDA), which likely will require some adjustments as companies depreciate right-of-use

assets and record interest expense. On the solvency side, the debt to equity ratio will increase, and the interest coverage ratio will decrease. In addition, recent studies indicate that using only note disclosures to determine lease obligations has understated their numerical impact.²¹

One thing is certain—the grossing up of the assets and liabilities related to lease arrangements will have significant consequences on the organizational, operational, and contractual side. Examples are:

1. Jurisdictions often levy taxes based on property amounts, which will now be higher.
2. Performance metrics to evaluate management may have to change for companies, particularly when growth rates in assets are used or returns on assets are used to measure performance.
3. Companies may have contracts with governments for which reimbursement is based on rent expense, which may change the compensation agreement.
4. Debt covenants may require revisions.

Given the pervasiveness and magnitude of the changes, it is not surprising that the IASB has allowed an extended implementation window to allow companies and users of financial statements to adapt to the new standard.

Evolving Issue

Bring It On!

As discussed in the opening story, the lease accounting rules will bring a significant amount of lease-related assets and liabilities onto lessee statements of financial position. For example, recent estimates for the largest 100 U.S. companies put the number at over \$539 billion. Most agree this is a good result—applying the “right-of-use” model will result in reporting more relevant and representationally faithful information about leasing arrangements, which is a big win for investors and creditors. As the chairperson of the IASB remarked, “. . . a financing, in the form of a loan to purchase an asset . . . then is recorded. Call it a lease and miraculously it does not show up in your books. In my book, if it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck. So is the case with debt—leasing or otherwise.”

At the same time, as the following table demonstrates, an analysis of the new rules and how they might impact the advantages of leasing suggests that many of the advantages of leases will remain after implementation of the new rules.

Reason for Leasing	Details	Status after Proposed New Rules Implemented
Funding source	Additional capital source, 100% financing, fixed rate, level payments, longer terms.	Still a major benefit versus a purchase—fixed rate, level payments—especially for smaller companies with limited sources of capital.
Low-cost capital	Low payments/rate due to tax benefits, residual and lessor's comparatively low cost of funds.	Still a benefit versus a loan.
Tax benefits	Lessee cannot use tax benefits and lease versus buy shows lease option offers lowest after tax cost.	Still a benefit.
Manage need for	Lessee has flexibility to return asset.	Still a benefit.

assets/residual risk transfer		
Convenience	Quick and convenient financing process often available at point-of-sale.	Still a benefit.
Regulatory	Can help in meeting capital requirements.	Still a partial benefit if the capitalized amount is less than the cost of the asset, as it is in many leases due to residuals assumed and tax benefits.
Accounting	Asset and liability off-balance-sheet.	Still a partial benefit if the capitalized amount is less than the cost of the asset, as it is in many leases due to residuals assumed and tax benefits.

Sources: Equipment Leasing & Finance Foundation, *2016 State of the Equipment Finance Industry Report*; M. Murphy, “The Big Number: \$539 Billion,” *Wall Street Journal* (January 16, 2016); Hans Hoogervorst, “Harmonisation and Global Economic Consequences,” public lecture at the London School of Economics (November 6, 2012); “Telecom Industry Update: Benefits of Financing Remain with Lease Accounting Changes,” *Knowledge, Leasing/Finance* (www.telecomreseller.com/2016/05/09/telecom-industry-update-benefits-of-financing-remain-with-lease-accounting-changes/); and R. Petta, “The Silver Lining of Lease Accounting: What Organizations Should Know About Leasing Standards,” *www.manufacturing.net* (April 3, 2019).

APPENDIX 21A

Sale-Leasebacks

LEARNING OBJECTIVE *5

Describe the lessee’s accounting for sale-leaseback transactions.

In a **sale-leaseback** arrangement, a company (the seller-lessee) transfers an asset to another company (the buyer-lessor) and then leases that asset back from the buyer-lessor. For example, **Darden Restaurants** (USA) sold off its Red Lobster division to **Golden Gate Capital** (USA) (a private equity firm) for \$2.1 billion recently and then leased these restaurants back from Golden Gate Capital. This transaction is shown in [Illustration 21A.1](#).

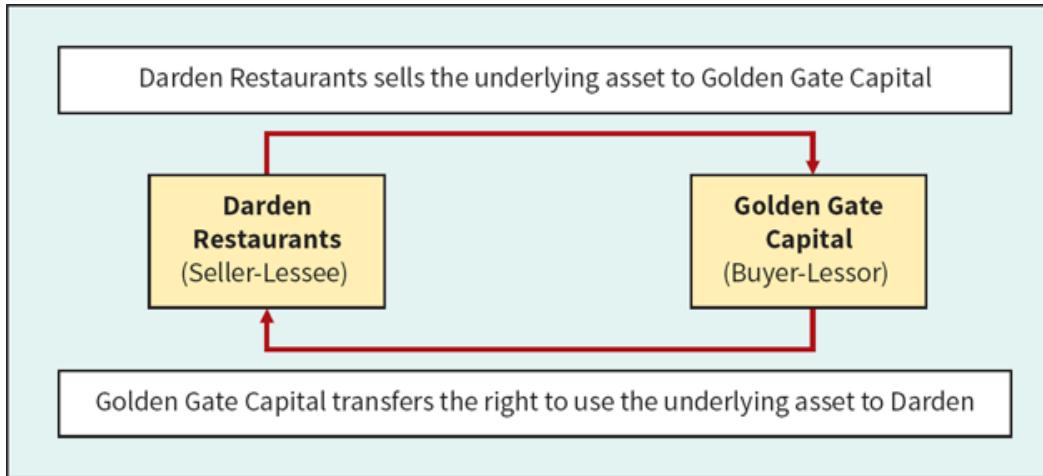


ILLUSTRATION 21A.1 Sale-Leaseback

Why do companies like Darden Restaurants engage in sale-leaseback transactions? Some major reasons are:

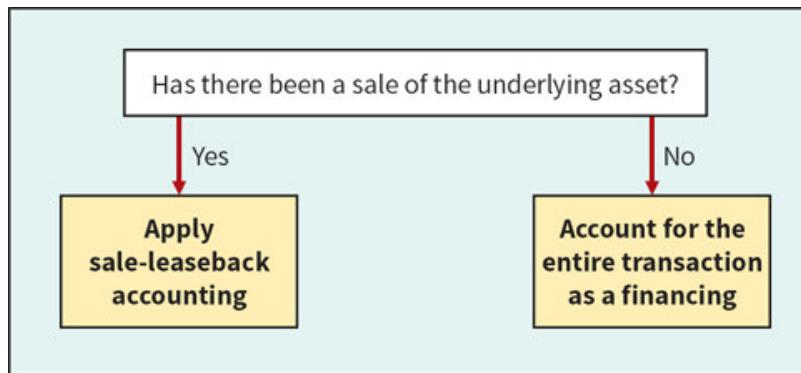
1. Darden can use the cash that otherwise would be tied up in property to expand its operations. At the same time, it continues to use the property through the lease term.
2. Darden can structure the lease arrangement so issues such as repurchase provisions, refinancing issues, and conventional financing costs are minimized.
3. Darden may receive a tax advantage in that entire rental payments are tax-deductible, whereas under a conventional financing, only interest and depreciation can be deducted. If the lease has a significant land component (land is not depreciable) or if the fair value of the property is much greater than the carrying value of the property (depreciation limited to cost of property), then the sale lease-back arrangement generally reduces tax payments.

The advantages to Golden Gate Capital (buyer-lessor) are that it generally can earn a higher rate of return under a sale-leaseback than under traditional financing. In addition, during the lease term, Golden Gate is protected from a downturn in the real estate market and may have an inflation hedge, provided the property appreciates in value.

Sale-leasebacks are common. Financial institutions (e.g., **HSBC** (GBR) and **BBVA** (ESP)) have used this technique for their administrative offices, retailers (**Liberty** (GBR)) for their stores, and hospitals (**Healthscope** (AUS)) for their facilities.

Accounting Issues in Sale-Leaseback Transactions

When Darden transfers ownership of the Red Lobster restaurants to Golden Gate Capital and then leases them back, the accounting issue is whether the transaction is a sale or a financing. To determine whether it is a sale, revenue recognition guidelines are used. That is, if control passes from seller to buyer, then a sale has occurred. Conversely, if control does not pass from seller to buyer, the transaction is recorded as a financing (often referred to as a failed sale). [\[17\] Illustration 21A.2](#) highlights these two approaches.



[ILLUSTRATION 21A.2](#) Sale-Leaseback Accounting

Sale Transaction

As indicated, if Darden (seller-lessee) **gives up control** of the Red Lobster restaurants, the transaction is a sale. In a sale, **gain or loss recognition** is appropriate. Darden then records the transaction as follows.

1. Increases cash and reduces the carrying value of the asset to zero (referred to as derecognizing the asset).
2. Recognizes a gain or loss as appropriate.
3. Accounts for the leaseback in accordance with lease accounting guidance covered in this chapter.

For example, assume that **Stora Enso** (FIN) sells one of its buildings having a carrying value of €580,000 (building €800,000 less accumulated depreciation €220,000) to **Deutsche Bank** (DEU) for €623,110. It then leases the building back from Deutsche Bank for €50,000 a year, for eight of the building's 15 years of remaining economic life. Assume that the present value of these lease payments is equal to €310,000, such that the lease is classified as an operating lease by Deutsche Bank. Stora Enso makes the following entries to record the sale-leaseback.

Cash	623,110
------	---------

Accumulated Depreciation—Buildings	220,000	
Buildings		800,000
Gain on Disposal of Plant Assets		43,110
(€623,110 – €580,000)		

In addition, Stora Enso makes an entry to record the operating lease from Deutsche Bank as follows.

Right-of-Use Asset	310,000	
Lease Liability		310,000

Financing Transaction (Failed Sale)

Stora Enso does not record a sale in the above transaction if the lease from Deutsche Bank is classified as a finance lease (see [Underlying Concepts](#)). The reason: if any of the lease classification tests are met, Stora Enso, not Deutsche Bank, controls the asset. If Stora Enso **continues to control the building, it should not record a sale nor recognize a gain or loss** on the transaction. In essence, Stora Enso is borrowing money from Deutsche Bank (often referred to as a financing or a **failed sale**). In a financing (failed sale), Stora Enso:

Underlying Concepts

A sale-leaseback under a financing transaction is similar in substance to the parking of inventories (discussed in [Chapter 8](#)). The ultimate economic benefits remain under the control of the “seller-lessee,” so revenue (gain) should not be recognized.

- Does not reduce the carrying value of the building.
- Continues to depreciate the building as if it was the legal owner.
- Recognizes the sale proceeds from Deutsche Bank as a financial liability.

The entry to record the financing is as follows.

Cash	623,110	
Notes Payable		623,110

Sale-Leaseback Example

To illustrate the accounting treatment accorded a sale-leaseback transaction over the lease term, assume that **Japan Airlines (JAL)** (JPN) on January 1, 2022, sells a used, standard-design Boeing 757 having a carrying amount on its books of

\$30,000,000 to **CitiCapital** (USA) for \$33,000,000. JAL immediately leases the aircraft back under the following conditions.

- The term of the lease is seven years. The lease agreement is non-cancelable, requiring equal rental payments of \$4,881,448 at the end of each year (ordinary annuity basis), beginning December 31, 2022.
- The lease contains no renewal or purchase options. The plane reverts to CitiCapital at the termination of the lease.
- The aircraft has a fair value of \$33,000,000 on January 1, 2022, and an estimated remaining economic life of 10 years. The residual value (unguaranteed) at the end of the lease is \$13,000,000.
- The annual payments assure the lessor an eight percent return (which is the same as JAL's incremental borrowing rate).

Applying the classification tests, the lease-back of the airplane is classified as an operating lease because none of the sales-type lease criteria are met, as indicated in [Illustration 21A.3](#).

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to CitiCapital at the end of the lease.
2. Purchase option test	There is no purchase option in the lease.
3. Lease term test	The lease term is 70% ($7 \div 10$) of the remaining economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is \$25,414,624*, which is 77% ($\$25,414,624 \div \$33,000,000$) of the fair value of the aircraft, or less than 90%. Therefore, the lease does not meet the present value test.
5. Alternative use test	As indicated, the equipment is not of a specialized nature and is expected to have use to CitiCapital when returned at the end of the lease.

* $\$4,881,448 \times 5.20637$ (PVF-OA_{7,8%})

ILLUSTRATION 21A.3 Lease Classification Tests

Thus, this arrangement is accounted for as a sale, rather than a failed sale, because the leaseback does not transfer control of the asset back to JAL; that is, only the right-of-use for seven years is granted through the lease. **Illustration 21A.4** presents the typical journal entries to record the sale-leaseback transactions for JAL and CitiCapital for the first two years of the lease.

<u>JAL (Lessee)</u>		<u>CitiCapital (Lessor)</u>		
Sale of aircraft by JAL to CitiCapital (January 1, 2022):				
Cash	33,000,000	Aircraft	33,000,000	
Gain on Disposal of Plant Assets	3,000,000	Cash	33,000,000	
Aircraft	30,000,000			
Right-of-Use Asset	25,414,624			
Lease Liability	25,414,624			
First lease payment (December 31, 2022):				
Interest Expense	2,033,170*	Cash	4,881,448	
Lease Liability	2,848,278	Lease Revenue	4,881,448	
Cash	4,881,448			
Depreciation expense on the aircraft (December 31, 2022):				
Depreciation Expense	3,630,661	Depreciation Expense	3,300,000	
Right-of-Use Asset ($\$25,414,624 \div 7$ years)	3,630,661	($\$33,000,000 \div 10$)		
		Accumulated Depreciation - Leased Equipment	3,300,000	
Second lease payment (December 31, 2023):				
Interest Expense	1,805,308*	Cash	4,881,448	
Lease Liability	3,076,140	Lease Revenue	4,881,448	
Cash	4,881,448			
Depreciation expense on the aircraft (December 31, 2023):				
Depreciation Expense	3,630,661	Depreciation Expense	3,300,000	
Right-of-Use Asset ($\$25,414,624 \div 7$ years)	3,630,661	($\$33,000,000 \div 10$)		
		Accumulated Depreciation— Leased Equipment	3,300,000	
*Partial Lease Amortization Schedule				
Date	Annual Lease Payment	Interest (8%) on Liability	Reduction of Lease Liability	Lease Liability
Jan. 2022				\$25,414,624
Dec. 2022	\$4,881,448	\$2,033,170	\$2,848,278	22,566,346
Dec. 2023	4,881,448	1,805,308	3,076,140	19,490,206

ILLUSTRATION 21A.4 Comparative Entries for Sale-Leaseback for Lessee and Lessor

As indicated, JAL amortizes the lease liability and depreciates the right-of-use asset, resulting in interest and depreciation expense. CitiCapital (the buyer-lessor) continues to recognize the asset on its statement of financial position and recognizes equal amounts of rental revenue (straight-line basis) in each period. It **depreciates the leased asset generally on a straight-line basis.**

APPENDIX 21B

Comprehensive Examples

LEARNING OBJECTIVE *6

Apply lessee and lessor accounting to finance and operating leases.

This appendix presents a comprehensive illustration of lessee and lessor accounting for a lease arrangement when classified as a finance/sales-type or

operating lease.

Lease Terms: Scenario 1

Parker Shipping Ltd. (lessee) leases a standard hydraulic lift from Stoughton Trailers AG (the lessor) that will be installed at one of Parker's loading docks. The lease, signed on January 1, 2022, specifies that Stoughton grants right-of-use of the lift to Parker under the following terms:

- The lease agreement is non-cancelable with a term of four years, requiring equal rental payments of €11,182.24 at the beginning of each year of the lease (annuity-due basis).
- The lift has a fair value at commencement of the lease of €40,000, an **estimated economic life of four years, and no residual value**. The cost of the lift on Stoughton's books is €30,000.
- The lease contains no renewal options. The lift reverts to Stoughton at the termination of the lease.
- The implicit rate of the lessor is 8 percent and is known by Parker. Stoughton sets the annual rental as shown in [Illustration 21B.1](#).

Fair value of leased equipment	€40,000.00
Less—present value of the residual value	0.00
Amount to be recovered by lessor through lease payments	€40,000.00
Four beginning-of-year lease payments to earn an 8% return (€40,000 ÷ 3.57710 (PVF-AD_{4,8%}))	€ 11,182.24

[ILLUSTRATION 21B.1 Lease Payment Calculation](#)

Lease Classification

Stoughton (lessor) evaluates the lease classification tests as indicated in [Illustration 21B.2](#).

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Stoughton at the end of the lease.
2. Purchase option test	There is no bargain purchase option in the lease.
3. Lease term test	The lease term is equal to the economic life of the asset (100%). Therefore, the lease meets the lease term test.
4. Present value test	The present value of the lease payments is €40,000*, which is 100% (greater than or equal to 90%) of the fair value of the hydraulic lift. Therefore, the lease meets the present value test.
5. Alternative use test	As indicated, the hydraulic lift will be completely used up at the end of the lease, and of no benefit to Stoughton.

* $\text{€}11,182.24 \times 3.57710 (PVF-AD_{4,8\%}) = \text{€}40,000.00$

ILLUSTRATION 21B.2 Lease Classification Tests

Thus, the lease is classified as a finance (sales-type) lease due to meeting the lease term and present value tests (either is sufficient).

Lessee/Lessor Accounting

The accounting for the lease liability (Parker) and lease receivable (Stoughton) is based on the amounts reported in the amortization schedule presented in

Illustration 21B.3.²²

Parker Shipping/Stoughton Trailers
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (8%) on Liability/ Receivable	Reduction of Lease Liability/ Receivable	Lease Liability/ Receivable
	(a)	(b)	(c)	(d)
1/1/22				€40,000.00
1/1/22	€11,182.24	€ -	€11,182.24	28,817.76
1/1/23	11,182.24	2,305.42	8,876.82	19,940.94
1/1/24	11,182.24	1,595.28	9,586.96	10,353.98
1/1/25	11,182.24	828.26*	10,353.98	0.00
	<u>€44,728.96</u>	<u>€4,728.96</u>	<u>€40,000.00</u>	

- a. Lease payment as required by lease.
- b. Eight percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
- c. (a) minus (b).
- d. Preceding balance minus (c).

*Rounded by €0.06.

ILLUSTRATION 21B.3 Lease Liability Amortization Schedule

Entries for Parker (lessee) and Stoughton (lessor) over the life of the lease are presented in **Illustration 21B.4**, based on the amounts reported in the amortization schedule in **Illustration 21B.3**.

Parker Shipping (Lessee)		Stoughton Trailers (Lessor)	
Lease commencement/first payment (January 1, 2022):			
Right-of-Use Asset Lease Liability	40,000.00 40,000.00	Lease Receivable Cost of Goods Sold Inventory Sales Revenue	40,000.00 30,000.00 30,000.00 40,000.00
Interest accrual and depreciation expense (December 31, 2022):			
Interest Expense Lease Liability	2,305.42 2,305.42	Lease Receivable Interest Revenue	2,305.42 2,305.42
Depreciation Expense Right-of-Use Asset ($\text{€}40,000 \div 4 \text{ years}$)	10,000.00 10,000.00		No entry
Statement of Financial Position		Statement of Financial Position	Income Statement
<u>Non-current assets</u> Right-of-use assets	<u>€30,000.00</u>	Interest expense Depreciation expense	€ 2,305.42 10,000.00
<u>Current liabilities</u> Lease liability	11,182.24		
<u>Non-current liabilities</u> Lease liability	19,940.94		
Second lease payment (January 1, 2023):			
Lease Liability ($\text{€}8,876.82 + \text{€}2,305.42$) Cash	11,182.24 11,182.24	Cash Lease Receivable	11,182.24 11,182.24
Interest accrual and depreciation expense (December 31, 2023):			
Interest Expense Lease Liability	1,595.28 1,595.28	Lease Receivable Interest Revenue	1,595.28 1,595.28
Depreciation Expense Right-of-Use Asset ($\text{€}40,000 \div 4 \text{ years}$)	10,000.00 10,000.00		No entry
Statement of Financial Position		Statement of Financial Position	Income Statement
<u>Non-current assets</u> Right-of-use assets	<u>€20,000.00</u>	Interest expense Depreciation expense	€ 1,595.28 10,000.00
<u>Current liabilities</u> Lease liability	11,182.24		
<u>Non-current liabilities</u> Lease liability	10,353.98		
Third lease payment (January 1, 2024):			
Lease Liability ($\text{€}9,586.96 + \text{€}1,595.28$) Cash	11,182.24 11,182.24	Cash Lease Receivable	11,182.24 11,182.24
Interest accrual and depreciation expense (December 31, 2024):			
Interest Expense Lease Liability	828.26 828.26	Lease Receivable Interest Revenue	828.26 828.26
Depreciation Expense Right-of-Use Asset ($\text{€}40,000 \div 4 \text{ years}$)	10,000.00 10,000.00		No entry
Statement of Financial Position		Statement of Financial Position	Income Statement
<u>Non-current assets</u> Right-of-use assets	<u>€10,000.00</u>	Interest expense Depreciation expense	€ 828.26 10,000.00
<u>Current liabilities</u> Lease liability	11,182.24		
Fourth lease payment (January 1, 2025):			
Lease Liability ($\text{€}10,353.98 + \text{€}828.26$) Cash	11,182.24 11,182.24	Cash Lease Receivable	11,182.24 11,182.24

ILLUSTRATION 21B.4 Lessee/Lessor Entries for Finance/Sales-Type Lease

Lease Terms: Scenario 2

Now consider the following revised terms of the lease between Parker Shipping Ltd. and Stoughton Trailers AG for the right-of-use of a hydraulic lift. The lease, signed on January 1, 2022, specifies that Stoughton grants right-of-use of the lift to Parker under the following terms.

- The lease agreement is non-cancelable with a term of four years, requiring equal rental payments of €9,538.39 with the first payment on January 1, 2022 (annuity-due basis).
- The lift has a fair value at commencement of the lease of €40,000, an estimated **economic life of six years**. The lift has a **residual value at the end of the lease of €8,000 (unguaranteed)**. The cost of the lift on Stoughton's books is €30,000.
- The lease contains no renewal options. The lift reverts to Stoughton at the termination of the lease.
- The implicit rate of Stoughton (the lessor) is eight percent and is known by Parker.

Stoughton determines the rental payments such that it earns a rate of return of eight percent per year (implicit rate) on its investment, as shown in [Illustration 21B.5](#).

Fair value of leased equipment	€40,000.00
Less: Present value of the residual value ($€8,000 \times .73503 (\text{PV}_{4,8\%})$)	5,880.24
Amount to be recovered by lessor through lease payments	€ 34,119.76
Four beginning-of-year lease payments to earn an 8% return ($€34,119.76 \div 3.57710 (\text{PVF-AD}_{4,8\%})$)	€ 9,538.39

[ILLUSTRATION 21B.5 Computation of Lease Payments](#)

Lease Classification

Stoughton evaluates the lease classification tests as indicated in [Illustration 21B.6](#).

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Stoughton at the end of the lease.
2. Purchase option test	There is no bargain purchase option in the lease.
3. Lease term test	The lease term is 66.67% ($4 \div 6$) of the economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is €34,119.76*, which is 85.3% ($\text{€34,119.76} \div \text{€40,000}$) of the fair value of the lift. Therefore, it does not meet the present value test.
5. Alternative use test	The equipment is not of a specialized nature and is expected to have use to Stoughton when returned at the end of the lease.

* $\text{€9,538.39} \times 3.57710$ (PVF-AD4,8%)

ILLUSTRATION 21B.6 Lease Classification Tests

Thus, the lease is classified as an operating lease by Stoughton (the lessor), as none of the classification tests are met.

Lessee Accounting

Parker makes the following entry to record this lease and the first payment.

January 1, 2022		
Right-of-Use Asset	34,119.76	
Lease Liability		34,119.76
Lease Liability	9,538.39	
Cash		9,538.39

Illustration 21B.7 shows the interest expense and amortization of the lease liability, applying the effective-interest method.

Parker Shipping Ltd.
Lease Amortization Schedule
Annuity-Due Basis

Date	Annual Lease Payment	Interest (8%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/22				€34,119.76
1/1/22	€ 9,538.39	€ -0-	€ 9,538.39	24,581.37
1/1/23	9,538.39	1,966.51	7,571.88	17,009.49
1/1/24	9,538.39	1,360.76	8,177.63	8,831.86
1/1/25	9,538.39	706.53*	8,831.86	0.00
	<u>€38,153.56</u>	<u>€4,033.80</u>	<u>€34,119.76</u>	

- a. Lease payment as required by lease.
- b. Eight percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
- c. (a) minus (b).
- d. Preceding balance minus (c).

*Rounded by €0.02.

ILLUSTRATION 21B.7 Lease Amortization Schedule—Lessee

The journal entries by Parker over the remaining life of the lease are presented in **Illustration 21B.8**.

Parker Shipping (Lessee)		
Interest accrual and depreciation expense (December 31, 2022):		
Interest Expense	1,966.51	
Lease Liability		1,966.51
Depreciation Expense	8,529.94	
Right-of-Use Asset ($\text{€}34,119.76 \div 4 \text{ years}$)		8,529.94
Statement of Financial Position		
Income Statement		
Non-current assets		Interest expense $\text{€} 1,966.51$
Right-of-use assets	€25,589.82	Depreciation expense 8,529.94
Current liabilities		
Lease liability	9,538.39	
Non-current liabilities		
Lease liability	17,009.49	
Second lease payment (January 1, 2023):		
Lease Liability ($\text{€}7,571.88 + \text{€}1,966.51$)	9,538.39	
Cash		9,538.39
Interest accrual and depreciation expense (December 31, 2023):		
Interest Expense	1,360.76	
Lease Liability		1,360.76
Depreciation Expense	8,529.94	
Right-of-Use Asset ($\text{€}34,119.76 \div 4 \text{ years}$)		8,529.94
Statement of Financial Position		
Income Statement		
Non-current assets		Interest expense $\text{€} 1,360.76$
Right-of-use assets	€17,059.88	Depreciation expense 8,529.94
Current liabilities		
Lease liability	9,538.39	
Non-current liabilities		
Lease liability	8,831.86	
Third lease payment (January 1, 2024):		
Lease Liability ($\text{€}8,177.63 + \text{€}1,360.76$)	9,538.39	
Cash		9,538.39
Interest accrual and depreciation expense (December 31, 2024):		
Interest Expense	706.53	
Lease Liability		706.53
Depreciation Expense	8,529.94	
Right-of-Use Asset ($\text{€}34,119.76 \div 4 \text{ years}$)		8,529.94
Statement of Financial Position		
Income Statement		
Non-current assets		Interest expense $\text{€} 706.53$
Right-of-use assets	€8,529.94	Depreciation expense 8,529.94
Current liabilities		
Lease liability	9,538.39	
Fourth lease payment (January 1, 2025):		
Lease Liability ($\text{€}8,831.86 + \text{€}706.53$)	9,538.39	
Cash		9,538.39
Depreciation Expense (December 31, 2025)		
Depreciation Expense	8,529.94	
Right-of-Use Asset ($\text{€}34,119.76 \div 4 \text{ years}$)		8,529.94

ILLUSTRATION 21B.8 Lessee Entries for Finance Lease

After the entry for the final payment on December 31, 2025, the lease liability and right-of-use asset are fully amortized and depreciated. The lease expense for the four years ($\text{€}38,153.56$) is comprised of depreciation of the right-of-use asset of $\text{€}34,119.76$, plus interest associated with the amortization of the lease liability of $\text{€}4,033.80$.

Lessor Accounting—Operating Lease

As shown in the evaluation of the classification tests in [Illustration 21B.6](#), Stoughton classifies the lease as an operating lease because none of the sales-type lease criteria are met. Stoughton's entries throughout the lease are presented in [Illustration 21B.9](#).

Stoughton Trailers (Lessor)		
Lease payments (January 1, 2022, 2023, 2024, 2025):		
Cash	9,538.39	
Unearned Lease Revenue		9,538.39
Recognize lease revenue, record depreciation (December 31, 2022, 2023, 2024, 2025):		
Unearned Lease Revenue	9,538.39	
Lease Revenue		9,538.39
Depreciation Expense ($\$30,000.00 \div 6$)	5,000.00	
Accumulated Depreciation—Equipment		5,000.00

[ILLUSTRATION 21B.9](#) Lessor Entries for Operating Lease

Under the operating method, Stoughton (the lessor) continues to recognize the asset on its statement of financial position and recognizes equal amounts of lease revenue (straight-line basis) in each period. It depreciates the leased asset generally on a straight-line basis over the asset's remaining economic life. In addition to the depreciation charge, Stoughton reports lease revenue separately from other revenues in its income statement or notes to its financial statements. A lessor should classify the leased equipment and accompanying accumulated depreciation separately from plant assets it owns as Equipment Leased to Others or Investment in Leased Property.

Review and Practice

Key Terms Review

[bargain purchase option](#)

[bargain renewal option](#)

[capitalization of leases](#)

[executory costs](#)

[*failed sale](#)

[finance lease](#)

[finance lease method](#)

[guaranteed residual value](#)
[implicit interest rate](#)
[incremental borrowing rate](#)
[initial direct costs](#)
[internal costs](#)
[lease](#)
[lease classification tests](#)
[lease receivable](#)
[lease term](#)
[lessee](#)
[lessor](#)
[low-value lease](#)
[operating lease](#)
[residual value](#)
[*sale-leaseback](#)
[sales-type lease](#)
[short-term lease](#)
[unguaranteed residual value](#)

Learning Objectives Review

1 Describe the environment related to leasing transactions.

A lease is a contract, or part of a contract, that conveys the right to control the use of identified property, plant, or equipment (an identified asset) for a period of time in exchange for consideration. The advantages of lease transactions for lessees are: (1) 100 percent financing, (2) protection against obsolescence, (3) flexibility, and (4) less costly financing. The benefits for lessors are: (1) profitable interest margins, (2) stimulation of product sales, (3) tax benefits and efficient tax sharing, and (4) residual value profits.

2 Explain the accounting for leases by lessees.

For all leases, the lessee records a right-of-use asset and related liability at the commencement of the lease. The lease liability is computed as the present value

of the lease payments. The asset representing the right-of-use of the underlying asset (i.e., the right-of-use asset) is equal to the lease liability. The lessee recognizes interest expense on the lease liability over the life of the lease using the effective-interest method and records depreciation expense on the right-of-use asset (generally on a straight-line basis).

Low-Value Leases. For leases of underlying assets with values of \$5,000 or less, rather than recording a right-of-use asset and lease liability, a lessee may elect to expense the lease payments as incurred.

Short-Term Leases. A short-term lease is a lease that, at the commencement date, has a lease term of 12 months or less. Rather than recording a right-of-use asset and lease liability, lessees may elect to forego recognition of a right-of-use asset and lease liability and expense the lease payments as incurred.

Whether the estimated **residual value is guaranteed or unguaranteed** is of both economic and accounting consequence to the lessee: (1) If it is probable that the expected residual value is equal to or greater than the guaranteed residual value, the lessee should not include the guaranteed residual value in the computation of the lease liability. (2) If it is probable that the expected residual value is less than the guaranteed residual value, the present value of the difference between the expected and guaranteed residual values should be included in computation of the lease liability. (3) The lessee does not include the unguaranteed residual value in the computation of the lease liability.

Bargain Purchase Option. A bargain purchase option increases the present value of the lease payments by the present value of the option price for the lessee. In computing annual depreciation of the right-of-use asset with this type of option, the lessee uses the economic life of the underlying asset.

3 Explain the accounting for leases by lessors.

The lessor determines the lease payments based on the rate of return—the implicit rate—needed to justify leasing the asset, taking into account the credit standing of the lessee, the lease term, and the status of the residual value (guaranteed versus unguaranteed). Lessors use one of two methods to account for lease arrangements: (1) the finance lease method or (2) the operating lease method. Refer to [Illustration 21.18](#) for the tests lessors use to determine whether to use the finance method or the operating method. Leases that fail to meet any of the five classification tests are classified as operating leases.

For a finance lease, the lessor accounts for the lease in a manner similar to the sale of an asset. At lease commencement, the lessor takes the asset off the books and records a receivable equal to the present value of the lease payments. Any dealer or manufacturer selling profit on the transfer of the leased asset (in a sales-type lease) is recognized in income at commencement of the lease. The lessor

recognizes interest revenue on the lease receivable over the life of the lease using the effective-interest method. In an operating lease, a lessee obtains control of only the use of the underlying asset but not ownership of the underlying asset itself. **Under the operating method**, lessors continue to recognize the asset on the statement of financial position and record equal amounts of lease revenue (straight-line basis) in each period. The lessor depreciates the leased asset generally on a straight-line basis.

4 Discuss the accounting and reporting for special features of lease arrangements.

Other Lease Adjustments. The lease liability is the starting point to determine the amount to record for the right-of-use asset. Lessees adjust the measurement of the right-of-use asset as follows: (1) lease prepayments made by the lessee increase the right-of-use asset, (2) lease incentive payments made by the lessor to the lessee reduce the right-of-use asset, and (3) initial direct costs incurred by the lessee increase the right-of-use asset.

Presentation, Disclosure, and Analysis. Presentation and disclosure by lessors and lessees of amounts related to leases vary, depending on whether leases are classified as finance/sales-type or operating. See [Illustrations 21.37](#) and [21.38](#) (presentation in the statement of financial position and income statement) and [Illustrations 21.39, 21.40](#), and [21.41](#) (disclosures in the notes to the financial statements) for summaries of presentation and disclosure requirements.

Expanded recognition of lease assets and liabilities under the new lease accounting rules have the potential to result in significant impacts on analysis, based on information in the financial statements. A number of financial metrics used to measure the profitability and solvency of companies will change, which could create challenges when performing financial analysis.

***5 Describe the lessee's accounting for sale-leaseback transactions.**

In a sale-leaseback arrangement, a company (the seller-lessee) transfers an asset to another company (the buyer-lessor) and then leases that asset back from the buyer-lessor. If the leaseback is classified as a finance/sales-type lease, the sale is not recognized (and is referred to as a failed sale) because the seller-lessee continues to control the asset—the transaction is accounted for as a financing arrangement. If the leaseback is classified as an operating lease, sale-leaseback accounting is appropriate. Under sale-leaseback accounting, gross profit on the sale is recognized and the leaseback is accounted for as a lease with recognition of a right-of-use asset, lease liability, and subsequent amortization and depreciation using the finance lease method. The buyer-lessor continues to recognize the asset on its statement of financial position and recognizes equal amounts of lease

revenue (straight-line basis) in each period. It depreciates the leased asset generally on a straight-line basis.

*6 Apply lessee and lessor accounting to finance and operating leases.

Companies must understand and correctly apply the procedures for classifying and accounting for lease arrangements.

Enhanced Review and Practice

Go online for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Practice Problem

Morgan Bakeries is involved in four different lease situations. Each of these leases is non-cancelable, and in no case does Morgan receive title to the properties leased during or at the end of the lease term. All leases start on January 1, 2022, with the first rental due at the beginning of the year. For each lease, assume that the lessors have alternative use for the assets at the end of the lease unless ownership transfers to the lessee. Additional information is shown in the following table.

	(a) Harmon AG	(b) Arden's Oven plc	(c) Mendota Truck SA	(d) Appleland Computer
Type of property	Cabinets	Oven	Truck	Computer
Yearly rental	€6,000	£12,000	€5,189.31	€2,640.35
Lease term (years)	20	10	3	3
Estimated economic life	30	25	4	5
Purchase option	None	£75,000 at end of 10 years £4,000 at end of 15 years	None	€3,000 at end of 3 years, which approximates fair value

Renewal option	None	5-year renewal at £12,000 per year after 10 years, reasonably certain to be exercised if the purchase option is not	None	1 year at €1,500; no penalty for non-renewal; standard renewal clause
Fair value at commencement of lease	€75,000	£120,000	€20,000	€10,000
Cost of asset to lessor	€60,000	£100,000	€15,000	€10,000
Residual value				
1. Guaranteed	-0-	-0-	€7,000 (the amount expected to be paid)	-0-
2. Unguaranteed	€35,000	-0-	-0-	€3,000
Incremental borrowing rate of lessee	8%	8%	8%	8%
Present value of rental payments				
Using incremental borrowing rate of lessee	€63,621.60	£112,191.84	€20,000	€7,618.51
Using implicit rate of lessor	Not known	Not known	Not known	Known by lessee (6%), €7,481.14
Estimated fair value at end of lease term	€35,000	£80,000 at end of 10 years	Not available	€3,000
		£60,000 at end of 15 years		

Instructions

For each lease arrangement, determine the correct classification of the lease and prepare the journal entries for both the lessee and the lessor at its commencement.

Solution

a. Analysis of the Harmon AG lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** No.
3. **Economic life test:** The lease term is 20 years and the estimated economic life is 30 years. Thus, it **does not** meet the 75% test.
4. **Present value test:** No; the present value of the rental payments of \$63,621.60 is less than 90% of the fair value of the underlying asset as shown below.

Fair value	€75,000	Rental payments	€ 6,000
Rate	× .90	PV of annuity due for 20 years at 8%	× 10.60360
90% of fair value	<u>€67,500</u>	PV of rental payments	<u>€63,621.60</u>

Harmon should account for this lease as an operating lease. Morgan and Harmon make the following January 1, 2022, entries.

Morgan Bakeries (Lessee)		Harmon AG (Lessor)		
Right-of-Use Asset	63,621.60		Cash	6,000
Lease Liability		63,621.60	Unearned Lease Revenue	6,000
Lease Liability	6,000.00			
Cash		6,000.00		

b. Analysis of the Arden's Oven PLC lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** The £75,000 option at the end of 10 years does not appear to be sufficiently lower than the expected fair value of £80,000 to make it reasonably assured that it will be exercised. However, given that the renewal option is reasonably certain to be exercised, the

parties also consider the £4,000 purchase option at the end of 15 years. Since the fair value is expected to be £60,000 at the end of 15 years, the £4,000 option appears to be a bargain and test 2 (bargain purchase option) is therefore met. Note that both the guaranteed and the unguaranteed residual values are assigned zero values because the lessor does not expect to repossess the leased asset.

3. **Economic life test:** Given that the renewal option exists, the lease term is the initial lease period of 10 years plus the 5-year renewal option. Even though the lease term is now considered to be 15 years, the lease term test is still not met because 75% of the economic life of 25 years is 18.75 years.

4. **Present value test:**

Fair value	£120,000	Rental payments	€ 12,000
Rate	× .90	PV of annuity due for 15 years at 8%	× 9.24424
90% of fair value	<u>£108,000</u>	PV of rental payments	<u>£110,930.88</u>

PV of bargain purchase option: = £4,000 × (PVF _{15,8%}) = £4,000 × .31524 = £1,260.96	
PV of rental payments	£110,930.88
PV of bargain purchase option	1,260.96
PV of lease payments	<u>£112,191.84</u>

The present value of the lease payments is greater than 90% of the fair value. Therefore, the lease does meet the 90% test.

Arden should account for the lease as a sales-type lease, because the lease meets both tests 2 and 4. The following entries are made on January 1, 2022.

Morgan Bakeries (Lessee)		Arden's Oven plc (Lessor)		
Right-of-Use Asset (oven)	112,191.84	Lease Receivable	120,000	
Lease Liability	112,191.84	Cost of Goods Sold	100,000	
Lease Liability	12,000.00	Inventory		100,000
Cash	12,000.00	Sales Revenue		120,000
		Cash	12,000	

			Lease Receivable	12,000
--	--	--	---------------------	--------

Morgan would depreciate the right-of-use asset over its economic life of 25 years, given the bargain purchase option. The Lease Receivable amount of £120,000 recorded by Arden is different than the Lease Liability amount of £112,191.84 recorded by Morgan. The reason for this difference is that the implicit rate used by Arden is lower than the incremental borrowing rate of 8% used by Morgan.

c. Analysis of the Mendota Truck SA lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** No.
3. **Economic life test:** The lease term is 3 years and the estimated economic life is 4 years. Thus, it **does** meet the 75% test ($3 \div 4 = 75\%$).
4. **Present value test:**

Fair value	€20,000	Rental payments	€ 5,189.31
Rate	× .90	PV of annuity due for 3 years at 8%	× 2.78326
90% of fair value	€18,000	PV of rental payments	€14,443.19*
*Adjusted for €0.01 due to rounding.			

$$\text{PV of guaranteed residual value} = €7,000 \times (\text{PVF}_{3, 8\%}) = €7,000 \times .79383 = €5,556.81$$

PV of rental payments	€14,443.19
PV of guaranteed residual value	5,556.81
PV of lease payments	€20,000.00

The present value of the lease payments is greater than 90% of the fair value. Therefore, the lease meets the 90% test.

The following entries are made on January 1, 2022.

Morgan Bakeries <i>(Lessee)</i>			Mendota Truck SA <i>(Lessor)</i>		
Right-of-Use Asset (truck)	20,000.00		Lease Receivable	20,000	
Lease Liability		20,000.00	Cost of Goods Sold	15,000	

Lease Liability	5,189.31		Trucks		15,000
Cash		5,189.31	Sales Revenue		20,000
			Cash	5,189.31	
			Lease Receivable		5,189.31

This is a sales-type lease for Mendota. Morgan depreciates the right-of-use asset over 3 years.

d. Analysis of the Appleland Computer lease:

1. **Transfer of title?** No.
2. **Bargain purchase option?** No. The option to purchase at the end of 3 years at approximate fair value is clearly not a bargain.
3. **Economic life test:** The lease term is 3 years, and no bargain renewal period exists, as it is simply a standard renewal clause which is not reasonably certain to be exercised. Therefore, the 75% test is not met ($3 \div 5 = 60\%$).

4. **Present value:**

Fair value	€10,000	Rental payments	€2,640.35
Rate	$\times .90$	PV of annuity-due factor for 3 years at 6%	$\times 2.83339$
90% of fair value	€ 9,000	PV of lease payments using implicit borrowing rate	€7,481.14

The present value of the lease payments using the implicit borrowing rate is €7,481.14. Because the present value of the lease payments is lower than 90% of the fair value, the lease does not meet the present value test.

Thus, this is an operating lease for Appleland. The entries made for the lease on January 1, 2022, are as follows.

Morgan Bakeries <i>(Lessee)</i>		Appleland Computer <i>(Lessor)</i>	
Right-of-Use Asset (truck)	7,481.14	Cash	2,640.35
Lease Liability		7,481.14	Unearned Lease
Lease Liability	2,640.35	Revenue	2,640.35
Cash		2,640.35	

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley's online courseware.

Note: All asterisked Questions, Exercises, and Problems relate to material in the appendices to the chapter.

Questions

- 1.** What are the major lessor groups? What advantage does a captive leasing subsidiary have in a leasing arrangement?
- 2.** Bradley plc is expanding its operations and is in the process of selecting the method of financing this program. After some investigation, the company determines that it could (1) issue bonds and with the proceeds purchase the needed assets, or (2) lease the assets on a long-term basis. Without knowing the comparative costs involved, answer these questions:
 - a. What are the possible advantages of leasing the assets instead of owning them?
 - b. How would the statement of financial position be different if Bradley leases the assets rather than purchasing them?
- 3.** What are the major advantages to a lessor for becoming involved in a leasing arrangement?
- 4.** Morgan Handley and Tricia Holbrook are discussing the new leasing standard. Morgan believes the standard requires that the lessee use the implicit rate of the lessor in computing the present value of its lease liability. Tricia is not sure if Morgan is correct. Explain the discount rate that the lessee should use to compute its lease liability.
- 5.** Paul Singer indicated that “all leases must now be capitalized on the statement of financial position.” Is this statement correct? Explain.
- 6.** Describe the following terms: (a) residual value, (b) guaranteed residual value, and (c) initial direct costs.
- 7.** Explain the following concepts: (a) bargain purchase option and (b) bargain renewal option.
- 8.** What payments are included in the lease liability?
- 9.** Wonda Stone read somewhere that a residual value guarantee is used for computing the present value of lease payments. Is Wonda correct in her interpretation? Explain.

- 10.** Identify the amounts included in the measurement of the right-of-use asset.
- 11.** Harcourt Company enters into a lease agreement with Brunsell Inc. to lease office space for a term of 72 months. Lease payments during the first year are \$5,000 per month. Each year thereafter, the lease payments increase by an amount equivalent to the percentage increase in a price index. For example, if the price index increases 2% in the second year, the monthly payment increases to \$5,100. In the second year, the price index increases by 3%. What are the lease payment amounts used to record this lease in the second year?
- 12.** Describe the accounting procedures involved in applying the finance lease method by a lessee.
- 13.** What is a low-value lease? Describe lessee accounting for low-value leases.
- 14.** What is a short-term lease? Describe lessee accounting for a short-term lease.
- 15.** Describe the effect on the lessee of a “bargain purchase option” in accounting for a finance lease transaction.
- 16.** Identify the lease classifications for lessors and the criteria that must be met for each classification. What is the relevance of revenue recognition criteria for lessor accounting for leases?
- 17.** Explain which of the following would result in the lessor classifying the lease as a finance lease.
- The lease is for a major part of the economic life of the asset.
 - The lease term is 12 months or less.
 - The lease transfers ownership of the asset at the end of the lease.
- 18.** What is the difference between a lease receivable and a net investment in the lease?
- 19.** Explain the accounting involved in applying the operating lease method by a lessor.
- 20.** Explain the difference in lessor income statement presentation for a sales-type versus an operating lease.
- 21.** Walker Company is a manufacturer and lessor of computer equipment. What should be the nature of its lease arrangements with lessees if the company wishes to account for its lease transactions as finance (sales-type) leases?
- 22.** Metheny Group’s lease arrangements qualify as finance (sales-type) leases at the time of entering into the transactions. How should the company recognize sales revenue and cost of goods sold in these situations?

23. Packer plc (the lessor) concludes that its lease meets one of the tests to be classified as a sales-type lease. However, collection of lease payments is not probable. In this case, how should Packer account for any lease payments received?

24. The residual value is the estimated fair value of the leased property at the end of the lease term. Of what significance is (a) an unguaranteed and (b) a guaranteed residual value in the lessee's accounting under the finance lease method?

25. Of what significance is (a) an unguaranteed and (b) a guaranteed residual value in the lessor's accounting for a finance (sales-type) lease transaction?

26. What are "initial direct costs" and how are they accounted for by lessees and lessors?

27. What disclosures should be made by lessees and lessors related to future lease payments?

***28.** What is the nature of a "sale-leaseback" transaction?

***29.** Sanchez SA (seller-lessee) enters into a sale-leaseback to sell its company headquarters for R\$18 million to Harper Bank. The carrying value of the headquarters at the date of sale is R\$14 million. Sanchez then leases back the headquarters in exchange for R\$180,000 per year in rental payments. The leaseback is considered an operating lease. How should Sanchez account for this sale?

Brief Exercises

BE21.1 (LO 2) Samson AG leases a building and land. The lease term is 6 years and the annual fixed payments are €800,000. The lease arrangement gives Samson the right to purchase the building and land for €11,000,000 at the end of the lease. Based on an economic analysis of the lease at the commencement date, Samson is reasonably certain that the fair value of the leased assets at the end of lease term will be much higher than €11,000,000. What are the total lease payments in this lease arrangement?

BE21.2 (LO 2, 4) Fieger Company leases equipment for 8 years with an annual rental of \$2,000 per year or \$16,000 in total. General Leasing (the lessor) agrees to provide Fieger with \$300 for the first 2 years of the lease to defray needed repairs to the equipment. Determine the undiscounted lease payments that Fieger will pay for the first 3 years of the lease agreement.

BE21.3 (LO 2) Sanders Fashion enters into a lease arrangement with Highpoint Leasing for 5 years. Sanders agrees to pay 4% of its net sales as a variable lease payment. Sanders does not pay any fixed payments. Sanders is a highly successful company that has achieved over £1,000,000 in net sales over the last 7 years. Both

Sanders and Highpoint forecast that net sales will be a much greater amount than £1,000,000 in subsequent years. As a result, it is highly certain that Sanders will make payments of at least £40,000 ($\text{£1,000,000} \times .04$) each year. What is the undiscounted lease payment amount Sanders should use to record its right-of-use asset?

BE21.4 (LO 2) Waterworld Company leased equipment from Costner Company, beginning on December 31, 2021. The lease term is 4 years and requires equal rental payments of \$41,933 at the beginning of each year of the lease, starting on the commencement date (December 31, 2021). The equipment has a fair value at the commencement date of the lease of \$150,000, an estimated useful life of 4 years, and no estimated residual value. The appropriate interest rate is 8%. Prepare Waterworld's 2021 and 2022 journal entries, assuming Waterworld depreciates similar equipment it owns on a straight-line basis.

BE21.5 (LO 2) Rick Kleckner NV recorded a right-of-use asset for €300,000 as a result of a lease on December 31, 2021. Kleckner's incremental borrowing rate is 8%, and the implicit rate of the lessor was not known at the commencement of the lease. Kleckner made the first lease payment of €48,337 on December 31, 2021. The lease requires 8 annual payments. The equipment has a useful life of 8 years with no residual value. Prepare Kleckner's December 31, 2022, entries.

BE21.6 (LO 2) Debbink plc leased machinery from Young Ltd. on January 1, 2022. The lease term was for 8 years, with equal annual rental payments of £5,300 at the beginning of each year. In addition, the lease provides an option to purchase the machinery at the end of the lease term for £2,000, which Debbink is reasonably certain it will exercise, as it believes the fair value of the machinery will be at least £6,000. The machinery has a useful life of 10 years and a fair value of £36,000. The implicit rate of the lease is not known to Debbink. Debbink's incremental borrowing rate is 8%. Prepare Debbink's 2022 journal entries.

BE21.7 (LO 3) Cardinal Ltd. is negotiating to lease a piece of equipment to MTBA plc. MTBA requests that the lease be for 9 years. The equipment has a useful life of 10 years. Cardinal wants a guarantee that the residual value of the equipment at the end of the lease is at least £5,000. MTBA agrees to guarantee a residual value of this amount though it expects the residual value of the equipment to be only £2,500 at the end of the lease term. If the fair value of the equipment at lease commencement is £70,000, what would be the amount of the annual rental payments Cardinal demands of MTBA, assuming payments will be made at the beginning of each year and Cardinal wishes to earn a rate of return on the lease of 8%?

BE21.8 (LO 3) Mequon Inc. wishes to lease machinery to Thiensville Company. Thiensville wants the machinery for 4 years, although it has a useful life of 10 years. The machinery has a fair value at the commencement of the lease of \$47,000, and Mequon expects the machinery to have a residual value at the end of

the lease term of \$30,000. However, Thiensville does not guarantee any part of the residual value. Thiensville does expect that the residual value will be \$45,000 instead of \$30,000. What would be the amount of the annual rental payments Mequon demands of Thiensville, assuming payments will be made at the end of each year and Mequon wishes to earn a rate of return on the lease of 6%?

BE21.9 (LO 3) Assume that **IBM** (USA) leased equipment that was carried at a cost of £120,000 to Swander plc. The term of the lease is 6 years beginning December 31, 2021, with equal rental payments of £30,044 beginning December 31, 2021. The fair value of the equipment at commencement of the lease is £150,001. The equipment has a useful life of 6 years with no residual value. The lease has an implicit interest rate of 8%, no bargain purchase option, and no transfer of title. Collectibility of lease payments for IBM is probable. Prepare IBM's December 31, 2021, journal entries at commencement of the lease.

BE21.10 (LO 3) Use the information for **IBM** (USA) from BE21.9. Assume the sales-type lease was recorded at a present value of £150,001. Prepare IBM's December 31, 2022, entry to record the lease transaction with Swander plc.

BE21.11 (LO 3) Geiberger AG manufactures drones. On December 31, 2021, it leased to Althaus SA a drone that had cost €120,000 to manufacture. The lease agreement covers the 5-year useful life of the drone and requires 5 equal annual rentals of €40,800 payable each December 31, beginning December 31, 2021. An interest rate of 8% is implicit in the lease agreement. Collectibility of the rentals is probable. Prepare Geiberger's December 31, 2021, journal entries.

BE21.12 (LO 3) Use the information for Geiberger AG from BE21.11, except assume the collectibility of the rentals is not probable. Prepare any journal entries for Geiberger on December 31, 2021.

BE21.13 (LO 3) Kubby NV specializes in leasing large storage units to other businesses. Kubby entered a contract to lease a storage unit to Riskey Ltd. for 4 years when that particular storage unit had a remaining useful life of 5 years. The fair value of the unit was €10,000 at the commencement of the lease on January 1, 2022. The present value of the 5 equal rental payments of €2,507 at the start of each year, plus the present value of a guaranteed residual value of €1,000, equals the fair value of €10,000. Kubby's implicit rate of return on the lease of 6%. The following is a correct, complete amortization schedule created by Kubby.

Date	Lease Payment	Interest (6%) on Outstanding Lease Receivable	Reduction of Lease Receivable	Balance of Lease Receivable
1/1/22				€10,000
1/1/22	€ 2,507		€ 2,507	7,493

1/1/23	2,507	€ 450	2,057	5,436
1/1/24	2,507	326	2,181	3,255
1/1/25	2,507	195	2,312	943
12/31/25	1,000	57	943	0
	€11,028	€1,028	€10,000	

Given the above schedule, make the appropriate entries at December 31, 2025, for Kubby to record the accrual of interest and the return of the storage unit to Kubby (assuming the unit is returned on December 31, 2025, at the expected and guaranteed residual value of €1,000).

BE21.14 (LO 2) Kingston plc leases equipment from Falls Ltd. on January 1, 2022. The lease agreement does not transfer ownership or contain a bargain purchase option, and it is not a specialized asset. It covers 3 years of the equipment's 8-year useful life, and the present value of the lease payments is less than 90% of the fair value of the asset leased. Prepare Kingston's journal entries on January 1, 2022, and December 31, 2022. Assume the annual lease payment is £35,000 at the beginning of each year, and Kingston's incremental borrowing rate is 6%, which is the same as the lessor's implicit rate.

BE21.15 (LO 3) Use the information for Kingston plc from BE21.14. Prepare all the necessary journal entries for Falls Ltd. (the lessor) for 2022, assuming the equipment is carried at a cost of £200,000.

BE21.16 (LO 2) Rodgers Corporation agrees on January 1, 2022, to lease equipment from Packers, Inc. for 3 years. The lease calls for annual lease payments of \$12,000 at the beginning of each year. The lease does not transfer ownership or contain a bargain purchase option, and it is not a specialized asset. In addition, the economic life of the equipment is 10 years, and the present value of the lease payments is less than 90% of the fair value of the equipment. Prepare Rodgers' journal entries on January 1, 2022 (commencement of the operating lease), and on December 31, 2022. Assume the implicit rate used by the lessor is 8%, which is known to Rodgers.

BE21.17 (LO 3) Use the information for Rodgers Corporation and Packers, Inc. from BE21.16. Assume that for Packers, Inc., the lessor, the collectibility of the lease payments is probable, and the fair value and cost of the equipment are \$60,000. Prepare Packers' 2022 journal entries, assuming the company uses straight-line depreciation and no residual value.

BE21.18 (LO 2) On December 31, 2021, Escapee plc leased machinery from Terminator Group for an agreed-upon lease term of 3 years. Escapee agreed to make annual lease payments of £17,000, beginning on December 31, 2021. The expected residual value of the machinery at the end of the lease term is £9,000, though Escapee does not guarantee any residual value to Terminator. What

amount will Escapee record as its lease liability on December 31, 2021, if its incremental borrowing rate is 6% and the implicit rate of the lease is unknown?

BE21.19 (LO 2) Use the information for Escapee plc from BE21.18. Assume the same facts, except Escapee guarantees a residual value of £9,000 at the end of the lease term, which equals the expected residual value of the machinery. (a) Does this change your answer from BE21.17? (b) Does your answer change if the expected residual value at the end of the lease term is £5,000 and Escapee guarantees a residual of £9,000?

BE21.20 (LO 2) Indiana Jones NV enters into a 6-year lease of equipment on December 31, 2021, which requires 6 annual payments of €40,000 each, beginning December 31, 2021. In addition, Indiana Jones guarantees the lessor a residual value of €20,000 at the end of the lease. However, Indiana Jones believes it is probable that the expected residual value at the end of the lease term will be €10,000. The equipment has a useful life of 6 years. Prepare Indiana Jones' December 31, 2021, journal entries, assuming the implicit rate of the lease is 6% and this is known to Indiana Jones.

BE21.21 (LO 3) Use the information for Indiana Jones NV from BE21.20. Assume that for Lost Ark AG, the lessor, collectibility of lease payments is probable and the carrying amount of the equipment is €180,000. Prepare Lost Ark's 2021 and 2022 journal entries.

BE21.22 (LO 4) Forrest, Inc. has entered an agreement to lease an old warehouse with a useful life of 5 years and a fair value of \$20,000 from United Corporation. The agreement stipulates the following.

- Rental payments of \$4,638 are to be made at the start of each year of the 5-year lease. No residual value is expected at the end of the lease.
- Forrest must reimburse United each year for any real estate taxes incurred for the year. Last year, the cost of real estate taxes was \$700, though these costs vary from year to year.
- Forrest must make a payment of \$500 with the rental payment each period to cover the insurance United has on the warehouse.
- Forrest paid legal fees of \$1,000 in executing the lease.

Assuming Forrest's incremental borrowing rate is 8% and the rate implicit in the lease is unknown, prepare the journal entry to record the initial lease liability and right-of-use asset for Forrest.

BE21.23 (LO 4) Bucky Corporation entered into a lease agreement to lease equipment from Badger, Inc. on January 1, 2022. The lease calls for annual lease payments of \$30,000, beginning on January 1, for each of the 3 years of the lease. In addition, Badger will pay Bucky \$5,000 as a cash incentive for entering the

lease by January 1, 2022. In relation to the lease agreement, Bucky incurred the following costs.

Salaries of employees involved in the investigation of the lease	\$2,000
Lease document preparation costs incurred after execution of the lease	500

Bucky's incremental borrowing rate is 8%. If the lease liability is \$83,498, what amount will Bucky record as the value of the right-of-use asset on January 1, 2022, at commencement of the lease?

BE21.24 (LO 4) Homestead AG entered into a lease to lease equipment from Highlander SA on January 1, 2022. The lease calls for annual lease payments of €10,000, beginning on December 31, for each of the 5 years of the lease. In addition, Highlander will pay Homestead €2,000 as a cash incentive for entering the lease by December 31. In relation to the lease agreement, Homestead incurred the following costs.

Commissions for selling agents	€ 900
Internal engineering costs	500
Legal fees resulting from the execution of the lease	3,000

Homestead's incremental borrowing rate is 6%. If the value of the lease liability is €44,651, what amount will Homestead record as the value of the right-of-use asset on January 1, 2022, at commencement of the operating lease?

BE21.25 (LO 4) Brent SA owns equipment that cost €80,000 and has a useful life of 8 years with no residual value. On January 1, 2022, Brent leases the equipment to Havaci ASA for 1 year for one rental payment of €15,000 on January 1. Assuming Havaci (lessee) elects to use the short-term lease exception, prepare Havaci's 2022 journal entries.

***BE21.26 (LO 5)** On January 1, 2022, Irwin Animation sold a truck to Peete Finance for €35,000 and immediately leased it back. The truck was carried on Irwin's books at €28,000. The term of the lease is 3 years, there is no bargain purchase option, and title does not transfer to Irwin at lease-end. The lease requires 3 equal rental payments of €8,696 at the end of each year (first payment on January 1, 2023). The appropriate rate of interest is 6%, the truck has a useful life of 5 years, and the residual value at the end of the lease term is expected to be €14,000, none of which is guaranteed. Prepare Irwin's 2022 journal entries.

***BE21.27 (LO 5)** Assume the same facts as BE21.26, except the lease term is now 5 years and the 5 annual rental payments are €8,309, with no expected residual value at the end of the lease term. Prepare Irwin's 2022 journal entries assuming these new facts.

Exercises

E21.1 (LO 2) (Lessee Entries, No Residual Value) DU Journeys enters into an agreement with Traveler plc to lease a car on December 31, 2021. The following information relates to this agreement.

1. The term of the non-cancelable lease is 3 years with no renewal or bargain purchase option. The remaining economic life of the car is 3 years, and it is expected to have no residual value at the end of the lease term.
2. The fair value of the car was £15,000 at commencement of the lease.
3. Annual payments are made on December 31 at the end of each year of the lease, beginning December 31, 2022. The first payment is £5,552.82, with each payment increasing by a constant rate of 5% from the previous payment (i.e., the second payment will be £5,830.46, and the third and final payment will be £6,121.98).
4. DU Journeys' incremental borrowing rate is 8%. The rate implicit in the lease is unknown.
5. DU Journeys uses straight-line depreciation for all similar cars.

Instructions

- a. Prepare DU Journeys' journal entries for 2021, 2022, and 2023.
- b. Assume that, instead of a constant rate of increase, the annual lease payments will increase according to a price index. At its current level, the price index stipulates that the first rental payment should be £5,820. What would be the impact on the journal entries made by DU Journeys at commencement of the lease, as well as for subsequent years?

E21.2 (LO 2) (Lessee Entries, Lease with Unguaranteed Residual Value) On December 31, 2021, Burke Corporation signed a 5-year, non-cancelable lease for a machine. The terms of the lease called for Burke to make annual payments of \$8,668 at the beginning of each year, starting December 31, 2021. The machine has an estimated useful life of 6 years and a \$5,000 unguaranteed residual value. The machine reverts back to the lessor at the end of the lease term. Burke uses the straight-line method of depreciation for all of its plant assets. Burke's incremental borrowing rate is 5%, and the lessor's implicit rate is unknown.

Instructions

- a. Compute the present value of the lease payments.
- b. Prepare all necessary journal entries for Burke for this lease through December 31, 2022.

E21.3 (LO 2) (Lessee Computations and Entries, Lease with Guaranteed Residual Value) Delaney AG leases an automobile with a fair value of €10,000 from Simon Motors, on the following terms.

1. Non-cancelable term of 50 months.
2. Rental of €200 per month (at the beginning of each month). (The present value at 0.5% per month is €8,873.)
3. Delaney guarantees a residual value of €1,180 (the present value at 0.5% per month is €920). Delaney expects the probable residual value to be €1,180 at the end of the lease term.
4. Estimated economic life of the automobile is 60 months.
5. Delaney's incremental borrowing rate is 6% a year (0.5% a month). Simon's implicit rate is unknown.

Instructions

- a. What is the present value of the lease payments to determine the lease liability?
- b. Record the lease on Delaney's books at the date of commencement.
- c. Record the first month's lease payment (at commencement of the lease).
- d. Record the second month's lease payment.
- e. Record the first month's depreciation on Delaney's books (assume straight-line).
- f. Suppose that instead of €1,180, Delaney expects the residual value to be only €500 (the guaranteed amount is still €1,180). How does the calculation of the present value of the lease payments change from part (b)?

E21.4 (LO 2, 4) (Lessee Entries, Unguaranteed Residual Value) Assume that on December 31, 2021, Stora Enso (FIN) signs a 10-year, non-cancelable lease agreement to lease a storage building from Sheffield Storage. The following information pertains to this lease agreement.

1. The agreement requires equal rental payments of €71,830 beginning on December 31, 2021.
2. The fair value of the building on December 31, 2021, is €525,176.
3. The building has an estimated economic life of 12 years, a guaranteed residual value of €10,000, and an expected residual value of €7,000. Stora Enso depreciates similar buildings using the straight-line method.

4. The lease is non-renewable. At the termination of the lease, the building reverts to the lessor.
5. Stora Enso's incremental borrowing rate is 8% per year. The lessor's implicit rate is not known by Stora Enso.

Instructions

- a. Prepare the journal entries on the lessee's books to reflect the signing of the lease agreement and to record the payments and expenses related to this lease for the years 2021, 2022, and 2023. Stora Enso's fiscal year-end is December 31.
- b. Use the same facts as above, except that Stora Enso incurred legal fees of €5,000 resulting from the execution of the lease, and received a lease incentive of €1,000 from Sheffield to enter the lease. How would the initial measurement of the lease liability and right-of-use asset be affected under this situation?
- c. Suppose that in addition to the €71,830 annual rental payments, Stora Enso is also required to pay €5,000 annually for insurance costs on the building directly to the lessor, Sheffield Storage. How would this executory cost affect the initial measurement of the lease liability and right-of-use asset?
- d. Return to the original facts in the problem. Now suppose that, at the end of the lease term, Stora Enso has taken good care of the asset and Sheffield agrees that the fair value of the asset is actually €10,000. Record the entry for Stora Enso at the end of the lease to return the storage building to Sheffield (assuming the accrual of interest on the lease liability has already been made).

E21.5 (LO 3) (Computation of Rental, Journal Entries for Lessor)

Morgan Leasing Group signs an agreement on January 1, 2022, to lease equipment to Cole plc. The following information relates to this agreement.

1. The term of the non-cancelable lease is 6 years with no renewal option. The equipment has an estimated economic life of 6 years.
2. The cost of the asset to the lessor is £245,000. The fair value of the asset at January 1, 2022, is £245,000.
3. The asset will revert to the lessor at the end of the lease term, at which time the asset is expected to have a residual value of £24,335, none of which is guaranteed.
4. The agreement requires equal annual rental payments, beginning on January 1, 2022.

5. Collectibility of the lease payments by Morgan is probable.

Instructions

(Round all numbers to the nearest pound.)

- a. Assuming the lessor desires an 8% rate of return on its investment, calculate the amount of the annual rental payment required. (Round to the nearest pound.)
- b. Prepare an amortization schedule that is suitable for the lessor for the lease term.
- c. Prepare all of the journal entries for the lessor for 2022 and 2023 to record the lease agreement, the receipt of lease payments, and the recognition of revenue. Assume the lessor's annual accounting period ends on December 31, and it does not use reversing entries.

E21.6 (LO 3) (Lessor Entries, Sales-Type Lease with Option to Purchase)
Castle Leasing Company signs a lease agreement on January 1, 2022, to lease electronic equipment to Jan Way Company. The term of the non-cancelable lease is 2 years, and payments are required at the end of each year. The following information relates to this agreement.

1. Jan Way has the option to purchase the equipment for \$16,000 upon termination of the lease. It is not reasonably certain that Jan Way will exercise this option.
2. The equipment has a cost of \$120,000 and fair value of \$160,000 to Castle Leasing. The useful economic life is 2 years, with a residual value of \$16,000.
3. Castle Leasing desires to earn a return of 5% on its investment.
4. Collectibility of the payments by Castle Leasing is probable.

Instructions

- a. Prepare the journal entries on the books of Castle Leasing to reflect the payments received under the lease and to recognize income for the years 2022 and 2023.
- b. Assuming that Jan Way exercises its option to purchase the equipment on December 31, 2023, prepare the journal entry to record the sale on Castle Leasing's books.

E21.7 (LO 2, 3) (Type of Lease, Amortization Schedule) Macinski Leasing leases a new machine to Sharrer SA. The machine has a cost of €70,000 and fair value of €95,000. Under the 3-year, non-cancelable contract, Sharrer will receive

title to the machine at the end of the lease. The machine has a 3-year useful life and no residual value. The lease was signed on January 1, 2022. Macinski expects to earn an 8% return on its investment, and this implicit rate is known by Sharrer. The annual rentals are payable on each December 31, beginning December 31, 2022.

Instructions

- a. Discuss the nature of the lease arrangement and the accounting method that each party to the lease should apply.
- b. Prepare an amortization schedule that would be suitable for both the lessor and the lessee, and which covers all the years involved.
- c. Prepare the journal entry at commencement of the lease for Macinski.
- d. Prepare the journal entry at commencement of the lease for Sharrer.
- e. Prepare the journal entry at commencement of the lease for Sharrer, assuming that (1) Sharrer does not know Macinski's implicit rate (Sharrer's incremental borrowing rate is 9%), and that (2) Sharrer incurs initial direct costs of €10,000.

E21.8 (LO 3) (Lessor Entries, Sales-Type Lease) Crosley Company, a machinery dealer, leased a machine to Dexter Corporation on January 1, 2022. The lease is for an 8-year period and requires equal annual payments of \$35,004 at the beginning of each year. The first payment is received on January 1, 2022. Crosley had purchased the machine during 2021 for \$160,000. Collectibility of lease payments by Crosley is probable. Crosley set the annual rental to ensure a 6% rate of return. The machine has an economic life of 10 years with no residual value and reverts to Crosley at the termination of the lease.

Instructions

- a. Compute the amount of the lease receivable.
- b. Prepare all necessary journal entries for Crosley for 2022.
- c. Suppose the collectibility of the lease payments was not probable for Crosley. Prepare all necessary journal entries for the company in 2022.
- d. Suppose at the end of the lease term, Crosley receives the asset and determines that it actually has a fair value of \$1,000 instead of the anticipated residual value of \$0. Record the entry to recognize the receipt of the asset for Crosley at the end of the lease term.

E21.9 (LO 2, 4) (Lessee Entries, Initial Direct Costs) Use the information for Crosley Company in E21.8. Assume that Dexter Corporation does not know the

rate implicit in the lease used by Crosley, and Dexter's incremental borrowing rate is 8%. In addition, assume that Dexter incurs initial direct costs of \$15,000.

Instructions

- a. Compute the amount of the lease liability and right-of-use asset for Dexter.
- b. Prepare all necessary journal entries for Dexter for 2022.

E21.10 (LO 2) (Lessee Entries with Bargain Purchase Option) The following facts pertain to a non-cancelable lease agreement between Mooney Leasing and Choi Group, a lessee (amounts in thousands).

Commencement date	May 1, 2022
Annual lease payment due at the beginning of each year, beginning with May 1, 2022	¥20,471.94
Bargain purchase option price at end of lease term	¥4,000.00
Lease term	5 years
Economic life of leased equipment	10 years
Lessor's cost	¥65,000.00
Fair value of asset at May 1, 2022	¥91,000.00
Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%

The collectibility of the lease payments by Mooney is probable.

Instructions

(Round all numbers to the nearest yen.)

- a. Prepare a lease amortization schedule for Choi for the 5-year lease term.
- b. Prepare the journal entries on the lessee's books to reflect the signing of the lease agreement and to record the payments and expenses related to this lease for the years 2022 and 2023. Choi's annual accounting period ends on December 31. Reversing entries are used by Choi.

E21.11 (LO 3) (Lessor Entries with Bargain Purchase Option) A lease agreement between Mooney Leasing and Choi Group is described in E21.10.

Instructions

Refer to the data in E21.10 and do the following for the lessor. (Round all numbers to the nearest yen).

- a. Discuss the nature of this lease for Mooney and compute the amount of the lease receivable at commencement of the lease.
- b. Prepare a lease amortization schedule for Mooney for the 5-year lease term.
- c. Prepare the journal entries to reflect the signing of the lease agreement and to record the receipts and income related to this lease for the years 2022 and 2023. The lessor's accounting period ends on December 31. Reversing entries are not used by Mooney.
- d. Suppose the collectibility of the lease payments was not probable for Mooney. Prepare all necessary journal entries for the company in 2022.

E21.12 (LO 2, 3, 4) (Lessee-Lessor Entries, Sales-Type Lease with Bargain Purchase Option) On January 1, 2022, Bensen Company leased equipment to Flynn Corporation. The following information pertains to this lease.

1. The term of the non-cancelable lease is 6 years. At the end of the lease term, Flynn has the option to purchase the equipment for \$1,000, while the expected residual value at the end of the lease is \$5,000.
2. Equal rental payments are due on January 1 of each year, beginning in 2022.
3. The fair value of the equipment on January 1, 2022, is \$150,000, and its cost is \$120,000.
4. The equipment has an economic life of 8 years. Flynn depreciates all of its equipment on a straight-line basis.
5. Bensen set the annual rental to ensure a 5% rate of return. Flynn's incremental borrowing rate is 6%, and the implicit rate of the lessor is unknown.
6. Collectibility of lease payments by the lessor is probable.

Instructions

(Both the lessor and the lessee's accounting periods end on December 31.)

- a. Discuss the nature of this lease for Bensen.
- b. Calculate the amount of the annual rental payment.
- c. Prepare all the necessary journal entries for Bensen for 2022.
- d. Suppose the collectibility of the lease payments was not probable for Bensen. Prepare all necessary journal entries for the company in 2022.
- e. Prepare all the necessary journal entries for Flynn for 2022.
- f. Discuss the effect on the journal entry for Flynn at lease commencement, assuming initial direct costs of \$2,000 are incurred by Flynn to negotiate the

lease.

E21.13 (LO 2, 3) (Lessee-Lessor Entries, Sales-Type Lease; Guaranteed Residual Value) Phelps plc leases a building to Walsh Ltd. on January 1, 2022. The following facts pertain to the lease agreement.

1. The lease term is 5 years, with equal annual rental payments of £4,703 at the beginning of each year.
2. Ownership does not transfer at the end of the lease term, there is no bargain purchase option, and the asset is not of a specialized nature.
3. The building has a fair value of £23,000, a book value to Phelps of £16,000, and a useful life of 6 years.
4. At the end of the lease term, Phelps and Walsh expect there to be an unguaranteed residual value of £4,000.
5. Phelps wants to earn a return of 8% on the lease, and collectibility of the payments is probable. This rate is known by Walsh.

Instructions

- a. How would Phelps (lessor) classify this lease? How would Phelps initially measure the lease receivable, and how would Walsh initially measure the lease liability and right-of-use asset?
- b. Using the original facts of the lease, show the journal entries to be made by both Phelps and Walsh in 2022.
- c. Suppose the entire expected residual value of £4,000 is guaranteed by Walsh. How will this change your answer to part (a)?
- d. Assume the same facts as in part (c), except the expected residual value is £3,000. Does your answer change?

E21.14 (LO 2) (Lessee Entries) Use the information for the Phelps/Walsh lease in E21.13. In this instance, however, Walsh is unaware of the implicit rate used in the lease by Phelps and has an incremental borrowing rate of 9%.

Instructions

How would your answer to E21.13(a) change?

E21.15 (LO 2) (Amortization Schedule and Journal Entries for Lessee) Laura Leasing SA signs an agreement on January 1, 2022, to lease equipment to Plote AG. The following information relates to this agreement.

1. The term of the non-cancelable lease is 3 years with no renewal option. The equipment has an estimated economic life of 5 years.
2. The fair value of the asset at January 1, 2022, is €80,000.
3. The asset will revert to the lessor at the end of the lease term, at which time the asset is expected to have a residual value of €7,000, none of which is guaranteed.
4. The agreement requires equal annual rental payments of €25,562.96 to the lessor, beginning on January 1, 2022.
5. The lessee's incremental borrowing rate is 5%. The lessor's implicit rate is 4% and is unknown to the lessee.
6. Plot uses the straight-line depreciation method for all equipment.

Instructions

(Round all numbers to the nearest cent.)

- a. Prepare an amortization schedule that would be suitable for the lessee for the lease term.
- b. Prepare all of the journal entries for the lessee for 2022 and 2023 to record the lease agreement, the lease payments, and all expenses related to this lease. Assume the lessee's annual accounting period ends on December 31, and the lessee prepares reversing entries.

E21.16 (LO 2, 4) (Lessee Accounting, Initial Direct Costs) Rauch AG leases a piece of equipment to Donahue SA on January 1, 2022. The lease agreement called for annual rental payments of €4,892 at the beginning of each year of the 4-year lease. The equipment has an economic useful life of 6 years, a fair value of €25,000, and a book value of €20,000. Both parties expect a residual value of €8,250 at the end of the lease term, though this amount is not guaranteed. Rauch set the lease payments with the intent of earning a 5% return, and Donahue is aware of this rate. There is no bargain purchase option, ownership of the lease does not transfer at the end of the lease term, and the asset is not of a specialized nature.

Instructions

- a. Prepare the lease amortization schedule(s) for Donahue for all 4 years of the lease.
- b. Prepare the journal entries for Donahue for 2022 and 2023.
- c. Suppose Donahue incurs initial direct costs of €750 related to the lease. Prepare the journal entries for 2022.

- d. Explain how a fully guaranteed residual value by Donahue would change the accounting for the company. The expected residual value is €8,250.
- e. Explain how a bargain renewal option for one extra year at the end of the lease term would change the accounting of the lease for Donahue.

E21.17 (LO 3, 4) (Lessor Accounting) Use the information for Rauch AG and Donahue SA from E21.16.

Instructions

- a. Explain how Rauch arrived at the amount of the rental payments used in the lease agreement, and show calculations.
- b. Prepare the entries for Rauch for 2022.
- c. Suppose that instead of €8,250, Rauch expects the residual value at the end of the lease to be €5,000, but Donahue agrees to guarantee a residual value of €8,250. All other facts being equal, how would Rauch change the amount of the annual rental payments, if at all?
- d. Explain how a fully guaranteed residual value by Donahue would change the accounting for Rauch, the lessor.
- e. Explain how a bargain renewal option for one extra year at the end of the lease term would change the accounting of the lease for Rauch, the lessor.

***E21.18 (LO 5) (Sale-Leaseback)** Assume that on January 1, 2022, Humphrey's Restaurants NV sells a computer system to Liquidity Finance for €680,000 and immediately leases back the computer system. The relevant information is as follows.

1. The computer was carried on Humphrey's books at a value of €600,000.
2. The term of the non-cancelable lease is 3 years; title will not transfer to Humphrey's, and the expected residual value at the end of the lease is €450,000, all of which is unguaranteed.
3. The lease agreement requires equal rental payments of €115,970 at the beginning of each year.
4. The incremental borrowing rate for Humphrey's is 8%. Humphrey's is aware that Liquidity Finance set the annual rental to ensure a rate of return of 8%.
5. The computer has a fair value of €680,000 on January 1, 2022, and an estimated economic life of 10 years.

Instructions

Prepare the journal entries for both the lessee and the lessor for 2022 to reflect the sale and leaseback agreement.

***E21.19 (LO 5) (Lessee-Lessor, Sale-Leaseback)** Respond to the requirements in each situation.

Instructions

- a. On January 1, 2022, Zarle Inc. sold computer equipment to Daniell Co. The sales price of the equipment was \$520,000 and its carrying amount is \$400,000. Record any journal entries necessary for Zarle from the sale of the computer equipment in 2022.
- b. Use the information from part (a). Assume that on the same day the sale occurred, Zarle enters into an agreement to lease the equipment from Daniell for 10 years with annual lease payments of \$67,342.42 at the end of each year, beginning on December 31, 2022. If Zarle has an incremental borrowing rate of 5% and the equipment has an economic useful life of 10 years, record any journal entries necessary for Zarle from the sale and leaseback of computer equipment in 2022.
- c. Use the information from part (b). Now, instead of 10 years, the lease term is only 3 years with annual lease payments of \$67,342.42 at the beginning of each year. Record any journal entries necessary for Zarle from the sale and leaseback of computer equipment in 2022.

Problems

P21.1 (LO 2, 4) (Lessee Entries) The following facts pertain to a non-cancelable lease agreement between Faldo Leasing and Vance plc, a lessee.

Commencement date	January 1, 2022
Annual lease payment due at the beginning of each year, beginning with January 1, 2022	£113,864
Residual value of equipment at end of lease term, guaranteed by the lessee	£50,000
Expected residual value of equipment at end of lease term	£45,000
Lease term	6 years
Economic life of leased equipment	6 years
Fair value of asset at January 1, 2022	£600,000
Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%

The asset will revert to the lessor at the end of the lease term. The lessee uses the straight-line depreciation for all leased equipment.

Instructions

- a. Prepare an amortization schedule that would be suitable for the lessee for the lease term.
- b. Prepare all of the journal entries for the lessee for 2022 and 2023 to record the lease agreement, the lease payments, and all expenses related to this lease. Assume the lessee's annual accounting period ends on December 31, and the lessee prepares reversing entries.
- c. Suppose Vance received a lease incentive of £5,000 from Faldo Leasing to enter the lease. How would the initial measurement of the lease liability and right-of-use asset be affected? What if Vance prepaid rent of £5,000 to Faldo?

P21.2 (LO 2, 4) (Lessee Entries and Statement of Financial Position

Presentation) On January 1, 2022, Cage Company contracts to lease equipment for 5 years, agreeing to make a payment of \$120,987 at the beginning of each year, starting January 1, 2022. The leased equipment is to be capitalized at \$550,000. The asset is to be amortized on a double-declining-balance basis, and the obligation is to be reduced on an effective-interest basis. Cage's incremental borrowing rate is 6%, and the company knows that the implicit rate in the lease is 5%. Title to the equipment transfers to Cage at the end of the lease. The asset has an estimated useful life of 5 years and no residual value.

Instructions

- a. Explain the probable relationship of the \$550,000 amount to the lease arrangement.
- b. Prepare the journal entry or entries that Cage should record on January 1, 2022.
- c. Prepare the journal entries to record depreciation of the leased asset and interest expense for the year 2022.
- d. Prepare the journal entry to record the lease payment of January 1, 2023, assuming reversing entries are not made.
- e. What amounts will appear on the lessee's December 31, 2022, statement of financial position relative to the lease contract?
- f. How would the value of the lease liability in (b) change if Cage also agreed to pay the fixed annual insurance on the equipment of \$2,000 at the same time as the rental payments?

P21.3 (LO 2) Groupwork (Lessee Entries and Statement of Financial

Position Presentation) Ludwick Steel SA, as lessee, signed a lease agreement for equipment for 5 years, beginning December 31, 2022. Annual rental payments of €40,000 are to be made at the beginning of each lease year (December 31). The interest rate used by the lessor in setting the payment schedule is 6%; Ludwick's incremental borrowing rate is 8%. Ludwick is unaware of the rate being used by the lessor. At the end of the lease, Ludwick has the option to buy the equipment for €5,000, considerably below its estimated fair value at that time. The equipment has an estimated useful life of 7 years, with no residual value. Ludwick uses the straight-line method of depreciation on similar owned equipment.

Instructions

- a. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2022.
- b. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2023. (Prepare the lease amortization schedule for all five payments.)
- c. Prepare the journal entry or entries, with explanations, that Ludwick should record on December 31, 2024.
- d. What amounts would appear on Ludwick's December 31, 2024, statement of financial position relative to the lease arrangement?

P21.4 (LO 2) (Lessee Entries, Lease with Monthly Payments) Shapiro Inc. began operations in 2021 as a computer software service firm, with an accounting fiscal year ending August 31. Shapiro's primary product is a sophisticated online inventory-control system; its customers pay a fixed fee plus a usage charge for using the system.

Shapiro has leased a large, Alpha-3 computer system from the manufacturer. The lease calls for a monthly rental of \$40,000 for the 144 months (12 years) of the lease term. The estimated useful life of the computer is 15 years.

All rentals are payable on the first day of the month beginning August 1, 2022, the date the computer was installed and the lease agreement was signed. The lease is non-cancelable for its 12-year term, and it is secured only by the manufacturer's chattel lien on the Alpha-3 system.

This leased asset will be depreciated by the straight-line method. Borrowed funds for this type of transaction would cost Shapiro 6% per year (0.5% per month). Following is a schedule of the present value of an annuity due for selected periods discounted at 0.5% per period when payments are made at the beginning of each period.

Periods	Present Value of an Annuity Due
---------	---------------------------------

(months)	Discounted at 0.5% per Period
1	1.000
2	1.995
3	2.985
143	102.497
144	102.987

Instructions

Prepare all entries Shapiro should make in its accounting records during August 2022 relating to this lease. Give full explanations and show supporting computations for each entry. Remember, August 31, 2022, is the end of Shapiro's fiscal accounting period, and it will be preparing financial statements on that date. Do not prepare closing entries.

P21.5 (LO 2) (Basic Lessee Accounting with Difficult PV Calculation) In 2021, Grishell Trucking negotiated and closed a long-term lease contract for newly constructed truck terminals and freight storage facilities. The buildings were erected to the company's specifications on land owned by the company. On January 1, 2022, Grishell Trucking took possession of the lease properties.

Although the terminals have a composite useful life of 40 years, the non-cancelable lease runs for 20 years from January 1, 2022, with a bargain purchase option available upon expiration of the lease.

The 20-year lease is effective for the period January 1, 2022, through December 31, 2041. Rental payments of \$800,000 are payable to the lessor on January 1 of each of the first 10 years of the lease term. Advance rental payments of \$320,000 are due on January 1 for each of the last 10 years of the lease. The company has an option to purchase all of these leased facilities for \$1 on December 31, 2041. The lease was negotiated to assure the lessor a 6% rate of return.

Instructions

- Prepare a schedule to compute for Grishell Trucking the present value of the terminal facilities and related obligation at January 1, 2022.
- Assuming that the present value of terminal facilities and related obligation at January 1, 2022, was \$7,635,410, prepare journal entries for Grishell Trucking to record the:
 - Cash payment to the lessor on January 1, 2024.
 - Depreciation of the cost of the leased properties for 2024, using the straight-line method and assuming a zero residual value.
 - Accrual of interest expense at December 31, 2024.

Selected present value factors are as follows.

Periods	For an Ordinary Annuity of \$1 at 6%	For \$1 at 6%
1	.943396	.943396
2	1.833393	.889996
8	6.209794	.627412
9	6.801692	.591898
10	7.360087	.558395
19	11.158117	.330513
20	11.469921	.311805

P21.6 (LO 2, 3) (Lessee-Lessor Entries, Lease with a Guaranteed Residual Value) Glaus Leasing AG agrees to lease equipment to Jensen Furniture on January 1, 2022. The following information relates to the lease agreement.

1. The term of the lease is 7 years with no renewal option, and the machinery has an estimated economic life of 9 years.
2. The cost of the machinery is €525,000, and the fair value of the asset on January 1, 2022, is €700,000.
3. At the end of the lease term, the asset reverts to the lessor and has a guaranteed residual value of €50,000. Jensen estimates that the expected residual value at the end of the lease term will be €50,000. Jensen depreciates all of its leased equipment on a straight-line basis.
4. The lease agreement requires equal annual rental payments, beginning on January 1, 2022.
5. The collectibility of the lease payments is probable.
6. Glaus desires a 5% rate of return on its investments. Jensen's incremental borrowing rate is 6%, and the lessor's implicit rate is unknown.

Instructions

(Assume the accounting period ends on December 31.)

- a. Discuss the nature of this lease for the lessor.
- b. Calculate the amount of the annual rental payment required.
- c. Compute the value of the lease liability to the lessee.

- d. Prepare the journal entries Jensen would make in 2022 and 2023 related to the lease arrangement.
- e. Prepare the journal entries Glaus would make in 2022 and 2023 related to the lease arrangement.
- f. Suppose Jensen expects the residual value at the end of the lease term to be €40,000 but still guarantees a residual of €50,000. Compute the value of the lease liability at lease commencement.

P21.7 (LO 3) (Lessor Computations and Entries, Sales-Type Lease with Guaranteed Residual Value) Amirante SA manufactures an X-ray machine with an estimated life of 12 years and leases it to Chambers Medical Center for a period of 10 years. The normal selling price of the machine is R\$495,678, and its guaranteed residual value at the end of the non-cancelable lease term is estimated to be R\$15,000. The hospital will pay rents of R\$60,000 at the beginning of each year. Amirante incurred R\$300,000 in manufacturing costs and R\$14,000 in legal fees directly related to the signing of the lease. Amirante has determined that the collectibility of the lease payments is probable and that the implicit interest rate is 5%.

Instructions

- a. Discuss the nature of this lease in relation to the lessor and compute the amount of each of the following items.
 - 1. Lease receivable at commencement of the lease.
 - 2. Sales price.
 - 3. Cost of sales.
- b. Prepare a 10-year lease amortization schedule for Amirante, the lessor.
- c. Prepare all of Amirante's journal entries for the first year.

P21.8 (LO 2, 4) (Lessee Computations and Entries, Lease with Guaranteed Residual Value) Assume the same data as in P21.7 and that Chambers Medical Center has an incremental borrowing rate of 5% and an expected residual value at the end of the lease of R\$10,000.

Instructions

- a. Compute the amount of the initial lease liability.
- b. Prepare a 10-year lease amortization schedule.
- c. Prepare all of the lessee's journal entries for the first year.

- d. Suppose Chambers Medical Center incurred R\$7,000 of document preparation costs after the execution of the lease. How would the initial measurement of the lease liability and right-of-use asset be affected?

P21.9 (LO 3, 4) Groupwork (Lessor Computations and Entries, Sales-Type Lease with Unguaranteed Residual Value) Kobayashi Group manufactures a check-in kiosk with an estimated economic life of 12 years and leases it to **Japan Airlines (JAL)** (JPN) for a period of 10 years. The normal selling price (amounts in thousands) of the equipment is ¥299,140, and its unguaranteed residual value at the end of the lease term is estimated to be ¥20,000. JAL will pay annual payments of ¥40,000 at the beginning of each year. Kobayashi incurred costs of ¥180,000 in manufacturing the equipment and ¥4,000 in sales commissions in closing the lease. Kobayashi has determined that the collectibility of the lease payments is probable and that the implicit interest rate is 8%.

Instructions

- a. Discuss the nature of this lease in relation to the lessor and compute the amount of each of the following items.
 1. Lease receivable.
 2. Sales price.
 3. Cost of goods sold.
- b. Prepare a 10-year lease amortization schedule for Kobayashi, the lessor.
- c. Prepare all of the lessor's journal entries for the first year.

P21.10 (LO 2) (Lessee Computations and Entries, Lease with Unguaranteed Residual Value) Assume the same data as in P21.9, with **JAL** (JPN) having an incremental borrowing rate of 8%.

Instructions

- a. Compute the amount of the initial lease liability.
- b. Prepare a 10-year lease amortization schedule.
- c. Prepare all of the lessee's journal entries for the first year. Assume straight-line depreciation.

P21.11 (LO 2, 3) Groupwork (Lessee-Lessor Accounting for Residual Values) Goring Dairy leases its milking equipment from King Finance Company under the following lease terms.

1. The lease term is 10 years, non-cancelable, and requires equal rental payments of \$30,300 due at the beginning of each year starting January 1,

2022.

2. The equipment has a fair value at the commencement of the lease (January 1, 2022) of \$242,741 and a cost of \$180,000 on King Finance's books. It also has an estimated economic life of 15 years and an expected residual value of \$45,000, though Goring Dairy has guaranteed a residual value of \$50,000 to King Finance.
3. The lease contains no renewal options, and the equipment reverts to King Finance upon termination of the lease. The equipment is not of a specialized nature.
4. Goring Dairy's incremental borrowing rate is 8% per year. The implicit rate is also 8%.
5. Goring Dairy depreciates similar equipment that it owns on a straight-line basis.
6. Collectibility of the payments is probable.

Instructions

- a. Evaluate the criteria for classification of the lease by the lessor, and describe the nature of the lease. In general, discuss how the lessee and lessor should account for the lease transaction.
- b. Prepare the journal entries for the lessee and lessor at January 1, 2022, and December 31, 2022 (the lessee's and lessor's year-end). Assume no reversing entries.
- c. What would have been the amount of the initial lease liability recorded by the lessee upon the commencement of the lease if:
 1. The residual value of \$50,000 had been guaranteed by a third party, not the lessee?
 2. The residual value of \$50,000 had not been guaranteed at all?
- d. On the lessor's books, what would be the amount recorded as the lease receivable at the commencement of the lease, assuming the residual value of \$50,000 had not been guaranteed at all?

P21.12 (LO 2, 3, 4) (Lessee-Lessor Entries, Statement of Financial Position Presentation, Finance and Sales-Type Lease) Winston Industries and Ewing SA enter into an agreement that requires Ewing to build three diesel-electric engines to Winston's specifications. Upon completion of the engines, Winston has agreed to lease them for a period of 10 years and to assume all costs and risks of ownership. The lease is non-cancelable, becomes effective on January

1, 2022, and requires annual rental payments of €384,532 each January 1, starting January 1, 2022.

Winston's incremental borrowing rate is 8%. The implicit interest rate used by Ewing and known to Winston is 6%. The total cost of building the three engines is €2,600,000. The economic life of the engines is estimated to be 10 years, with residual value set at zero. Winston depreciates similar equipment on a straight-line basis. At the end of the lease, Winston assumes title to the engines. Collectibility of the lease payments is probable.

Instructions

- a. Discuss the nature of this lease transaction from the viewpoint of the lessor.
- b. Prepare the journal entry or entries to record the transaction on January 1, 2022, on the books of Winston (the lessee).
- c. Prepare the journal entry or entries to record the transaction on January 1, 2022, on the books of Ewing (the lessor).
- d. Prepare the journal entries for both the lessee and lessor to record the first rental payment on January 1, 2022.
- e. Prepare the journal entries for both the lessee and lessor to record any entries needed in connection with the lease at December 31, 2022. (Prepare a lease amortization schedule for 2 years.)
- f. Show the items and amounts that would be reported on the statement of financial position (not notes) at December 31, 2022, for both the lessee and the lessor.
- g. Assume that Winston incurs legal fees related to the execution of the lease of €30,000. In addition, assume Winston receives a lease incentive from Ewing of €50,000 to enter the lease. How will this affect your answer to part (b)?

P21.13 (LO 2, 4) (Statement of Financial Position and Income

Statement Disclosure—Lessee) The following facts pertain to a non-cancelable lease agreement between Alschuler Leasing and McKee Electronics, a lessee, for a computer system.

Commencement date	October 1, 2022
Lease term	6 years
Economic life of leased equipment	6 years
Fair value of asset at October 1, 2022	£313,043
Book value of asset at October 1, 2022	£280,000
Residual value at end of lease term	-o-

Lessor's implicit rate	8%
Lessee's incremental borrowing rate	8%
Annual lease payment due at the beginning of each year, beginning with October 1, 2022	£62,700

The collectibility of the lease payments is probable by the lessor. The asset will revert to the lessor at the end of the lease term. The straight-line depreciation method is used for all equipment.

The following amortization schedule has been prepared correctly for use by both the lessor and the lessee in accounting for this lease. The lease is to be accounted for properly as a sales-type lease.

Date	Lease Payment/ Receipt	Interest (8%) on Unpaid Liability/Receivable	Reduction of Lease Liability/Receivable	Balance of Lease Liability/Receivable
10/01/22				£313,043
10/01/22	£62,700		£ 62,700	250,343
10/01/23	62,700	£20,027	42,673	207,670
10/01/24	62,700	16,614	46,086	161,584
10/01/25	62,700	12,927	49,773	111,811
10/01/26	62,700	8,945	53,755	58,056
10/01/27	62,700	4,644	58,056	-0-
	<u>£376,200</u>	<u>£63,157</u>	<u>£313,043</u>	

Instructions

- Assuming the lessee's accounting period ends on September 30, answer the following questions with respect to this lease agreement.
 - What items and amounts will appear on the lessee's income statement for the year ending September 30, 2023?
 - What items and amounts will appear on the lessee's statement of financial position at September 30, 2023?
 - What items and amounts will appear on the lessee's income statement for the year ending September 30, 2024?
 - What items and amounts will appear on the lessee's statement of financial position at September 30, 2024?
- Assuming the lessee's accounting period ends on December 31, answer the following questions with respect to this lease agreement.

1. What items and amounts will appear on the lessee's income statement for the year ending December 31, 2022?
2. What items and amounts will appear on the lessee's statement of financial position at December 31, 2022?
3. What items and amounts will appear on the lessee's income statement for the year ending December 31, 2023?
4. What items and amounts will appear on the lessee's statement of financial position at December 31, 2023?

P21.14 (LO 2, 3, 4) (Lessor Operating Lease) Lewis Machinery Works entered into a lease agreement on January 1, 2022, to provide Garcia SA with a piece of machinery. The terms of the lease agreement were as follows.

1. The lease is to be for 3 years with rental payments of R\$10,521 to be made at the beginning of each year.
2. The machinery has a fair value of R\$55,000, a book value of R\$40,000, and an economic life of 8 years.
3. At the end of the lease term, both parties expect the machinery to have a residual value of R\$30,000, none of which is guaranteed.
4. The lease does not transfer ownership at the end of the lease term, and does not have a bargain purchase option, and the asset is not of a specialized nature.
5. Garcia knows that the implicit rate is 6%.
6. Collectibility of the payments is probable.

Instructions

- a. Evaluate the criteria for classification of the lease, and describe the nature of the lease.
- b. Prepare the amortization schedule Garcia will use over the lease term.
- c. Prepare the 2022 journal entries for Garcia.
- d. Prepare the 2022 journal entries for Lewis.
- e. Suppose the lease were only for 1 year instead of 3 years, with just one lease payment at the beginning of the lease term. Prepare any journal entries Garcia would need, assuming it elects to use the short-term lease option.

P21.15 (LO 2, 3) Groupwork (Lessee-Lessor Entries, Lease with an Unguaranteed Residual Value) Cleveland Group leased a new crane to Abriendo Construction under a 5-year, non-cancelable contract starting January 1,

2022. Terms of the lease require payments of R\$48,555 each January 1, starting January 1, 2022. The crane has an estimated life of 7 years, a fair value of R\$240,000, and a cost to Cleveland of R\$240,000. The estimated fair value of the crane is expected to be R\$45,000 (unguaranteed) at the end of the lease term. No bargain purchase or renewal options are included in the contract, and the crane is not a specialized asset. Both Cleveland and Abriendo adjust and close books annually at December 31. Collectibility of the lease payments is probable. Abriendo's incremental borrowing rate is 8%, and Cleveland's implicit interest rate of 8% is known to Abriendo.

Instructions

- a. Identify the type of lease involved and give reasons for your classification. Discuss the accounting treatment that should be applied by the lessor.
- b. Prepare all the entries related to the lease contract and leased asset for the year 2022 for the lessee and lessor, assuming Abriendo uses straight-line depreciation for all similar leased assets, and Cleveland depreciates the asset on a straight-line basis with a residual value of R\$15,000.
- c. Discuss what should be presented in the statement of financial position, the income statement, and the related notes of both the lessee and the lessor at December 31, 2022.

Concepts for Analysis

CA21.1 (LO 2) Writing (Lessee Accounting and Reporting) On January 1, 2022, Evans Company entered into a non-cancelable lease for a machine to be used in its manufacturing operations. The lease transfers control of the machine to Evans by the end of the lease term. The term of the lease is 8 years, which equals the useful life of the asset. The lease payment made by Evans on January 1, 2022, was one of 8 equal annual payments.

Instructions

- a. What is the theoretical basis for the accounting standard that requires long-term leases to be capitalized by the lessee?
- b. How should Evans account for this lease at its commencement?
- c. What expenses directly related to lease liability and right-of-use asset will Evans incur during the first year of the lease, and how will these expenses be determined?
- d. How should Evans report the lease transaction on its December 31, 2022, statement of financial position?

CA21.2 (LO 2, 3, 4) (Lessor and Lessee Accounting and Disclosure)

Sylvan SA entered into a non- cancelable lease arrangement with Breton Leasing for a certain machine. Breton's primary business is leasing. Sylvan will lease the machine for a period of 3 years, which is 50% of the machine's economic life. Breton will take possession of the machine at the end of the initial 3-year lease and lease it to another, smaller company that does not need the most current version of the machine. Sylvan does not guarantee any residual value for the machine and will not purchase the machine at the end of the lease term. Sylvan's incremental borrowing rate is 10%, and the implicit rate in the lease is 9%. Sylvan has no way of knowing the implicit rate used by Breton. Using either rate, the present value of the lease payments is between 90% and 100% of the fair value of the machine at the date of the lease agreement. Breton is reasonably certain that Sylvan will pay all lease payments.

Instructions

- a. With respect to Sylvan (the lessee), answer the following.
 1. How should Sylvan compute the appropriate amount to be recorded for the lease or asset acquired?
 2. What accounts will be created or affected by this transaction, and how will the lease or asset and other costs related to the transaction be recorded in earnings?
 3. What disclosures must Sylvan make regarding this leased asset?
- b. With respect to Breton (the lessor), answer the following.
 1. What type of leasing arrangement has been entered into? Explain the reason for your answer.
 2. How should this lease be recorded by Breton, and how are the appropriate amounts determined?
 3. How should Breton determine the appropriate amount of revenue to be recognized from each lease payment?
 4. What disclosures must Breton make regarding this lease?

CA21.3 (LO 2) (Lessee Accounting) On January 1, Santiago SA, a lessee, entered into three non-cancelable leases for new equipment, Lease L, Lease M, and Lease N. None of the three leases transfers ownership of the equipment to Santiago at the end of the lease term. The following information is specific to each lease.

1. Lease L does not contain a bargain purchase option.

2. Lease M contains a bargain purchase option. The lease term is equal to 50% of the estimated economic life of the equipment.
3. Lease N does not contain a bargain purchase option. The lease term is equal to 50% of the estimated economic life of the equipment.

Instructions

- a. What amount, if any, should Santiago record as a liability at commencement of the lease for each of the three leases above?
- b. Assuming that the lease payments are made on a straight-line basis, how should Santiago record each lease payment for each of the three leases above?

CA21.4 (LO 2, 4) Ethics (Lease Capitalization, Bargain Purchase Option)

Bader Corporation entered into a lease agreement for 100 photocopy machines for its company headquarters. The lease has a bargain purchase option because after the 5-year lease term, the company can purchase each copier for \$1,000, when the anticipated fair value is \$2,500.

Jerry Suffolk, the financial vice president, thinks the financial statements must recognize the lease agreement for a higher amount because of the bargain purchase option. The controller, Diane Buchanan, disagrees: "Although I don't know much about the copiers themselves, there is a way to avoid recording the higher lease liability." She argues that the company could claim that copier technology advances rapidly and that by the end of the lease term, the machines will most likely not be worth the \$1,000 bargain price.

Instructions

- a. What ethical issue is at stake?
- b. Should the controller's argument be accepted if she does not really know much about copier technology? Would it make a difference if the controller were knowledgeable about the rate of change in copier technology?
- c. What should Suffolk do?

CA21.5 (LO 2, 4) Writing (Short-Term Lease vs. Finance Lease) You are auditing the December 31, 2022, financial statements of Hockney plc, manufacturer of novelties and party favors. During your inspection of the company garage, you discovered that a used automobile not listed in the equipment subsidiary ledger is parked there. You ask Stacy Reeder, plant manager, about the vehicle, and she tells you that the company did not list the automobile because the company was only leasing it and elected to use the short-term lease accounting option for the lease. The lease agreement was entered into on January 1, 2022, with Crown New and Used Cars.

You decide to review the lease agreement to ensure that the lease should be afforded short-term lease treatment, and you discover the following lease terms.

1. Non-cancelable term of 2 years.
2. Rental of £3,240 per year (at the end of each year). (The present value at 8% per year is £5,778.)
3. Expected residual value after 2 years is £500. (The present value at 8% per year is £429.) Hockney guarantees the residual value of £500.
4. Estimated economic life of the automobile is 2.5 years.
5. Hockney's incremental borrowing rate is 8% per year.

Instructions

You are a senior auditor writing a memo to your supervisor, the audit partner in charge of this audit, to discuss the above situation. Be sure to include (a) why you inspected the lease agreement, (b) what you determined about the lease, and (c) how you advised your client to account for this lease. Explain every journal entry that you believe is necessary to record this lease properly on the client's books. (It is also necessary to include the fact that you communicated this information to your client.)

***CA21.6 (LO 5) (Sale-Leaseback)** On January 1, 2022, Perriman Company transferred equipment for cash and leased it back. As seller-lessee, Perriman retained the right to substantially all of the remaining use of the equipment. The term of the lease is 8 years.

Instructions

- a. What is the major issue related to sale-leaseback accounting?
- b.
 1. How should Perriman account for the sale portion of the sale-leaseback transaction at January 1, 2022?
 2. How should Perriman account for the leaseback portion of the sale-leaseback transaction at January 1, 2022?

Using Your Judgment

Note that M&S and British Airways have not yet adopted the new lease accounting rules. As a result, in the financial statements referred to below, finance leases are referred to as "capital," and assets and liabilities related to operating leases are not recognized on the statement of financial position.

Financial Reporting Problem

Marks and Spencer plc (M&S)

The financial statements of **M&S** (GBR) are presented in [Appendix A](#). The company's complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to M&S's financial statements and the accompanying notes to answer the following questions.

- a. What types of leases are used by M&S?
- b. What amount of finance leases was reported by M&S in total and for less than one year?
- c. What minimum annual rental commitments under all non-cancelable leases at year-end 2019 did M&S disclose?

Comparative Analysis Case

British Airways and Air France

Instructions

Go to the **British Airways** (GBR) and **Air France** (FRA) company websites and use information found there to answer the following questions related to these airlines.

- a. What types of leases are used by Air France and on what assets are these leases primarily used?
- b. How long-term are some of Air France's leases? What are some of the characteristics or provisions of Air France's (the lessee) leases?
- c. What did Air France report in 2018 as its lease debt?
- d. How does British Airways' use of leases compare with Air France's?

Financial Statement Analysis Case

Air France

Presented in [Illustration 21.39](#) are the financial statement disclosures from the 2018 annual report of **Air France** (FRA).

Instructions

Answer the following questions related to these disclosures.

- a. What is the total obligation disclosed in the Lease Debt note at year-end 2018 for Air France?
- b. What is the total of right-of-use assets for the year ended December 31, 2018, for Air France?
- c. Describe the nature of any lease arrangements not capitalized by Air France at fiscal year-end 2018.

Accounting, Analysis, and Principles

Salaur SpA, a risky start-up, is evaluating a lease arrangement being offered by TSP AG for use of a standard computer system. The lease is non-cancelable, and in no case does Salaur receive title to the computers during or at the end of the lease term. TSP will lease the returned computers to other customers. The lease starts on January 1, 2022, with the first rental payment due on January 1, 2022.

Additional information related to the lease and the underlying leased asset is as follows.

Yearly rental	€3,057.25
Lease term	3 years
Estimated economic life	5 years
Purchase option	€3,000 at end of 3 years, which approximates fair value
Renewal option	1 year at €1,500; no penalty for non-renewal; standard renewal clause
Fair value at commencement	€10,000
Cost of asset to lessor	€8,000
Residual value:	
Guaranteed	–0–
Unguaranteed	€3,000
Lessor's implicit rate (known by the lessee)	12%
Estimated fair value at end of lease	€3,000

Accounting

- a. Prepare the journal entries for Salaur for 2022.
- b. Repeat the requirements in part (a), assuming Salaur has the option to purchase the system at the end of the lease for €100.

Analysis

Briefly discuss the impact of capitalizing this lease on two common ratios: return on assets and debt to total assets.

Principles

What fundamental quality of useful information is being addressed when a company like Salaur capitalizes all leases with terms of one year or longer?

Bridge to the Profession

Authoritative Literature References

- [1] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), Appendix A, Defined Terms.
- [2] The Conceptual Framework for Financial Reporting (London, U.K.: IASB, 2010), Chapter 4, par. 4.4.
- [3] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), paras. BC41–56.
- [4] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. BC156(b).
- [5] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 27(c).
- [6] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 26.
- [7] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), Appendix A, Defined Terms.
- [8] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. IN10.
- [9] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 27(c).
- [10] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 63.
- [11] International Financial Reporting Standard 15, *Revenue from Contracts with Customers* (London, U.K.: IFRS Foundation, May 2014), paras. IN7(e) and 9(e).
- [12] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 71(b).
- [13] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. B33.

[14] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), Appendix A, Defined Terms.

[15] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), paras. 69 and 83.

[16] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), paras. 59 and 92.

[17] International Financial Reporting Standard 16, *Leases* (London, U.K.: IFRS Foundation, January 2016), par. 103.

Research Case

Daniel Hardware is considering alternative financing arrangements for equipment used in its warehouses. Besides purchasing the equipment outright, Daniel is also considering a lease. Accounting for the outright purchase is fairly straightforward, but because Daniel has not used equipment leases in the past, the accounting staff is less informed about the specific accounting rules for leases. The staff is aware of some general lease rules related to “right-of-use,” but they are unsure how the accounting rules apply to their situation. Daniel has asked you to conduct some research on these items related to lease capitalization criteria.

Instructions

Access the IFRS authoritative literature at the IFRS website. When you have accessed the documents, you can use the search tool in your Internet browser to respond to the following questions. (Provide paragraph citations.)

- a. What is included in the measurement of (1) the lease liability and (2) the right-of-use asset?
- b. Besides the non-cancelable term of the lease, what are other considerations in determining the “lease term”?
- c. When should a lessee account for a lease modification? What procedures are followed?

Global Accounting Insights

LEARNING OBJECTIVE 7

Compare the accounting procedures for leases under IFRS and U.S. GAAP.

Leasing is a global business. Lessors and lessees enter into arrangements with one another without regard to national boundaries. Although U.S. GAAP and IFRS accounting guidance for leasing is not identical, both the FASB and the IASB

decided that prior lease accounting did not provide the most useful, transparent, and complete information about leasing transactions. In response, the FASB and IASB worked together on a lease accounting project. The FASB issued an update to its Codification, adding section 842, *Leases (ASC 842)*, in February 2016. Many of the requirements in the new FASB standard are the same as those in *IFRS 16*. The main differences between U.S. GAAP and IFRS under the new rules are in relation to the lessee accounting model. Specifically, U.S. GAAP still maintains a distinction between finance leases and operating leases in the financial statements for lessees. As a result, lessees account for some leases using the finance lease method, while accounting for operating leases (leases that convey right of use but not ownership) is based on a straight-line lease expense approach.

Relevant Facts

Following are the key similarities and differences between U.S. GAAP and IFRS related to the accounting for leases.

Similarities

- Both U.S. GAAP and IFRS share the same objective of recording leases by lessees and lessors according to their economic substance—that is, according to the definitions of assets and liabilities.
- Much of the terminology for lease accounting in IFRS and U.S. GAAP is the same.
- Both U.S. GAAP and IFRS require lessees to recognize a right-of-use asset and related lease liability for leases with terms longer than one year.
- Under both IFRS and U.S. GAAP, lessors use the same general criteria (consistent with the recent standard on revenue) to determine if there is transfer of control of the underlying asset and if lessors classify leases as sales-type or operating.
- U.S. GAAP and IFRS use the same lessor accounting model for leases classified as sales-type or operating.
- U.S. GAAP and IFRS have similar qualitative and quantitative disclosure requirements for lessees and lessors.

Differences

- U.S. GAAP continues to use a classification test for lessees under *ASC 842*. Thus, lessees account for some leases using the finance lease method. Leases classified as operating leases under U.S. GAAP will be accounted for differently than under IFRS (see example in [About the Numbers](#) section below).

- IFRS allows alternative measurement bases for the right-of-use asset (e.g., the revaluation model, in accordance with *IAS 16, Property, Plant and Equipment*).
- While both U.S. GAAP and IFRS have a short-term lease exception, U.S. GAAP does not have the additional lessee recognition and measurement exemption for leases of assets of low value (e.g., personal computers, small office furniture).
- *IFRS 16* includes explicit guidance on collectibility of the lease payments by lessors and amounts necessary to satisfy a residual value guarantee.
- U.S. GAAP distinguishes between sales-type and direct financing leases for lessors (which defers gross profit on direct financing leases). Therefore, *IFRS 16* permits recognition of selling profit on direct financing leases at lease commencement.

About the Numbers

Finance and Operating Leases (Lessee)

Under U.S. GAAP, both lessees and lessors classify lease arrangements as either finance or operating. In either case, lessees **capitalize all leased assets and liabilities**. Therefore, the statement of financial position (balance sheet) for a lessee that uses either a finance lease or an operating lease will be the same.

Income effects for lessees depends on the type of lease. For a **finance lease**, the lessee recognizes interest expense on the lease liability over the life of the lease using the effective-interest method and records amortization expense on the right-of-use asset generally on a straight-line basis. A lessee therefore reports both interest expense and amortization of the right-of-use asset on the income statement. As a result, the total expense for the lease transaction is generally higher in the earlier years of the lease arrangement under a finance lease arrangement.

In an **operating lease**, the lessee also measures interest on the liability using the effective-interest method. However, the lessee amortizes the right-of-use asset such that the total lease expense is the same from period to period. In other words, for operating leases, only a single lease expense (comprised of interest on the liability and amortization of the right-of-use asset) is recognized on the income statement, typically on a straight-line basis. Illustrations of both these approaches are shown in the following sections.

Lease Classification

Under U.S. GAAP, lessees and lessors use the same tests to determine whether to use the finance method or the operating method. That is, the objective is to classify a lease based on whether the arrangement is effectively a purchase of the underlying asset. If the lease transfers control (or ownership) of the underlying

asset to a lessee, then the lease is classified as a **finance lease**. All leases that do not meet any of the finance lease tests are classified as operating leases. In an **operating lease**, a lessee **obtains the right to use the underlying asset** but not ownership of the asset itself. Specifically, for a lease to be a finance lease, it must be non-cancelable and **meet at least one of the five tests** listed in [Illustration 21.18](#). Otherwise, the lease is an operating lease.

Lessee Accounting for Operating Leases

If a lease does not meet any of the lease classification tests for a finance lease, a lessee should classify it as an operating lease. For leases classified as operating, the lessee records a right-of-use asset and lease liability at commencement of the lease. This is similar to the finance lease approach. However, the lessee records the same amount for lease expense each period over the lease term (often referred to as the straight-line method for expense measurement).

Companies continue to use the effective-interest method for amortizing the lease liability. However, instead of reporting interest expense, a lessee records interest on the lease liability as part of Lease Expense. In addition, the lessee no longer reports amortization expense related to the right-of-use asset. Instead, it “plugs” in an amount that increases the Lease Expense account so that it is the same amount from period to period. This plugged amount then reduces the right-of-use asset, such that both the right-of-use asset and the lease liability are amortized to zero at the end of the lease.²³

Operating Lease Example

To illustrate lessee accounting for an operating lease, consider the following terms of a lease between Parker Shipping Co. and Stoughton Trailers Inc. for the right-of-use of Stoughton’s standard hydraulic lifts. The lease, signed on January 1, 2022, specifies that Stoughton grants right-of-use of the lift to Parker under the following standard terms.

- The lease agreement is non-cancelable with a term of four years, requiring equal rental payments of \$9,538.39 with the first payment on January 1, 2022 (annuity-due basis).
- The lift has a fair value at commencement of the lease of \$40,000 and an estimated **economic life of six years**. The lift has a **residual value** at the end of the lease of **\$8,000 (unguaranteed)**. The cost of the lift on Stoughton’s books is \$30,000.
- The lease contains no renewal options. The lift reverts to Stoughton at the termination of the lease.
- The implicit rate of Stoughton (the lessor) is 8 percent and is known by Parker.

Stoughton (the lessor) determines the rental payments such that it earns a rate of return of 8 percent per year (implicit rate) on its investment, as shown in [**Illustration GAAP21.1**](#).

Fair value of leased equipment	\$40,000.00
Less: Present value of the residual value ($\$8,000 \times .73503 (PV_{4,8\%})$)	5,880.24
Amount to be recovered by lessor through lease payments	<u>\$34,119.76</u>
Four beginning-of-year lease payments to earn an 8% return (\$34,119.76 ÷ 3.57710 (PVF-AD_{4,8%}))	\$ 9,538.39

[**ILLUSTRATION GAAP21.1 Computation of Lease Payments**](#)

The lease is classified as an operating lease by Parker and Stoughton, as indicated by the analysis in [**Illustration GAAP21.2**](#).

Test	Assessment
1. Transfer of ownership test	Transfer of ownership does not occur; the asset reverts to Stoughton at the end of the lease.
2. Purchase option test	There is no bargain purchase option in the lease.
3. Lease term test	The lease term is 66.67% ($4 \div 6$) of the economic life of the asset, which is less than the major part of the life of the asset (75%).
4. Present value test	The present value of the lease payments is \$34,119.76*, which is 85.3% ($\$34,119.76 \div \$40,000$) of the fair value of the lift. Therefore, it does not meet the present value test.
5. Alternative use test	The equipment is not of a specialized nature and is expected to have use to Stoughton when returned at the end of the lease.
* $\$9,538.39 \times 3.57710 (PVF-AD_{4,8\%})$	

[**ILLUSTRATION GAAP21.2 Lease Classification Tests**](#)

Thus, the lease is classified as an operating lease by both the lessee and lessor, as none of the classification tests are met. Parker makes the following entry to record this operating lease and the first payment.

January 1, 2022		
Right-of-Use Asset	34,119.76	
Lease Liability		34,119.76
Lease Liability	9,538.39	
Cash		9,538.39

Illustration GAAP21.3 shows the interest expense and amortization of the lease liability, applying the effective-interest method.

Parker Shipping Co. Lease Amortization Schedule Annuity-Due Basis				
Date	Annual Lease Payment	Interest (8%) on Liability	Reduction of Lease Liability	Lease Liability
	(a)	(b)	(c)	(d)
1/1/22				\$34,119.76
1/1/22	\$ 9,538.39	\$ -0-	\$ 9,538.39	24,581.37
1/1/23	9,538.39	1,966.51	7,571.88	17,009.49
1/1/24	9,538.39	1,360.76	8,177.63	8,831.86
1/1/25	9,538.39	706.53*	8,831.86	0.00
	<u>\$38,153.56</u>	<u>\$4,033.80</u>	<u>\$34,119.76</u>	

a. Lease payment as required by lease.
b. Eight percent of the preceding balance of (d) except for 1/1/22; since this is an annuity due, no time has elapsed at the date of the first payment and therefore no interest has accrued.
c. (a) minus (b).
d. Preceding balance minus (c).

*Rounded by \$0.02.

ILLUSTRATION GAAP21.3 Lease Amortization Schedule

Parker computes straight-line expense and amortization on its right-of-use asset for each year of the lease, as presented in **Illustration GAAP21.4**.

Parker Shipping Co. Lease Expense Schedule				
Date	(A) Lease Expense (Straight-Line)	(B) Interest (8%) on Liability	(C) Amortization of ROU Asset (A – B)	(D) Carrying Value of ROU Asset (D – C)
12/31/21				\$34,119.76
12/31/22	\$ 9,538.39	\$1,966.51	\$ 7,571.88	26,547.88
12/31/23	9,538.39	1,360.76	8,177.63	18,370.25
12/31/24	9,538.39	706.53	8,831.86	9,538.39
12/31/25	9,538.39		9,538.39	0.00
	\$38,153.56	\$4,033.80	\$34,119.76	

ILLUSTRATION GAAP21.4 Lease Expense Schedule

As indicated, the annual lease expense equals interest related to amortizing its lease liability plus amortization of the right-of-use asset. Parker decreases the right-of-use asset's book value each year by an amount (a plug) such that total annual lease expense is \$9,538.39. The journal entries by Parker over the first 2 years of the lease are presented in [**Illustration GAAP21.5.**](#)

Parker Shipping (Lessee)

Recognize lease expense, record amortization (December 31, 2022):

Lease Expense	9,538.39
Right-of-Use Asset	7,571.88
Lease Liability	1,966.51

Balance Sheet

Noncurrent assets

Right-of-use assets \$26,547.88

Current liabilities

Lease liability \$9,538.39

Noncurrent liabilities

Lease liability 17,009.49

Income Statement

Lease expense \$9,538.39

Record second lease payment (January 1, 2023):

Lease Liability	9,538.39
Cash	9,538.39

Recognize lease expense, record amortization (December 31, 2023):

Lease Expense	9,538.39
Right-of-Use Asset	8,177.63
Lease Liability	1,360.76

Balance Sheet

Noncurrent assets

Right-of-use assets \$18,370.25

Current liabilities

Lease liability \$9,538.39

Noncurrent liabilities

Lease liability 8,831.86

Income Statement

Lease expense \$9,538.39

Record third lease payment (January 1, 2024):

Lease Liability	9,538.39
Cash	9,538.39

ILLUSTRATION GAAP21.5 Lessee Operating Lease Entries

After the entry for the final payment on December 31, 2025, the lease liability and right-of-use asset are fully amortized. The lease expense for the 4 years (\$38,153.56) is comprised of amortization of the right-of-use asset of \$34,119.76 plus interest associated with the amortization of the lease liability of \$4,033.80. Parker combines interest on the liability and amortization of the right-of-use asset to report lease expense on the income statement over the life of the lease.

GAAP Self-Test Questions

1. Which of the following is **not** true with respect to lease accounting under U.S. GAAP?

- a. U.S. GAAP requires lessees to recognize a right-of-use asset and related lease liability for leases with terms longer than one year.
- b. U.S. GAAP has similar lease disclosure requirements as IFRS.
- c. U.S. GAAP permits recognition of selling profit on direct financing leases at lease commencement.
- d. IFRS uses essentially the same lessor accounting model as U.S. GAAP for leases classified as sales-type or operating.

2. Under U.S. GAAP:

- a. lessees and lessors recognize right-of-use assets.
- b. lessees always use the operating method.
- c. lessees always recognize a right-of-use asset and lease liability for leases with terms less than one year.
- d. lessors distinguish between sales-type and direct financing leases.

3. All of the following are similarities with respect to the accounting for leases under IFRS and U.S. GAAP **except**:

- a. lessees recognize a right-of-use asset and related lease liability for leases with terms longer than one year.
- b. lessees use the same general lease classification criteria to determine whether lessees classify leases as finance or operating.
- c. lessors use the same model to account for sales-type leases.
- d. U.S. GAAP and IFRS have similar qualitative and quantitative disclosure requirements for lessees and lessors.

4. Under U.S. GAAP:

- a. lessees may not use alternative measurement bases (e.g., revaluation accounting) for the right-of-use asset.
- b. different measurement bases may be used for the right-of-use asset but only for leases with terms less than one year.
- c. the same guidance on collectibility of the lease payments is used by lessors as in IFRS.
- d. lessors are required to defer gross profit on sales-type leases.

5. All of the following are differences with respect to the accounting for leases under IFRS and U.S. GAAP **except**:

- a. IFRS has an additional lessee recognition and measurement exemption for leases of assets of low value (U.S. GAAP does not).
- b. IFRS allows alternative measurement bases for the right-of-use asset (e.g., the revaluation model).
- c. under IFRS, lessees use the same tests to determine whether a lease should be classified as finance or operating.
- d. IFRS permits recognition of selling profit on direct financing leases at lease commencement.

GAAP Concepts and Application

GAAP21.1 Where can authoritative U.S. GAAP related to the accounting for leases be found?

GAAP21.2 Briefly describe some of the similarities and differences between U.S. GAAP and IFRS with respect to the accounting for leases.

GAAP21.3 LeBron James (LBJ) Corporation agrees on January 1, 2022, to lease equipment from Cavaliers, Inc. for 3 years. The lease calls for annual lease payments of \$23,000 at the beginning of each year. The lease does not transfer ownership nor does it contain a bargain purchase option, and it is not a specialized asset. In addition, the useful life of the equipment is 10 years, and the present value of the lease payments is less than 90% of the fair value of the equipment. Prepare LBJ's journal entries on January 1, 2022 (commencement of the operating lease), and on December 31, 2022. Assume the implicit rate used by the lessor is unknown, and LBJ's incremental borrowing rate is 6%.

Answers to GAAP Self-Test Questions

1. c 2. d 3. b 4. a 5. c

Notes

1 The IASB believes that the reporting of an asset and liability for a lease arrangement is consistent with its conceptual framework's definition of assets and liabilities. That is, assets are resources controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. Liabilities are present obligations of the entity arising from past events, the settlement of which is expected to result in an outflow of assets from the entity. **[2]**

- 2** In contrast to the single finance lease method under IFRS, the FASB adopted a dual-lease model, under which some leases—those which convey right-of-use but not ownership—would have a straight-line expense pattern, while others would be accounted for as a financing. The IASB adopted the single lease approach, reasoning that most users of financial statements believe that all leases create assets and “debt-like” liabilities for a lessee. Consequently, they benefit from lessees recognizing interest on those liabilities, which enables them to perform meaningful ratio analyses. In addition, the finance lease model is easy to understand, which reduces cost and complexity by removing the need for systems that can deal with two lessee accounting approaches. [3]
- 3** As discussed more fully in a later section of the chapter, the amount of the right-of-use asset is adjusted for prepaid rent, lease incentives received from the lessor, and any initial direct costs.
- 4** Reasonably certain is a high threshold of probability. The IASB intended that parties to a lease should account for options only when the lessee has a compelling economic reason to exercise a purchase, renewal, or termination option. [4]
- 5** This difficulty arises because, for example, the lessee may not know the residual value used by the lessor, nor the initial direct costs that the lessor incurs.
- 6** As discussed in more detail later in the chapter, if the lease contains a bargain purchase option, such that it is reasonably certain that the lessee will purchase the asset at the end of the lease, the lessee depreciates the right-of-use asset over the economic life of the asset.
- 7** The computation of the present value is rounded by €0.02. The rounding occurs because the tables from [Chapter 6](#) are used to determine the amounts shown. *For homework and other computations in the text, we use the tables, which may lead to small rounding differences.* In practice, a financial calculator is often used to avoid these rounding differences.
- 8** Later in the chapter, we provide an expanded discussion of the relationship between the expected residual value and the guaranteed residual value, and its effect on the measurement of the lease liability. Also, note that the term of the lease is equal to the useful life of the asset, and the present value of the lease payments is nearly 96 percent of the fair value of the underlying asset, such that Ivanhoe (the lessee) takes ownership or consumes the substantial portion of the underlying asset over the lease term.
- 9** If Ivanhoe had not known CNH’s implicit rate, it would have used its incremental borrowing rate of 5 percent to compute the present value of the lease liability.

- 10 As discussed, in measuring the liability and right-of-use asset, Ivanhoe does not include the present value of the residual value because the guaranteed amount is not greater than the expected amount.
- 11 Because it occurs at the lease commencement date, the first payment does not contain an interest component.
- 12 If Ivanhoe purchases the backhoe during the term of the lease, it accounts for the transaction as a termination of the lease and a purchase of an asset. Thus, it would record any difference between the purchase price and the carrying amount of the lease liability as an adjustment of the carrying amount of the asset.
- 13 Adapted from PricewaterhouseCoopers, *Leases—2016* (www.pwc.com), [Chapter 4](#).
- 14 The IASB concluded that by meeting any of the lease classification tests in [Illustration 21.18](#), the lessor transfers control (ownership) of the leased asset and therefore satisfies a performance obligation, which is required for revenue recognition under the IASB's recent standard on revenue. Although not part of the classification tests, the lessor must also determine whether the collectibility of payments from the lessee is probable. If payments are not probable, the lessor does not record a receivable and does not derecognize the leased asset. Instead, receipt of any lease payments is recorded as a deposit liability. [\[11\]](#)
- 15 As discussed earlier, if a lease contains a renewal option that is a bargain (i.e., difference between the renewal rental and the expected fair rental is great enough to make exercise of the option to renew reasonably certain), the lessor should include bargain renewal periods in the lease term.
- 16 The transfer of ownership, the bargain purchase option, and the alternative use test essentially give ownership of the leased asset to the lessee. The other two tests give control of a substantial portion of the underlying asset to the lessee, and in some cases, essentially ownership.
- 17 Lease Receivable is often defined as only the present value of the rental payments plus the present value of the guaranteed residual value. In the case in which the lessor has an unguaranteed residual value, the total amount is often referred to as the net investment in the lease. Another approach is to report the unguaranteed residual value separately when making the journal entry. We use the definition in [Illustration 21.19](#) for pedagogical reasons; *this definition (including both guaranteed and unguaranteed residual values) should be used in the homework.*

18 For a lease classified as operating, if collectibility is not probable, recognition of lease income is limited to cash received.

19 If the CNH/Ivanhoe lease were a lease with no selling profit (the cost of the backhoe is equal to the fair value), the entry at commencement would be as follows.

Lease Receivable	100,000	
Equipment		100,000

That is, the backhoe is not part of inventory, and the lease is a financing arrangement (a direct financing lease).

20 Adapted from PricewaterhouseCoopers, *Leases—2016* (www.pwc.com), p. 4-4.

21 Pepa Kraft, “Rating Agency Adjustment to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads,” *The Accounting Review* (March 2015), Vol. 90, No. 2, pp 641–674. In addition, a study by J.P. Morgan showed significant variation in the range of analysts’ estimates of the underlying lease obligations under the new rules. See P. Elwin and S. C. Fernandes, “Leases on B/S from 2017? Retailers and Transport Will Be Hit Hard in Leverage Terms,” *Global Equity Research*, J.P. Morgan Securities (May 17, 2013). See also M. Maurer, “New Lease Accounting Standard May Mislead Investors, Credit Suisse Says,” *Wall Street Journal* (July 10, 2019).

22 The same amortization schedule can be used for the lessee and lessor because there is no residual value and Parker knows the implicit rate used by the lessor is setting the payments (lessee and lessor use the same discount rate).

23 The FASB indicates that reporting a single operating cost in the income statement more appropriately reflects the economics of an operating lease than the separate recognition of interest and amortization used in the finance lease approach. The rationale for this approach is that an operating lease grants different rights to the lessee. The different rights are that in an operating lease, the lessee is neither exposed to, nor benefits from, any value changes in the right-of-use asset over the term of the lease.

Sources: A. Catanach and E. Ketz, “Still Searching for the ‘Rite’ Stuff,” *Grumpy Old Accountants* (April 30, 2012), blogs.smeal.psu.edu; Sue Lloyd, “A New Lease on Life,” *Investor Perspective* (January 2016); “A Study on the Impact of Lease Capitalization: IFRS 16: The New Leases Standard,” www.pwc.com (February 2016); and Jean Eaglesham, “Airlines Get a Break in New Accounting for Leases,” *Wall Street Journal* (November 15, 2019).

CHAPTER 22

Accounting Changes and Error Analysis

LEARNING OBJECTIVES

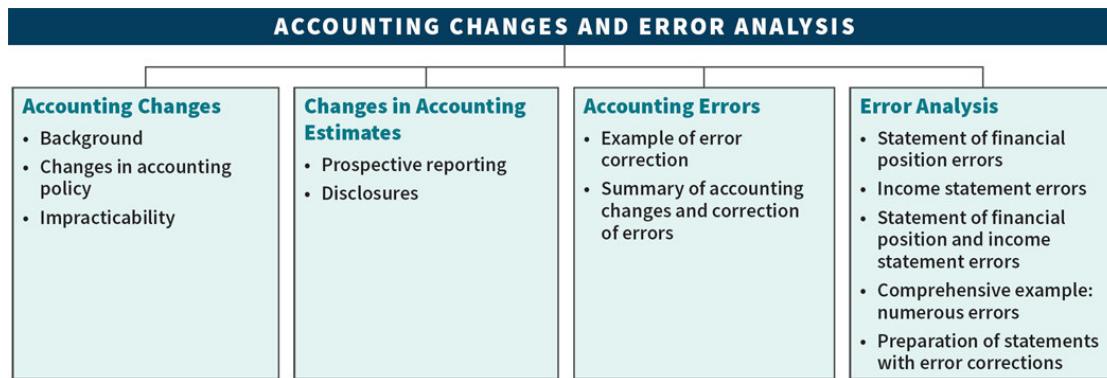
After studying this chapter, you should be able to:

1. Discuss the types of accounting changes and the accounting for changes in accounting policies.
2. Describe the accounting and reporting for changes in estimates.
3. Describe the accounting for correction of errors.
4. Analyze the effect of errors.

This chapter also includes numerous conceptual discussions that are integral to the topics presented here.

PREVIEW OF CHAPTER 22

As the following opening story indicates, changes in accounting policies and errors in financial information are significant. When these changes occur, companies must follow specific accounting and reporting requirements. To ensure comparability among companies, the IASB has standardized reporting of accounting changes, changes in accounting estimates, error corrections, and related earnings per share information. In this chapter, we discuss these reporting standards, which help investors better understand a company's financial condition. The content and organization of the chapter are as follows.



Needed: Valid Comparisons

The IASB's Conceptual Framework describes comparability (including consistency) as one of the qualitative characteristics that contribute to the usefulness of accounting information. Unfortunately, companies are finding it difficult to maintain comparability and consistency due to the numerous changes in accounting policies mandated by the IASB.

Presented below is a condensed version of the change in accounting policy note of **United Business Media (UBM)** (IRL) in a recent annual report.

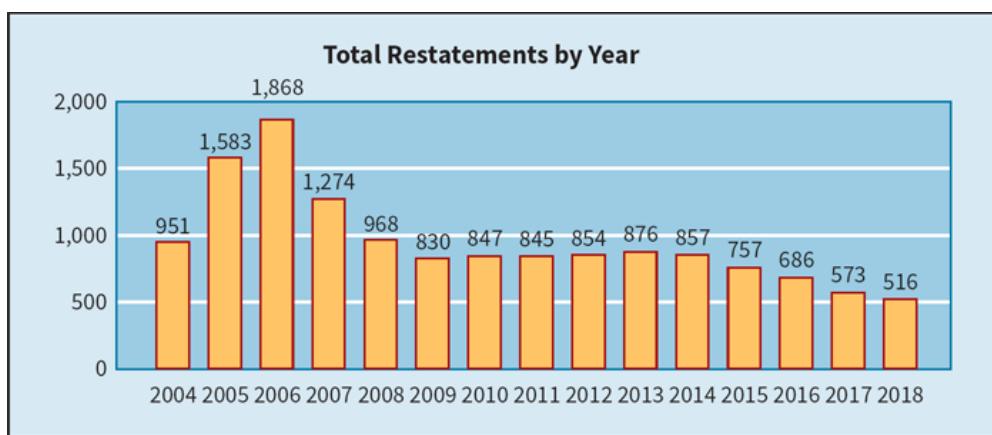
New and amended IFRSs (in part)

The following new and amended IFRSs may have an impact on the Group's consolidated financial statements:

IFRS 9 Financial Instruments—Financial assets will be measured at amortised cost or fair value. Liabilities will be measured in accordance with the existing requirements of *IAS 39*, but the portion of the change in fair value of a liability arising from changes in the entity's own credit risk will be presented in other comprehensive income, rather than in the income statement.

IFRS 15 Revenue Recognition and IFRS 15 (amendment)—*IFRS 15* applies to all contracts with customers excluding those covered by other IFRSs such as lease contracts, insurance contracts, and financial instruments. Core principle of the standard: Recognise revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services.

IFRS 16 Leases—*IFRS 16* specifies how an IFRS reporter will recognise, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognise assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. Lessors continue to classify leases as operating or finance, with *IFRS 16*'s approach to lessor accounting substantially unchanged from its predecessor, *IAS 17*.



What these excerpts indicate is that the IASB is constantly attempting to improve financial reporting as conditions change in the financial world. And as you have learned in our study of impairment of financial assets, revenue, and leases in [Chapters 17, 18](#) and [21](#), we are experiencing a period of significant accounting change and related implementation challenges.

Beyond accounting changes, a number of companies have faced restatements due to errors in their financial statements. This accompanying chart shows the total restatements per year since 2004. There is much good news in the chart. In 2007, restatements declined by 32 percent (from 1,868 to 1,274). In 2008, restatements declined another 24 percent (from 1,274 to 968).

Although the declining trend continued in 2009, restatements stabilized from 2010–2014 but then saw additional declines from 2015–2018. The overall decline is attributed to improved reliability of internal controls, but some observers suspect that the drop may also be due to relaxed enforcement by market regulators.

The trend in restatements is a positive development. However, when restatements and accounting changes arise, financial statement users still need high-quality accounting information to make valid comparisons of financial performance to performance in periods before the accounting change or restatement.

Review and Practice

Go to the [Review and Practice](#) section at the end of the chapter for a targeted summary review and practice problem with solution. Multiple-choice questions with annotated solutions, as well as additional exercises and practice problem with solutions, are also available online.

Accounting Changes

LEARNING OBJECTIVE 1

Discuss the types of accounting changes and the accounting for changes in accounting policies.

Background

Accounting alternatives diminish the comparability of financial information between periods and between companies; they also obscure useful historical trend data. For example, if **Toyota** (JPN) revises its estimates for equipment useful lives, depreciation expense for the current year will not be comparable to depreciation expense reported by Toyota in prior years. Similarly, if **Tesco** (GBR) changes to FIFO inventory pricing while **Marks and Spencer plc** (GBR) uses the retail method, it will be difficult to compare these companies' reported results. A reporting framework helps preserve comparability when there is an accounting change.

The IASB has established a reporting framework that involves two types of accounting changes. [1] (See the [Authoritative Literature References](#) section near the end of the chapter.) The two types of accounting changes are:

1. **Change in accounting policy.** A change from one accepted accounting policy to another one. For example, **Alcatel Lucent Enterprise** (FRA) changed its method of accounting for actuarial gains and losses from using the corridor approach to immediate recognition.
2. **Change in accounting estimate.** A change that occurs as the result of new information or additional experience. As an example, **Daimler AG** (DEU) recently revised its estimates of the useful lives of its depreciable property due to modifications in its productive processes.

A third category necessitates changes in accounting, though it is not classified as an accounting change.

3. **Errors in financial statements.** Errors result from mathematical mistakes, mistakes in applying accounting policies, or oversight or misuse of facts that existed when preparing the financial statements. For example, a company may incorrectly apply the retail inventory method for determining its final inventory value.

The IASB classifies changes in these categories because each category involves different methods of recognizing changes in the financial statements. In this chapter, we discuss these classifications. We also explain how to report each item in the accounts and how to disclose the information in comparative statements.

Changes in Accounting Policy

By definition, a **change in accounting policy** involves a change from one accepted accounting policy to another. For example, a company might change the basis of inventory pricing from average-cost to FIFO. Or it might change its method of revenue recognition for long-term construction contracts from the cost-recovery to the percentage-of-completion method.

Companies must carefully examine each circumstance to ensure that a change in policy has actually occurred. **Adoption of a new policy** in recognition of events that have occurred for the first time, or that were previously immaterial, is not a change in accounting policy. For example, a change in accounting policy has not occurred when a company adopts an inventory method (e.g., FIFO) for **newly** acquired items of inventory, even if FIFO differs from that used for **previously recorded** inventory. Another example: certain marketing expenditures that were previously immaterial and expensed in the period incurred. It is not considered a change in accounting policy if they become material and should properly be deferred and amortized.

Finally, what if a company previously followed an accounting policy that was not acceptable? Or what if the company applied a policy incorrectly? In such cases, this type of change is a **correction of an error**. For example, a switch from the cash (income tax) basis of accounting to the accrual basis is a correction of an error. Or if a company deducted residual value when computing double-declining depreciation on plant assets and later recomputed depreciation without deducting estimated residual value, it has corrected an error.

There are three possible approaches for reporting changes in accounting policies:

1. **Report changes currently.** In this approach, companies report the cumulative effect of the change in the current year's income statement. The **cumulative effect** represents the difference in prior years' income between the newly adopted and prior accounting policy. Under this approach, the effect of the change on prior years' income appears only in the current-year income statement. The company does not alter **prior-year financial statements**.

Advocates of this position argue that changing prior years' financial statements results in a loss of confidence in financial reports. How do investors react when told that the earnings computed three years ago are now entirely different? Changing prior periods, if permitted, also might upset contractual arrangements based on the old figures. For example, profit-sharing arrangements computed on the old basis might have to be recomputed and completely new distributions made, creating numerous legal problems. Many practical difficulties also exist: The cost of changing prior period financial statements may be excessive, or determining the amount of the prior period effect may be impossible on the basis of available data.

2. **Report changes retrospectively.** **Retrospective application** refers to the application of a different accounting policy to recast previously issued financial statements—**as if the new policy had always been used**. In other words, the company “goes back” and adjusts **prior years' statements** on a basis consistent with the newly adopted policy. The company shows any cumulative effect of the change as an adjustment to beginning retained earnings of the earliest year presented.

Advocates of this position argue that retrospective application ensures comparability. Think for a moment what happens if this approach is not used: The year *previous* to the change will be on the old method; the year *of the change* will report the entire cumulative adjustment; and the *following* year will present financial statements on the new basis without the cumulative effect of the change. Such lack of consistency fails to provide meaningful earnings-trend data and other financial relationships necessary to evaluate the business.

3. **Report changes prospectively (in the future).** In this approach, previously reported results remain. As a result, companies do not adjust opening balances to reflect the change in policy. Advocates of this position argue that once management presents financial statements based on acceptable accounting policies, they are final; management cannot change prior periods by adopting a new policy. According to this line of reasoning, the current-period cumulative adjustment is not appropriate because that approach includes amounts that have little or no relationship to the current year's income or economic events.

Given these three possible approaches, which does the accounting profession prefer? The IASB **requires that companies use the retrospective approach.** Why? Because it provides financial statement users with more useful information than the cumulative-effect or prospective approaches. [2] The rationale is that changing the prior statements so that they are on the same basis as the newly adopted policy results in greater consistency across accounting periods. Users can then better compare results from one period to the next.

What Do the Numbers Mean?

Comparison Challenges—Squared

As discussed in the opening story, accounting changes create comparability (consistency) challenges when evaluating a company over time. This explains the importance of accounting rules that ensure investors have the information to understand accounting reports prepared under different sets of rules. However, the comparability challenges can be compounded by both the number of required accounting changes as well as the variation in implementation dates. The following table provides a summary of recent accounting standards and their effective dates.

Effective Date, Year Beginning	Standards
January 1, 2019	<i>IFRS 16 Leases</i>
January 1, 2019	<i>IAS 12 Income Taxes</i> —Income tax consequences of payments on financial instruments classified as equity
January 1, 2020	<i>Definition of Material</i> (Amendments to <i>IAS 1</i> and <i>IAS 8</i>)
January 1, 2020	<i>The Conceptual Framework for Financial Reporting</i>
January 1, 2021	<i>IFRS 17 Insurance Contracts</i>

Given the range of new standards coming online (the list in the table is a sampling of new standards that became or will become effective from 2019–2021), it is easy to understand why financial statement users would find it difficult to compare accounting results, to the extent that companies are differentially affected by these new standards. Furthermore, implementation guidance for some standards allows companies to adopt early if they wish. This is the case for the changes in rules for leases in the table above. This early-adoption option further magnifies the comparability challenges in the wake of new standards.

Source: Adapted from Ernst & Young, “IFRS Update of Standards and Interpretations,” *EY Core Tools* (March 31, 2019).

Retrospective Accounting Change Approach

A presumption exists that once a company adopts an accounting policy, it should not change. That presumption is understandable, given the idea that consistent use of an accounting policy enhances the usefulness of financial statements. [3] However, the environment continually changes, and companies change in response. Recent changes in standards, such as those for borrowing costs, operating segments, revenue recognition, and financial instruments, indicate that changes in accounting policies will continue to occur.

As a consequence, the IASB permits companies to change an accounting policy if:

1. It is required by IFRS (e.g., the IFRS on financial instruments is subject to the proper accounting for changes in accounting policy); or
2. It results in the financial statements providing more representationally faithful and relevant information about a company’s financial position, financial performance, and cash flows. For example, a company may determine that changing from the average-cost method of inventory valuation to the FIFO method provides more representationally faithful and relevant information on the current value of its inventory.¹

When a company changes an accounting policy, it should report the change using retrospective application. In general terms, here is what the company must do:

1. Adjust (recast) its financial statements for each prior period presented. Thus, financial statement information about prior periods is consistent with the new accounting policy.
2. Adjust the carrying amounts of assets and liabilities as of the beginning of the first year presented. These accounts reflect the cumulative effect of the change to new accounting policy on periods prior to those presented. The company also makes an offsetting adjustment to the opening balance of retained earnings or other appropriate component of equity or net assets as of the beginning of the first year presented.

For example, assume that **Carrefour** (FRA) decides to change its inventory valuation method in 2022 from FIFO to average-cost. It provides comparative information for 2020 and 2021 based on the new method (see **Underlying Concepts**). Carrefour would adjust its assets, liabilities, and retained earnings for periods prior to 2020 and report these amounts in the 2020 financial statements, when it prepares comparative financial statements.

Underlying Concepts

Retrospective application contributes to comparability (consistency).

Retrospective Accounting Change: Long-Term Contracts

To illustrate the retrospective approach, assume that Denson SA has accounted for its income from long-term construction contracts using the cost-recovery (zero-profit) method. In 2022, as a result of adopting the new revenue standard, the company changed to recognizing revenue over time (percentage-of-completion). For tax purposes, the company uses the cost-recovery method and plans to continue doing so in the future. (We assume a 40 percent enacted tax rate.)

Illustration 22.1 shows portions of three income statements for 2020–2022—for both the cost-recovery and percentage-of-completion methods. (There were no differences in income between the old and new accounting methods before 2020.)

Cost-Recovery Method Denson SA Income Statement (partial) For the Year Ended December 31			
	2020	2021	2022
Income before income tax	€400,000	€160,000	€190,000
Income tax (40%)	160,000	64,000	76,000
Net income	€240,000	€ 96,000	€114,000

Percentage-of-Completion Method Denson SA Income Statement (partial) For the Year Ended December 31			
	2020	2021	2022
Income before income tax	€600,000	€180,000	€200,000
Income tax (40%)	240,000	72,000	80,000
Net income	€360,000	€108,000	€120,000

ILLUSTRATION 22.1 Comparative Income Statements for Cost-Recovery versus Percentage-of-Completion Methods

To record a change from the cost-recovery to the percentage-of-completion method, we analyze the various effects, as Illustration 22.2 shows.

Year	Pretax Income from		Difference in Income		
	Percentage-of-Completion	Cost-Recovery	Difference	Tax Effect 40%	Income Effect (net of tax)
Prior to 2021	€600,000	€400,000	€200,000	€80,000	€120,000
In 2021	180,000	160,000	20,000	8,000	12,000
Total at beginning of 2022	€780,000	€560,000	€220,000	€88,000	€132,000
Total in 2022	€200,000	€190,000	€ 10,000	€ 4,000	€ 6,000

ILLUSTRATION 22.2 Data for Retrospective Change Example

The entry to record the change at the beginning of 2022 would be:

Construction in Process	220,000	
Deferred Tax Liability		88,000
Retained Earnings		132,000

The Construction in Process account increases by €220,000 (as indicated in the first column under “Difference in Income” in Illustration 22.2). The credit to Retained Earnings of €132,000 reflects the cumulative income effects prior to 2022 (third column under “Difference in Income” in Illustration 22.2). The company credits Retained Earnings because prior years’ income is closed to this account each year. The credit to Deferred Tax Liability represents the adjustment to prior years’ tax expense. The company now recognizes that amount, €88,000, as a tax liability for future taxable amounts. That is, in future periods, taxable income will be higher than book income as a result of current temporary differences. Therefore, Denson must report a deferred tax liability in the current year.

Reporting a Change in Policy

The disclosure of changes in accounting policies is particularly important. Financial statement users want consistent information from one period to the next. Such consistency ensures the usefulness of financial statements. The major disclosure requirements are as follows.

1. The nature of the change in accounting policy;
2. The reasons why applying the new accounting policy provides representationally faithful and more relevant information;
3. For the current period and each prior period presented, to the extent practicable, the amount of the adjustment:
 - a. For each financial statement line item affected; and
 - b. Basic and diluted earnings per share.
4. The amount of the adjustment relating to periods before those presented, to the extent practicable.²

The disclosure here relates to a voluntary change in accounting policy, such as a change from the average-cost to FIFO method of inventory measurement. The requirements for disclosure are slightly different if the change is mandated by the issuance of a new IFRS. In that case, transitional adjustments are also considered, as required by the standard.

To illustrate, Denson will prepare comparative financial statements for 2021 and 2022 using the percentage-of-completion method (the new-construction accounting method). [Illustration 22-3](#) indicates how Denson presents this information.

Denson SA Income Statement (partial) For the Year Ended		
	2022	2021
		As adjusted (Note A)
Income before income tax	€200,000	€180,000
Income tax (40%)	<u>80,000</u>	<u>72,000</u>
Net income	<u>€120,000</u>	<u>€108,000</u>

Note A: Change in Method of Accounting for Long-Term Contracts. The company has accounted for revenue and costs for long-term construction contracts by the percentage-of-completion (over time) method in 2022, whereas in all prior years revenue and costs were determined by the cost-recovery method (point in time). The new method of accounting for long-term contracts was adopted to recognize ... [state justification for change in accounting policy] ..., and financial statements of prior years have been restated to apply the new method retrospectively. For income tax purposes, the cost-recovery method has been continued. The effect of the accounting change on 2022 income was an increase of €6,000 net of related taxes, and, as previously reported, the effect on 2021 income was an increase of €12,000 net of related taxes. The balances of retained earnings for 2021 and 2022 have been adjusted for the effect of applying retrospectively the new method of accounting. As a result of the accounting change, retained earnings as of January 1, 2021, increased by €120,000 compared to that reported using the cost-recovery method.

ILLUSTRATION 22.3 Comparative Information Related to Accounting Change (Percentage-of-Completion)

As [Illustration 22.3](#) shows, Denson SA reports net income under the newly adopted percentage-of-completion method for both 2021 and 2022. The company retrospectively adjusted the 2021 income statement to report the information on a percentage-of-completion basis. Also, the note to the financial statements indicates the nature of the change, why the company made the change, and the years affected.

In addition, companies are required to provide data on important differences between the amounts reported under percentage-of-completion versus cost-recovery. When identifying the significant differences, some companies show the *entire* financial statements and line-by-line differences between the two methods. However, most companies will show only line-by-line differences. For example, Denson would show the differences in construction in process, retained earnings, gross profit, and net income for 2021 and 2022 under the cost-recovery and percentage-of-completion methods.

Retained Earnings Adjustment

As indicated earlier, one of the disclosure requirements is to show the cumulative effect of the change on retained earnings, beginning with the earliest period presented. For Denson SA, that date is January 1, 2021. Denson disclosed that information by means of a narrative description (see Note A in [Illustration 22.3](#)). Denson also would disclose this information in its retained earnings statement. Assuming a retained earnings balance of €1,360,000 at the beginning of 2020, [Illustration 22.4](#) shows Denson's retained earnings statement under the cost-recovery method—that is, before giving effect to the change in accounting policy. (The income information comes from [Illustration 22.1](#).)

Denson SA Retained Earnings Statement For the Year Ended			
	2022	2021	2020
Retained earnings, January 1	€1,696,000	€1,600,000	€1,360,000
Net income	114,000	96,000	240,000
Retained earnings, December 31	€1,810,000	€1,696,000	€1,600,000

ILLUSTRATION 22.4 Retained Earnings Statement before Retrospective Change

If Denson presents comparative statements for 2021 and 2022 under percentage-of-completion, then it must change the beginning balance of retained earnings at January 1, 2021. The difference between the retained earnings balances under cost-recovery and percentage-of-completion is computed as follows.

Retained earnings, January 1, 2021 (percentage-of-completion)	€1,720,000
Retained earnings, January 1, 2021 (cost-recovery)	1,600,000
Cumulative-effect difference	€ 120,000

The €120,000 difference is the cumulative effect. Illustration 22.5 shows a comparative retained earnings statement for 2021 and 2022, giving effect to the change in accounting policy to percentage-of-completion.

Denson SA Retained Earnings Statement For the Year Ended			
	2022	2021	
Retained earnings, January 1, as reported	—	€1,600,000	
Add: Adjustment for the cumulative effect on prior years of applying retrospectively the new method of accounting for construction contracts			120,000
Retained earnings, January 1, as adjusted	€1,828,000	1,720,000	
Net income	120,000	108,000	
Retained earnings, December 31	€1,948,000	€1,828,000	

ILLUSTRATION 22.5 Retained Earnings Statement after Retrospective Application

Denson adjusted the beginning balance of retained earnings on January 1, 2021, for the excess of percentage-of-completion net income over cost-recovery net income in 2020. This comparative presentation indicates the type of adjustment that a company needs to make. It follows that this adjustment would be much larger if a number of prior periods were involved.

Retrospective Accounting Change: Inventory Methods

As a second illustration of the retrospective approach, assume that Lancer Company has accounted for its inventory using the average-cost method. In 2022, the company changes to the FIFO method because management believes this approach provides a more appropriate measure

of its inventory costs. **Illustration 22.6** provides additional information related to Lancer Company.

1. Lancer Company started its operations on January 1, 2020. At that time, shareholders invested \$100,000 in the business in exchange for ordinary shares.

2. All sales, purchases, and operating expenses for the period 2020–2022 are cash transactions. Lancer's cash flows over this period are as follows.

	2020	2021	2022
Sales	\$300,000	\$300,000	\$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Cash flow from operations	\$110,000	\$ 90,000	\$ 75,000

3. Lancer has used the average-cost method for financial reporting since its inception.

4. Inventory determined under average-cost and FIFO for the period 2020–2022 is as follows.

	Average-Cost Method	FIFO Method	Difference
January 1, 2020	\$ 0	\$ 0	\$ 0
December 31, 2020	10,000	12,000	2,000
December 31, 2021	20,000	25,000	5,000
December 31, 2022	32,000	39,000	7,000

5. Cost of goods sold under average-cost and FIFO for the period 2020–2022 is as follows.

	Cost of Goods Sold		
	Average-Cost	FIFO	Difference
2020	\$ 80,000	\$ 78,000	\$2,000
2021	100,000	97,000	3,000
2022	113,000	111,000	2,000

6. Earnings per share information is not required on the income statement.

7. All tax effects for this illustration should be ignored.

ILLUSTRATION 22.6 Lancer Company Information

Illustration 22.7 shows Lancer Company's income statement, retained earnings statement, statement of financial position, and statement of cash flows for 2020–2022 under average-cost.

Lancer Company Income Statement For the Year Ended December 31			
	2020	2021	2022
Sales	\$300,000	\$300,000	\$300,000
Cost of goods sold (average-cost)	80,000	100,000	113,000
Operating expenses	100,000	100,000	100,000
Net income	\$120,000	\$100,000	\$ 87,000
Lancer Company Retained Earnings Statement For the Year Ended December 31			
	2020	2021	2022
Retained earnings (beginning)	\$ 0	\$120,000	\$220,000
Add: Net income	120,000	100,000	87,000
Retained earnings (ending)	\$120,000	\$220,000	\$307,000
Lancer Company Statement of Financial Position At December 31			
	2020	2021	2022
Inventory (average-cost)	\$ 10,000	\$ 20,000	\$ 32,000
Cash	210,000	300,000	375,000
Total assets	\$220,000	\$320,000	\$407,000
Share capital	\$100,000	\$100,000	\$100,000
Retained earnings	120,000	220,000	307,000
Total equity	\$220,000	\$320,000	\$407,000
Lancer Company Statement of Cash Flows For the Year Ended December 31			
	2020	2021	2022
Cash flows from operating activities			
Sales	\$300,000	\$300,000	\$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Net cash provided by operating activities	110,000	90,000	75,000
Cash flows from financing activities Issuance of ordinary shares	100,000	—	—
Net increase in cash	210,000	90,000	75,000
Cash at beginning of year	0	210,000	300,000
Cash at end of year	\$210,000	\$300,000	\$375,000

ILLUSTRATION 22.7 Lancer Financial Statements (Average-Cost)

As [Illustration 22.7](#) indicates, under average-cost Lancer Company reports \$120,000 net income in 2020, \$100,000 net income in 2021, and \$87,000 net income in 2022. The amount of inventory reported on Lancer's statement of financial position reflects average-cost inventory accounting.

[Illustration 22.8](#) shows Lancer's income statement, retained earnings statement, statement of financial position, and statement of cash flows for 2020–2022 under **FIFO**. You can see that **the cash flow statement under FIFO is the same as under average-cost**. Although the net incomes are different in each period, there is no cash flow effect from these differences in net income. (If we considered income taxes, a cash flow effect would result.)

Lancer Company Income Statement For the Year Ended December 31			
	2020	2021	2022
Sales	\$300,000	\$300,000	\$300,000
Cost of goods sold (FIFO)	78,000	97,000	111,000
Operating expenses	100,000	100,000	100,000
Net income	\$122,000	\$103,000	\$ 89,000
Lancer Company Retained Earnings Statement For the Year Ended December 31			
	2020	2021	2022
Retained earnings (beginning)	\$ 0	\$122,000	\$225,000
Add: Net income	122,000	103,000	89,000
Retained earnings (ending)	\$122,000	\$225,000	\$314,000
Lancer Company Statement of Financial Position At December 31			
	2020	2021	2022
Inventory (FIFO)	\$ 12,000	\$ 25,000	\$ 39,000
Cash	210,000	300,000	375,000
Total assets	\$222,000	\$325,000	\$414,000
Share capital	\$100,000	\$100,000	\$100,000
Retained earnings	122,000	225,000	314,000
Total equity	\$222,000	\$325,000	\$414,000
Lancer Company Statement of Cash Flows For the Year Ended December 31			
	2020	2021	2022
Cash flows from operating activities			
Sales	\$300,000	\$300,000	\$300,000
Purchases	90,000	110,000	125,000
Operating expenses	100,000	100,000	100,000
Net cash provided by operating activities	110,000	90,000	75,000
Cash flows from financing activities Issuance of ordinary shares	100,000	—	—
Net increase in cash	210,000	90,000	75,000
Cash at beginning of year	0	210,000	300,000
Cash at end of year	\$210,000	\$300,000	\$375,000

ILLUSTRATION 22.8 Lancer Financial Statements (FIFO)

Compare the financial statements reported in [Illustration 22.7](#) and [Illustration 22.8](#). You can see that, under retrospective application, the change to FIFO inventory valuation affects reported inventories, cost of goods sold, net income, and retained earnings. In the following sections, we discuss the accounting and reporting of Lancer's accounting change from average-cost to FIFO.

Given the information provided in [Illustrations 22.6, 22.7, and 22.8](#), we now are ready to account for and report on the accounting change.

Our first step is to adjust the financial records for the change from average-cost to FIFO. To do so, we perform the analysis in [Illustration 22.9](#).

Year	Net Income		Difference in Income
	Average-Cost	FIFO	
2020	\$120,000	\$122,000	\$2,000
2021	100,000	103,000	3,000
Total at beginning of 2022	\$220,000	\$225,000	\$5,000
Total in 2022	\$ 87,000	\$ 89,000	\$2,000

ILLUSTRATION 22.9 Data for Recording Change in Accounting Policy

The entry to record the change to the FIFO method at the beginning of 2022 is as follows.

Inventory	5,000	
Retained Earnings		5,000

The change increases the inventory account by \$5,000. This amount represents the difference between the ending inventory at December 31, 2021, under average-cost (\$20,000) and the ending inventory under FIFO (\$25,000). The credit to Retained Earnings indicates the amount needed to change the income from prior years, assuming that Lancer had used FIFO in previous periods.

Reporting a Change in Policy

Lancer Company will prepare comparative financial statements for 2021 and 2022 using FIFO (the new inventory method). [Illustration 22.10](#) indicates how Lancer might present this information.

Lancer Company Income Statement For the Year Ended December 31						
	2022			2021		
Sales	\$300,000			\$300,000		
Cost of goods sold	111,000			97,000		
Operating expenses	100,000			100,000		
Net income	<u>\$ 89,000</u>			<u>\$103,000</u>		

Nature and reason for change and description of prior period information adjusted

Note A: Change in Method of Accounting for Inventory Valuation. On January 1, 2022, Lancer Company elected to change its method of valuing its inventory to the FIFO method; in all prior years, inventory was valued using the average-cost method. The Company adopted the new method of accounting for inventory to better report cost of goods sold in the year incurred. Comparative financial statements of prior years have been adjusted to apply the new method retrospectively. The following financial statement line items for years 2022 and 2021 were affected by the change in accounting policy.

	2022			2021		
Statement of Financial Position	Average-Cost	FIFO	Difference	Average-Cost	FIFO	Difference
Inventory	\$ 32,000	\$ 39,000	\$7,000	\$ 20,000	\$ 25,000	\$5,000
Retained earnings	307,000	314,000	7,000	220,000	225,000	5,000
Income Statement						
Cost of goods sold	\$113,000	\$111,000	\$2,000	\$100,000	\$ 97,000	\$3,000
Net income	87,000	89,000	2,000	100,000	103,000	3,000
Statement of Cash Flows						
(no effect)						

Effect of change on each financial statement affected

Cumulative effect on retained earnings

As a result of the accounting change, retained earnings as of January 1, 2021, increased from \$120,000, as originally reported using the average-cost method, to \$122,000 using the FIFO method.

ILLUSTRATION 22.10 Comparative Information Related to Accounting Change (FIFO)

As [Illustration 22.10](#) shows, Lancer Company reports net income under the newly adopted FIFO method for both 2021 and 2022. The company retrospectively adjusted the 2021 income statement to report the information on a FIFO basis. In addition, the note to the financial statements indicates the nature of the change, why the company made the change, and the years affected. The note also provides data on important differences between the amounts reported under average-cost versus FIFO. (When identifying the significant differences, some companies show the *entire* financial statements and line-by-line differences between average-cost and FIFO.)

Retained Earnings Adjustment

As indicated earlier, one of the disclosure requirements is to show the cumulative effect of the change on retained earnings as of the beginning of the earliest period presented. For Lancer Company, that date is January 1, 2021. Lancer disclosed that information by means of a narrative description (see Note A in [Illustration 22.10](#)). Lancer also would disclose this information in its retained earnings statement. [Illustration 22.11](#) shows Lancer's retained earnings statement under average-cost—that is, before giving effect to the change in accounting policy. (This information comes from [Illustration 22.7](#).)

	2022	2021	2020
Retained earnings, January 1	\$220,000	\$120,000	\$ 0
Net income	87,000	100,000	120,000
Retained earnings, December 31	<u>\$307,000</u>	<u>\$220,000</u>	<u>\$120,000</u>

ILLUSTRATION 22.11 Retained Earnings Statements (Average-Cost)

If Lancer presents comparative statements for 2021 and 2022 under FIFO, then it must change the beginning balance of retained earnings at January 1, 2021. The difference between the retained earnings balances under average-cost and FIFO is computed as follows.

Retained earnings, January 1, 2021 (FIFO)	\$122,000
Retained earnings, January 1, 2021 (average-cost)	120,000
Cumulative effect difference	\$ 2,000

The \$2,000 difference is the cumulative effect. **Illustration 22.12** shows a comparative retained earnings statement for 2021 and 2022, demonstrating the effect of the change in accounting policy to FIFO.

	2022	2021
Retained earnings, January 1, as reported		\$120,000
Add: Adjustment for the cumulative effect on prior years of applying retrospectively the new method of accounting for inventory		2,000
Retained earnings, January 1, as adjusted	\$225,000	122,000
Net income	89,000	103,000
Retained earnings, December 31	<u>\$314,000</u>	<u>\$225,000</u>

ILLUSTRATION 22.12 Retained Earnings Statements after Retrospective Application

Lancer adjusted the beginning balance of retained earnings on January 1, 2021, for the excess of FIFO net income over average-cost net income in 2020. This comparative presentation indicates the type of adjustment that a company needs to make. It follows that the amount of this adjustment would be much larger if a number of prior periods were involved.

Direct and Indirect Effects of Changes

Are there other effects that a company should report when it makes a change in accounting policy? For example, when a company like Lancer has a bonus plan based on net income and the prior year's net income changes, what happens when FIFO is retrospectively applied? Should Lancer also change the reported amount of bonus expense? What happens if we do not ignore income taxes in the Lancer example? Should Lancer adjust net income, given that taxes will be different under average-cost and FIFO in prior periods? The answers depend on whether the effects are direct or indirect.

Direct Effects

The IASB takes the position that companies should retrospectively apply the **direct effects of a change in accounting policy**. An example of a **direct effect** is an adjustment to an inventory balance as a result of a change in the inventory valuation method. For example,

Lancer Company should change the inventory amounts in prior periods to indicate the change to the FIFO method of inventory valuation. Another inventory-related example would be an impairment adjustment resulting from applying the lower-of-cost-or-net realizable value test to the adjusted inventory balance. Related changes, such as deferred income tax effects of the impairment adjustment, are also considered direct effects. This entry was illustrated in the Denson example, in which the change to percentage-of-completion accounting resulted in recording a deferred tax liability.

Indirect Effects

In addition to direct effects, companies can have **indirect effects related to a change in accounting policy**. An **indirect effect** is any change to current or future cash flows of a company that result from making a change in accounting policy that is applied retrospectively. An example of an indirect effect is a change in profit-sharing or royalty payment that is based on a reported amount such as revenue or net income. The IASB is silent on what to do in this situation. U.S. GAAP (likely because its standard in this area was issued after *IAS 8*) states that indirect effects do not change prior period amounts.

For example, let's assume that Lancer has an employee profit-sharing plan based on net income. As [Illustration 22.9](#) showed, Lancer would report higher income in 2021 and 2022 under the FIFO method. In addition, let's assume that the profit-sharing plan requires that Lancer pay the incremental amount due based on the FIFO income amounts. In this situation, Lancer reports this additional expense **in the current period**; it would not change prior periods for this expense. If the company prepares comparative financial statements, it follows that it does not recast the prior periods for this additional expense.³

If the terms of the profit-sharing plan indicate that *no payment is necessary* in the current period due to this change, then the company need not recognize additional profit-sharing expense in the current period. Neither does it change amounts reported for prior periods.

When a company recognizes the indirect effects of a change in accounting policy, it includes in the financial statements a description of the indirect effects. In doing so, it discloses the amounts recognized in the current period and related per share information.

Impracticability

It is not always possible for companies to determine how they would have reported prior periods' financial information under retrospective application of an accounting policy change. Retrospective application is considered **impracticable** if a company cannot determine the prior period effects using every reasonable effort to do so.

Companies should not use retrospective application if one of the following conditions exists:

1. The company cannot determine the effects of the retrospective application.
2. Retrospective application requires assumptions about management's intent in a prior period.
3. Retrospective application requires significant estimates for a prior period, and the company cannot objectively verify the necessary information to develop these estimates.

If any of the above conditions exists, it is deemed impracticable to apply the retrospective approach. In this case, the company **prospectively applies** the new accounting policy at the earliest feasible date. [\[6\]](#)

For example, assume that Williams Company changed its accounting policy for depreciable assets to more fully apply component depreciation under revaluation accounting. Unfortunately, the company does not have detailed accounting records to establish a basis for the components of these assets. As a result, Williams determines it is not practicable to account for the change to full component depreciation using the retrospective application approach. It therefore applies the policy prospectively, starting at the beginning of the current year.

Williams must disclose only the effect of the change on the results of operations in the period of change. Also, the company should explain the reasons for omitting the computations of the cumulative effect for prior years. Finally, it should disclose the justification for the change to component depreciation. [7]

Changes in Accounting Estimates

LEARNING OBJECTIVE 2

Describe the accounting and reporting for changes in estimates.

To prepare financial statements, companies must estimate the effects of future conditions and events. For example, the following items require estimates.

1. Bad debts.
2. Inventory obsolescence.
3. Useful lives and residual values of assets.
4. Periods benefited by deferred costs.
5. Liabilities for warranty costs and income taxes.
6. Recoverable mineral reserves.
7. Change in depreciation estimates.
8. Fair value of financial assets or financial liabilities.

A company cannot perceive future conditions and events and their effects with certainty. Therefore, estimating requires the exercise of judgment. Accounting estimates will change as new events occur, as a company acquires more experience, or as it obtains additional information.

Prospective Reporting

Companies report prospectively changes in accounting estimates. That is, companies should not adjust previously reported results for changes in estimates. Instead, they account for the effects of all changes in estimates in (1) the period of change if the change affects that period only (e.g., a change in the estimate of the amount of bad debts affects only the current period's income), or (2) the period of change and future periods if the change affects both (e.g., a change in the estimated useful life of a depreciable asset affects depreciation expense in the current and future periods). [8] The IASB views changes in estimates as **normal recurring corrections and adjustments**, the natural result of the accounting process. It prohibits retrospective treatment.

The circumstances related to a change in estimate differ from those for a change in accounting policy. If companies reported changes in estimates retrospectively, continual adjustments of

prior years' income would occur. It seems proper to accept the view that, because new conditions or circumstances exist, the revision fits the new situation (not the old one). Companies should therefore handle such a revision in the current and future periods.

To illustrate, Lao Labs purchased for ¥3,000,000 a building that it originally estimated to have a useful life of 15 years and no residual value. It recorded depreciation for five years on a straight-line basis. On January 1, 2022, Lao Labs revises the estimate of the useful life. It now considers the asset to have a total life of 25 years. (Assume that the useful life for financial reporting and tax purposes and depreciation method are the same.) **Illustration 22.13** shows the accounts at the beginning of the sixth year.

Buildings	¥3,000,000
Less: Accumulated depreciation—buildings ($5 \times ¥200,000$)	1,000,000
Book value of building	<u>¥2,000,000</u>

ILLUSTRATION 22.13 Book Value After Five Years' Depreciation

Lao Labs records depreciation for the year 2022 as follows.

Depreciation Expense	100,000
Accumulated Depreciation—Building	100,000

The company computes the ¥100,000 depreciation charge as shown in **Illustration 22.14**.

$$\text{Depreciation Charge} = \frac{\text{Book Value of Asset}}{\text{Remaining Service Life}} = \frac{¥2,000,000}{25 \text{ years} - 5 \text{ years}} = ¥100,000$$

ILLUSTRATION 22.14 Depreciation After Change in Estimate

Companies sometimes find it difficult to differentiate between a change in estimate and a change in accounting policy. Is it a change in policy or a change in estimate when a company changes from deferring and amortizing marketing costs to expensing them as incurred because future benefits of these costs have become doubtful? **If it is impossible to determine whether a change in policy or a change in estimate has occurred, the rule is this: Consider the change as a change in estimate.**

Another example is a change in depreciation (as well as amortization or depletion) methods. Because companies change depreciation methods based on changes in estimates about future benefits from long-lived assets, it is not possible to separate the effect of the accounting policy change from that of the estimates. **As a result, companies account for a change in depreciation methods as a change in estimate.**

A similar problem occurs in differentiating between a change in estimate and a correction of an error, although here the answer is more clear-cut. How does a company determine whether it overlooked the information in earlier periods (an error) or whether it obtained new information (a change in estimate)? Proper classification is important because the accounting treatment differs for corrections of errors versus changes in estimates. The general rule is this: **Companies should consider careful estimates that later prove to be incorrect as changes in estimates.** Only when a company obviously computed the estimate incorrectly because of lack of expertise or in bad faith should it consider the adjustment an error. There is no clear demarcation line here. Companies must use good judgment in light of all the circumstances.

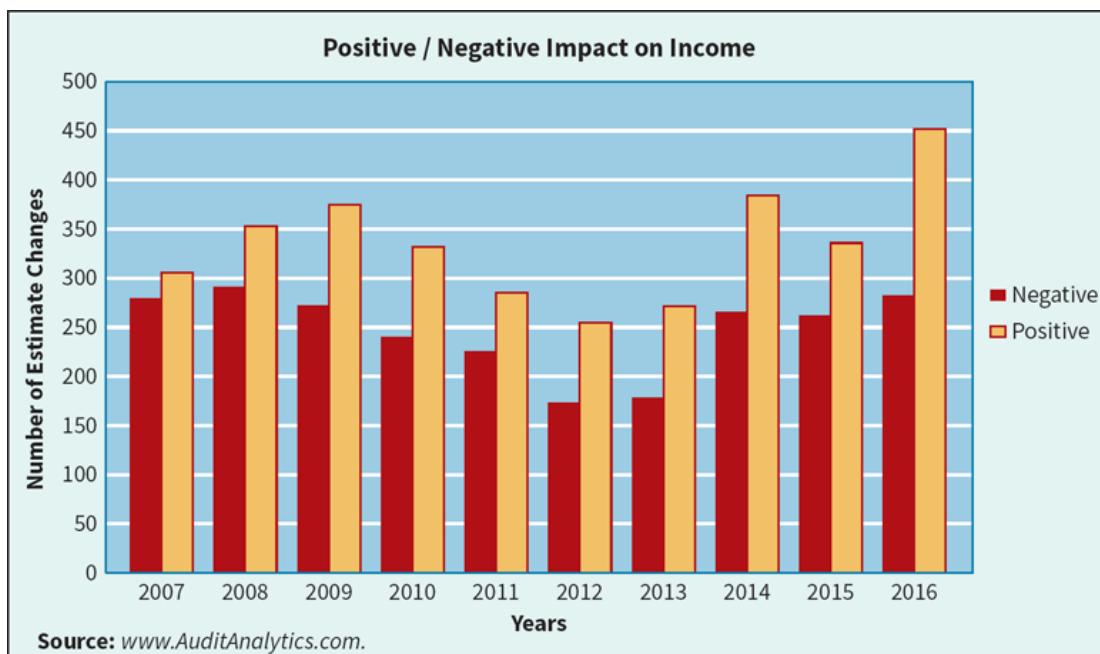
What Do the Numbers Mean?

A Change for the Better?

As we have discussed, changes in accounting estimates are expected in any given year, as conditions change. The following table indicates the 10 most common changes in accounting estimates for a sampling of 10,000 accounting changes from 2000 to 2017 for large companies.

Top 10 Categories of Changes in Accounting Estimates	
Estimate Category	% of Total
Depreciation, amortization, and depletion	22%
Percentage-of-completion and contract revenue recognition	12
Restructuring reserves	10
Income taxes, including valuation allowance	7
Contingencies and commitments, including litigation	6
Share-based compensation	5
Revenue recognition	5
Pension and other post-retirement benefits	4
Insurance loss reserves	4
Asset retirement obligations	3

The hope is that management changes accounting estimates in order to make the financial statements more useful. However, the following chart indicates that in each of the past eight years, the result of the accounting estimate change was an increase in income.



It appears that management may be making changes in estimates in order to make financial results look better, not more useful. If so, this violates the concept of neutrality.

Source: Adapted from Accounting change and restatement data from J. Pakaluka, “Overview of 17 Years of Changes in Accounting Estimates,” *Audit Analytics* (October 24, 2017).

Disclosures

A company should disclose the nature and amount of a change in an accounting estimate that has an effect in the current period or is expected to have an effect in future periods (unless it is impracticable to estimate that effect). [9] [Illustration 22.15](#) shows disclosure of a change in estimated useful lives, which appeared in a recent annual report of **Portugal Telecom, SGPS, S.A.** (PRT).



Portugal Telecom, SGPS, S.A.

Note 4 (in Part): Changes in Accounting Policies and Estimates

The change in estimate of the useful life of the UMTS license was effective as at June 30. According to IAS 8 this change should be applicable on a prospective basis and, on an annual basis, the impact of this change will be a reduction in depreciation and amortization costs by €26 million.

[ILLUSTRATION 22.15](#) Disclosure of Change in Estimated Useful Lives

For the most part, companies need not disclose changes in accounting estimates made as part of normal operations, such as bad debt allowances or inventory obsolescence, unless such changes are material.

Accounting Errors

LEARNING OBJECTIVE 3

Describe the accounting for correction of errors.

No business, large or small, is immune from errors. As the opening story discussed, the number of accounting errors that lead to restatement has declined. However, without accounting and disclosure guidelines for the reporting of errors, investors can be left in the dark about the effects of errors.

Certain errors, such as misclassifications of balances within a financial statement, are not as significant to investors as other errors. For example, significant errors include those resulting in overstating assets or income. However, investors should know the potential impact of all errors. Even “harmless” misclassifications can affect important ratios. Also, some errors could signal important weaknesses in internal controls that could lead to more significant errors.

In general, accounting errors include the following types:

1. A change from an accounting policy that is **not** generally accepted to an accounting policy that is acceptable. The rationale is that the company incorrectly presented prior periods

because of the application of an improper accounting policy. For example, a company may change from the cash (income tax) basis of accounting to the accrual basis.

2. Mathematical mistakes, such as incorrectly totaling the inventory count sheets when computing the inventory value.
3. Changes in estimates that occur because a company did not prepare the estimates in good faith. For example, a company may have adopted a clearly unrealistic depreciation rate.
4. An oversight, such as the failure to accrue or defer certain expenses and revenues at the end of the period.
5. A misuse of facts, such as the failure to use residual value in computing the depreciation base for the straight-line approach.
6. The incorrect classification of a cost as an expense instead of an asset, and vice versa.

Accounting errors occur for a variety of reasons. [**Illustration 22.16**](#) indicates 11 major categories of accounting errors that drive restatements.

Accounting Category	Type of Restatement
Expense recognition	Recording expenses in the incorrect period or for an incorrect amount.
Revenue recognition	Improper revenue accounting, including instances in which revenue was improperly recognized, questionable revenues were recognized, or any other number of related errors occurred that led to misreported revenue.
Misclassification	Misclassifying significant accounting items on the statement of financial position, income statement, or statement of cash flows. These include restatements due to misclassification of current or non-current accounts or those that impact cash flows from operations.
Equity—other	Improper accounting for EPS, restricted shares, warrants, and other equity instruments.
Reserves/Contingencies	Errors involving accounts receivables' bad debts, inventory reserves, income tax allowances, and loss contingencies.
Long-lived assets	Asset impairments of property, plant, and equipment; goodwill; or other related items.
Taxes	Errors involving correction of tax provision, improper treatment of tax liabilities, and other tax-related items.
Equity—other comprehensive income	Improper accounting for comprehensive income equity transactions, including foreign currency items, revaluations of plant assets, unrealized gains and losses on certain investments in debt, equity securities, and derivatives.
Inventory	Inventory costing valuations, quantity issues, and cost of sales adjustments.
Equity—share options	Improper accounting for employee share options.
Other	Any restatement not covered by the listed categories, including those related to improper accounting for acquisitions or mergers.

Sources: T. Baldwin and D. Yoo, "Restatements—Traversing Shaky Ground," *Trend Alert*, Glass Lewis & Co. (June 2, 2005), p. 8; and "2018 Financial Restatements: An Eighteen Year Comparison," *Audit Analytics Trend Reports* (August 26, 2019).

ILLUSTRATION 22.16 Accounting-Error Types

As soon as a company discovers an error, it must correct it. Companies record **corrections of errors** from prior periods as an adjustment to the beginning balance of retained earnings in the current period. Such corrections are called **prior period adjustments**.

If it presents comparative statements, a company should restate the prior statements affected to correct for the error.⁴ The company need not repeat the disclosures in the financial statements of subsequent periods.

Example of Error Correction

To illustrate, in 2023 the bookkeeper for Selectro plc discovered an error: In 2022, the company failed to record £20,000 of depreciation expense on a newly constructed building. This building is the only depreciable asset Selectro owns. The company correctly included the depreciation expense in its tax return and correctly reported its income taxes payable. **Illustration 22.17**

presents Selectro's income statement for 2022 (starting with income before depreciation expense) with and without the error.

Selectro plc Income Statement For the Year Ended December 31, 2022			
		Without Error	With Error
Income before depreciation expense		£100,000	£100,000
Depreciation expense		20,000	0
Income before income tax		80,000	100,000
Current	£32,000		£32,000
Deferred	—0—	32,000	8,000
Net income		£ 48,000	£ 60,000

ILLUSTRATION 22.17 Error Correction Comparison

Illustration 22.18 shows the entries that Selectro should have made and did make for recording depreciation expense and income taxes.

Entries Company Should Have Made (Without Error)			Entries Company Did Make (With Error)		
Depreciation Expense	20,000		No entry made for depreciation		
Accumulated Depreciation—Buildings		20,000			
Income Tax Expense	32,000		Income Tax Expense	40,000	
Income Taxes Payable		32,000	Deferred Tax Liability		8,000
			Income Taxes Payable		32,000

ILLUSTRATION 22.18 Error Entries

As **Illustration 22.18** indicates, the £20,000 omission error in 2022 results in the following effects.

Income Statement Effects
Depreciation expense (2022) is understated £20,000.
Income tax expense (2022) is overstated £8,000 (£20,000 × .40).
Net income (2022) is overstated £12,000 (£20,000 – £8,000).
Statement of Financial Position Effects
Accumulated depreciation—buildings is understated £20,000.
Deferred tax liability is overstated £8,000 (£20,000 × .40).

To make the proper correcting entry in 2023, Selectro should recognize that net income in 2022 is overstated by £12,000, the Deferred Tax Liability is overstated by £8,000, and Accumulated Depreciation—Buildings is understated by £20,000. The entry to correct this error in 2023 is as follows.

Retained Earnings	12,000	
-------------------	--------	--

Deferred Tax Liability	8,000	
Accumulated Depreciation—Buildings		20,000

The debit to Retained Earnings results because net income for 2022 is overstated. The debit to the Deferred Tax Liability is made to remove this account, which was caused by the error. The credit to Accumulated Depreciation—Buildings reduces the book value of the building to its proper amount.

Financial Statement Presentation

To demonstrate how to show this information, assume that Selectro has a beginning retained earnings balance at January 1, 2023, of £350,000. The company reports net income of £400,000 in 2023. [Illustration 22.19](#) shows Selectro's retained earnings statement for 2023.

Selectro plc Retained Earnings Statement For the Year Ended December 31, 2023		
Retained earnings, January 1, as reported		£350,000
Correction of an error (depreciation)	£20,000	
Less: Applicable income tax reduction	8,000	(12,000)
Retained earnings, January 1, as adjusted		338,000
Add: Net income		400,000
Retained earnings, December 31		£738,000

[ILLUSTRATION 22.19](#) Reporting an Error—Retained Earnings Statement

The statement of financial position in 2023 will not have any deferred tax liability related to the building, and Accumulated Depreciation—Buildings is now restated at a higher amount. The income statement would not be affected.

Comparative Statements

If preparing comparative financial statements, a company should make adjustments to correct the amounts for all affected accounts reported in the statements for **all periods** reported. The company should restate the data to the correct basis for each year presented. It should **show any catch-up adjustment as a prior period adjustment to retained earnings for the earliest period it reported**. These requirements are essentially the same as those for reporting a change in accounting policy.

For example, in the case of Selectro, the error of omitting the depreciation of £20,000 in 2022, discovered in 2023, results in the restatement of the 2022 financial statements. [Illustration 22.20](#) shows the accounts that Selectro restates in the 2022 financial statements.

In the statement of financial position:	
Accumulated depreciation—buildings	£20,000 increase
Deferred tax liability	8,000 decrease
Retained earnings, ending balance	12,000 decrease
In the income statement:	
Depreciation expense—buildings	£20,000 increase
Income tax expense	8,000 decrease
Net income	12,000 decrease
In the retained earnings statement:	
Retained earnings, ending balance (due to lower net income for the period)	£12,000 decrease

ILLUSTRATION 22.20 Reporting an Error—Comparative Financial Statements

Selectro prepares the 2023 financial statements in comparative form with those of 2022 **as if the error had not occurred**. In addition, Selectro must disclose that it has restated its previously issued financial statements, and it must describe the nature of the error. Selectro also must disclose the following:

1. The effect of the correction on each financial statement line item and any per share amounts affected for each prior period presented.
2. The cumulative effect of the change on retained earnings or other appropriate components of equity or net assets in the statement of financial position, as of the beginning of the earliest period presented.

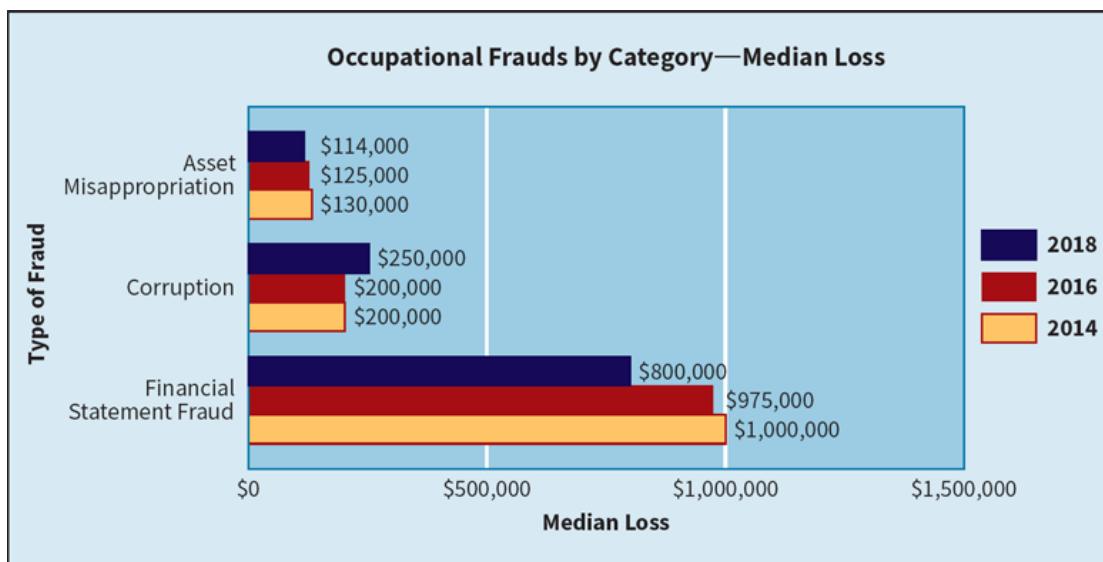
As indicated earlier, it is sometimes impracticable to adjust comparative information for one or more prior periods for changes in accounting policies. It is also sometimes impracticable to correct a prior period error through retrospective restatement. For example, the company may have made errors in computing fringe-benefit amounts in prior years but is unable to now reconstruct this information fully. As a result, any adjustment is made at the beginning of the earliest period for which retrospective application is applicable.

What Do the Numbers Mean?

Guard the Financial Statements!

Restatements sometimes occur because of financial fraud. Financial frauds involve the intentional misstatement or omission of material information in the organization's financial reports. Common methods of financial fraud manipulation include recording fictitious revenues, concealing liabilities or expenses, and artificially inflating reported assets. Financial malfeasance made up around 8 percent of the frauds in a recent study on occupational fraud but caused a median loss of just under \$1 million—by far the most costly category of fraud. The following chart compares loss amounts for 2018, 2016 and 2014 for financial statement fraud, corruption, and asset misappropriation.

While the trend in the dollar amount of losses is going in the right direction, another recent study indicates that the number of fraud reports at 1,400 companies in the "Quarterly Corporate Fraud Index" has climbed—from 2,348 reported frauds 10 years ago to over 7,800 in a recent quarter. While there is some debate about whether the reporting of fraud has increased because of regulation that provides whistleblower protections (i.e., the incidence of fraud is not increasing as much as the reporting of fraud), companies must increase their efforts to protect their statements from the negative effects of fraud.



Sources: C. McDonald, "Fraud Reports Climb Still Higher," [CFO.com](#) (September 26, 2012); and *Report to the Nations on Occupational Fraud and Abuse, 2018 Global Fraud Study*, Association of Certified Fraud Examiners (2018).

Summary of Accounting Changes and Correction of Errors

Having guidelines for reporting accounting changes and corrections has helped resolve several significant and long-standing accounting problems. Yet, because of diversity in situations and characteristics of the items encountered in practice, use of professional judgment is of paramount importance. In applying these guidelines, the primary objective is to serve the users of the financial statements. Achieving this objective requires accuracy and full disclosure, which guard against users making incorrect inferences based on the accounting reports.

Illustration 22.21 summarizes the main distinctions and treatments presented in the discussion in this chapter.

Changes in accounting policy
Employ the retrospective approach by:
a. Changing the financial statements of all prior periods presented.
b. Disclosing in the year of the change the effect on net income and earnings per share for all prior periods presented.
c. Reporting an adjustment to the beginning retained earnings balance in the statement of retained earnings in the earliest year presented.
If impracticable to determine the prior period effect:
a. Do not change prior years' income.
b. Use opening asset balance in the year the method is adopted as the base-year balance for all subsequent computations.
c. Disclose the effect of the change on the current year, and the reasons for omitting the computation of the cumulative effect and amounts for prior years.
Changes in accounting estimate
Employ the current and prospective approach by:
a. Reporting current and future financial statements on the new basis.
b. Presenting prior period financial statements as previously reported.
c. Making no adjustments to current-period opening balances for the effects in prior periods.
Changes due to error
Employ the restatement approach by:
a. Correcting all prior period statements presented.
b. Restating the beginning balance of retained earnings for the first period presented when the error effects occur in a period prior to the first period presented.

ILLUSTRATION 22.21 Summary of Guidelines for Accounting Changes and Errors

Changes in accounting policy are appropriate **only** when a company demonstrates that the newly adopted generally accepted accounting policy is more representationally faithful and relevant than the existing one. Companies and accountants determine usefulness on the basis of whether the new policy constitutes an **improvement in financial reporting**, not on the basis of the income tax effect alone.

But it is not always easy to determine an improvement in financial reporting. **How does one measure preferability or improvement?** For example, a change from average-cost to FIFO because the accounting system is now computerized and has scanning capabilities seems justifiable. However, determining an improved method requires some “standard” or “objective.” Because no universal standard or objective is generally accepted, the problem of determining improvement continues to be difficult and requires good judgment.

What Do the Numbers Mean?

What's Your Motivation?

Difficult as it is to determine which accounting standards have the strongest conceptual support, other complications make the process even more complex. These complications stem from the fact that managers naturally wish to show their company's financial performance in the best light. Research provides insights into why companies may prefer certain accounting methods. Some of these reasons are as follows.

1. **Political costs.** As companies become larger and more politically visible, politicians and regulators devote more attention to them. The larger the firm, the more likely it is to become subject to antitrust regulation, and the more likely it is to be required to pay higher taxes. Therefore, companies that are politically visible may seek to report low income numbers to avoid the scrutiny of regulators. In addition, other constituents, such as labor unions, may be less willing to ask for wage increases if reported income is low. Researchers have found that the larger the company, the more likely it is to adopt income-decreasing approaches in selecting accounting methods.
2. **Capital structure.** A number of studies have indicated that the capital structure of the company can affect the selection of accounting methods. For example, a company with a high debt to equity ratio is more likely to be constrained by debt covenants. The debt covenant may indicate that the company cannot pay dividends if retained earnings fall below a certain level. As a result, such a company is more likely to select accounting methods that will increase net income.
3. **Bonus payments.** Studies have found that if compensation plans tie managers' bonus payments to income, management will select accounting methods that maximize their bonus payments.
4. **Smooth earnings.** Substantial earnings increases attract the attention of politicians, regulators, and competitors. In addition, large increases in income are difficult to achieve in subsequent years. Further, executive compensation plans would use these higher numbers as a baseline and make it difficult for managers to earn bonuses in subsequent years. Conversely, investors and competitors might view large decreases in earnings as a signal that the company is in financial trouble. Also, substantial decreases in income raise concerns on the part of shareholders, lenders, and other interested parties about the competency of management. For all these reasons, companies have an incentive to "manage" or "smooth" earnings. In general, management tends to believe that a steady 10 percent annual growth is much better than a 30 percent growth one year and a 10 percent decline the next. In other words, managers usually prefer a gradually increasing income report and sometimes change accounting methods to ensure such a result.

Management pays careful attention to the accounting it follows and often changes accounting methods for economic, not conceptual, reasons. As indicated throughout this text, such rationales have become known as **economic consequences** arguments, which focus on the alleged impact of an accounting method on the behavior of investors, creditors, competitors, governments, or managers of the reporting companies themselves. To counter these pressures, standard-setters such as the IASB have declared, as part of their conceptual framework, that they will assess the merits of proposed standards from a position of **neutrality**. They evaluate the soundness of standards on the basis of

conceptual soundness, not on the grounds of possible impact on behavior. It is not the IASB's place to choose standards according to the kinds of behavior it wishes to promote and the kinds it wishes to discourage.

Sources: Ross L. Watts and Jerold L. Zimmerman, "Positive Accounting Theory: A Ten-Year Perspective," *The Accounting Review* (January 1990); and O. Douglas Moses, "Income Smoothing and Incentives: Empirical Tests Using Accounting Changes," *The Accounting Review* (April 1987).

Error Analysis

LEARNING OBJECTIVE 4

Analyze the effect of errors.

In this section, we show some additional types of accounting errors. Companies generally do not correct for errors that do not have a significant effect on the presentation of the financial statements. For example, should a company with a total annual payroll of \$1,750,000 and net income of \$940,000 correct its financial statements if it finds it failed to record accrued wages of \$500? No—it would not consider this error significant (material).

Obviously, defining materiality is difficult, and managers and auditors must use experience and judgment to determine whether adjustment is necessary for a given error. We assume **all errors discussed in this section to be material and to require adjustment.** (Also, we ignore all tax effects in this section.)

Companies must answer three questions in error analysis:

1. What type of error is involved?
2. What entries are needed to correct for the error?
3. After discovery of the error, should financial statements be restated? If so, how?

As indicated earlier, companies treat errors **as prior period adjustments and report them in the current year as adjustments to the beginning balance of Retained Earnings.** When a company presents comparative statements, it restates the prior affected statements to correct for the error.

Statement of Financial Position Errors

Statement of financial position errors affect only the presentation of asset, liability, or equity accounts. Examples are the classification of a short-term receivable as part of the investment section, the classification of a note payable as an account payable, and the classification of plant assets as inventory.

When the error is discovered, the company reclassifies the item to its proper position. If the company prepares comparative statements that include the error year, it should correctly restate the statement of financial position for the error year.

Income Statement Errors

Income statement errors involve the improper classification of revenues or expenses. Examples include recording interest revenue as part of sales, purchases as bad debt expense, and

depreciation expense as interest expense. An income statement classification error has no effect on the statement of financial position and **no effect on net income**.

A company must make a reclassification entry when it discovers the error if it makes the discovery in the same year in which the error occurs. If the error occurred in prior periods, the company does not need to make a reclassification entry at the date of discovery because the accounts for the current year are correctly stated. (Remember that the company has closed the income statement accounts from the prior period to retained earnings.) If the company prepares comparative statements that include the error year, it restates the income statement for the error year.

Statement of Financial Position and Income Statement Errors

The third type of error involves both the statement of financial position and the income statement. For example, assume that the bookkeeper overlooked accrued wages payable at the end of the accounting period. The effect of this error is to underestimate expenses, underestimate liabilities, and overstate net income for that period of time. This type of error affects both the statement of financial position and the income statement. We classify this type of error in one of two ways—counterbalancing or non-counterbalancing.

Counterbalancing errors are those that will be offset or corrected over two periods. For example, the failure to record accrued wages is a counterbalancing error, because over a two-year period the error will no longer be present. In other words, the failure to record accrued wages in the previous period means (1) net income for the first period is overstated, (2) accrued wages payable (a liability) is understated, and (3) wages expense is understated. In the next period, net income is understated, accrued wages payable (a liability) is correctly stated, and wages expense is overstated. For the two **years combined** (1) net income is correct, (2) wages expense is correct, and (3) accrued wages payable at the end of the second year is correct. Most errors in accounting that affect both the statement of financial position and income statement are counterbalancing errors.

Non-counterbalancing errors are those that are not offset in the next accounting period. An example is the failure to capitalize equipment that has a useful life of five years. If we expense this asset immediately, expenses will be overstated in the first period but understated in the next four periods. At the end of the second period, the effect of the error is not fully offset. Net income is correct in the aggregate only at the end of five years because the asset is fully depreciated at this point. Thus, **non-counterbalancing errors are those that take longer than two periods to correct themselves**.

Only in rare instances is an error never reversed. An example is if a company initially expenses land. Because land is not depreciable, theoretically the error is never offset, unless the land is sold.

Counterbalancing Errors

We illustrate the usual types of counterbalancing errors on the following pages. In studying these illustrations, keep in mind a couple of points, discussed below.

First, determine whether the company has closed the books for the period in which the error is found:

1. If the company has closed the books in the current year:

- a. If the error is already counterbalanced, no entry is necessary.

- b. If the error is not yet counterbalanced, make an entry to adjust the present balance of Retained Earnings.

2. If the company has not closed the books in the current year:

- a. If the error is already counterbalanced, make an entry to correct the error in the current period and to adjust the beginning balance of Retained Earnings.
- b. If the error is not yet counterbalanced, make an entry to adjust the beginning balance of Retained Earnings.

Second, if the company presents comparative statements, it must restate the amounts for comparative purposes. **Restatement is necessary even if a correcting journal entry is not required.**

To illustrate, assume that Sanford's Cement failed to accrue revenue in 2020 when it fulfilled its performance obligation but recorded the revenue in 2021 when it received payment. The company discovered the error in 2023. It does not need to make an entry to correct for this error because the effects have been counterbalanced by the time Sanford discovered the error in 2023. However, if Sanford presents comparative financial statements for 2020 through 2023, it must **restate the accounts and related amounts for the years 2020 and 2021 for financial reporting purposes.**

The examples that follow in **Illustrations 22.22** through **22.28** demonstrate the accounting for the usual types of counterbalancing errors.

Failure to Record Accrued Wages

Facts: On December 31, 2022, Hurley Enterprises did not accrue wages in the amount of \$1,500.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books?

Solution: The entry to correct this error is as follows.

Retained Earnings	1,500	
Salaries and Wages Expense		1,500

The rationale for this entry is:

1. When Hurley pays the 2022 accrued wages in 2023, it makes an additional debit of \$1,500 to 2023 Salaries and Wages Expense.
2. Salaries and Wages Expense in 2023 is overstated by \$1,500.
3. Because the company did not record 2022 accrued wages as Salaries and Wages Expense in 2022, the net income for 2022 is overstated by \$1,500.
4. Because 2022 net income is overstated by \$1,500, the Retained Earnings account is overstated by \$1,500 (because net income is closed to Retained Earnings).

ILLUSTRATION 22.22 Errors—Accrued Wages

If Hurley has closed the books for 2023, it makes no entry, because the error is counterbalanced.

Failure to Record Prepaid Expenses

Facts: In January 2022, Hurley Enterprises purchased a 2-year insurance policy costing \$1,000. It debited Insurance Expense and credited Cash. The company made no adjusting entries at the end of 2022.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: The entry to correct this error on December 31, 2023, is as follows.

Insurance Expense	500	
Retained Earnings		500

ILLUSTRATION 22.23 Errors—Prepaid Expenses

If Hurley has closed the books for 2023, it makes no entry, because the error is counterbalanced.

Understatement of Unearned Revenue

Facts: On December 31, 2022, Hurley Enterprises received \$50,000 as a prepayment for renting certain office space for the following year. At the time of receipt of the rent payment, the company recorded a debit to Cash and a credit to Rent Revenue. It made no adjusting entry as of December 31, 2022.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: The entry to correct this error on December 31, 2023, is as follows.

Retained Earnings	50,000	
Rent Revenue		50,000

ILLUSTRATION 22.24 Errors—Unearned Revenues

If Hurley has closed the books for 2023, it makes no entry, because the error is counterbalanced.

Overstatement of Accrued Revenue

Facts: On December 31, 2022, Hurley Enterprises accrued as interest revenue \$8,000 that applied to 2023. On that date, the company recorded a debit to Interest Receivable and a credit to Interest Revenue.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: The entry to correct this error on December 31, 2023, is as follows.

Retained Earnings	8,000	
Interest Revenue		8,000

ILLUSTRATION 22.25 Errors—Accrued Revenue

If Hurley has closed the books for 2023, it makes no entry, because the error is counterbalanced.

Overstatement of Purchases

Facts: Hurley's accountant recorded a purchase of merchandise for \$9,000 in 2022 that applied to 2023. The physical inventory for 2022 was correctly stated. The company uses the periodic inventory method.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: The entry to correct this error on December 31, 2023, is as follows.

Purchases	9,000	
Retained Earnings		9,000

ILLUSTRATION 22.26 Errors—Purchases

If Hurley has closed the books for 2023, it makes no entry, because the error is counterbalanced

Non-Counterbalancing Errors

The entries for non-counterbalancing errors are more complex. Companies must make correcting entries, even if they have closed the books.

Failure to Record Depreciation

Facts: Assume that on January 1, 2022, Hurley Enterprises purchased a machine for \$10,000 that had an estimated useful life of 5 years. The accountant incorrectly expensed this machine in 2022 but discovered the error in 2023.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: If we assume that Hurley uses straight-line depreciation on this asset, the entry to correct this error on December 31, 2023, is as follows.

Equipment	10,000	
Depreciation Expense	2,000	
Retained Earnings		8,000*
Accumulated Depreciation—Equipment ($.20 \times \$10,000 \times 2$)		4,000
*Computations:		
Retained Earnings		
Overstatement of expense in 2022	\$10,000	
Proper depreciation for 2022 ($.20 \times \$10,000$)	(2,000)	
Retained earnings understated as of Dec. 31, 2022	<u>\$ 8,000</u>	

ILLUSTRATION 22.27 Non-Counterbalancing Errors—Depreciation

If Hurley has closed the books for 2023, the entry is:

Equipment	10,000	
Retained Earnings		6,000*
Accumulated Depreciation—Equipment		4,000
*Computations:		
Retained Earnings		
Retained earnings understated as of Dec. 31, 2022	\$ 8,000	
Proper depreciation for 2023 ($.20 \times \$10,000$)	(2,000)	
Retained earnings understated as of Dec. 31, 2023	<u>\$ 6,000</u>	

Failure to Adjust for Bad Debts

Facts: Companies sometimes use a specific charge-off method in accounting for bad debt expense when a percentage-of-receivables method is more appropriate. They then make adjustments to change from the specific write-off to some type of allowance method. For example, assume that Hurley Enterprises has recognized bad debt expense when it has the following uncollectible debts.

	2022	2023
From 2022 sales	\$550	\$690
From 2023 sales		700

Hurley estimates that it will charge off an additional \$1,400 in 2024, of which \$300 is applicable to 2022 sales and \$1,100 to 2023 sales.

Question: What is the entry on December 31, 2023, to correct this error, assuming Hurley has not closed the books for 2023?

Solution: The entry to correct this error on December 31, 2023, is as follows.

Bad Debt Expense	410	
Retained Earnings	990	
Allowance for Doubtful Accounts		1,400

Allowance for doubtful accounts: Additional \$300 for 2022 sales and \$1,100 for 2023 sales.

Bad debts and retained earnings balance:

	2022	2023
Bad debts charged for	\$1,240*	\$ 700
Additional bad debts anticipated in 2024	300	1,100
Proper bad debt expense	1,540	1,800
Charges currently made to each period	(550)	(1,390)
Bad debt adjustment	\$ 990	\$ 410

*\$550 + \$690 = \$1,240

ILLUSTRATION 22.28 Non-Counterbalancing Errors—Bad Debts

If Hurley has closed the books for 2023, the entry is:

Retained Earnings	1,400	
Allowance for Doubtful Accounts		1,400

Comprehensive Example: Numerous Errors

In some circumstances, a combination of errors occurs. The company therefore prepares a worksheet to facilitate the analysis. The following problem demonstrates use of the worksheet.

The mechanics of its preparation should be obvious from the solution format. The income statements of Hudson Haulers indicate the following net incomes for the years ended December 31, 2021, 2022, and 2023.

2021	€17,400
2022	20,200
2023	11,300

An examination of the accounting records for these years indicates that Hudson made several errors in arriving at the net income amounts reported:

1. The company consistently omitted from the records wages earned by workers but not paid at December 31. The amounts omitted were:

December 31, 2021	€1,000
December 31, 2022	1,400
December 31, 2023	1,600

When the wages were paid in the year following that in which they were earned, Hudson recorded the amounts as expenses.

2. The company overstated merchandise inventory on December 31, 2021, by €1,900, as the result of errors made in the footings and extensions on the inventory sheets.
3. On December 31, 2022, Hudson expensed unexpired insurance of €1,200, applicable to 2023.
4. The company did not record on December 31, 2022, interest receivable in the amount of €240.
5. On January 2, 2022, Hudson sold for €1,800 a piece of equipment costing €3,900. At the date of sale, the equipment had accumulated depreciation of €2,400. The company recorded the cash received as Miscellaneous Income in 2022. In addition, the company continued to record depreciation for this equipment in both 2022 and 2023 at the rate of 10 percent of cost.

The first step in preparing the worksheet is to prepare a schedule showing the corrected net income amounts for the years ended December 31, 2021, 2022, and 2023. Each correction of the amount originally reported is clearly labeled. The next step is to indicate the statement of financial position accounts affected as of December 31, 2023. [Illustration 22.29](#) shows the completed worksheet for Hudson Haulers.

Assuming that Hudson **has not closed the books**, correcting entries on December 31, 2023, are as follows.

To correct improper charge to Salaries and Wages Expense for 2023

Retained Earnings	1,400
Salaries and Wages Expense	1,400

To record proper wages expense for 2023

Salaries and Wages Expense	1,600
Salaries and Wages Payable	1,600

To record proper insurance expense for 2023

Insurance Expense	1,200
Retained Earnings	1,200

To correct improper credit to Interest Revenue in 2023

Interest Revenue	240
Retained Earnings	240

To record write-off of equipment in 2022 and adjustment of Retained Earnings

Retained Earnings	1,500
Accumulated Depreciation—Equipment	2,400
Equipment	3,900

To correct improper charge for depreciation expense in 2022 and 2023

Accumulated Depreciation—Equipment	780
Depreciation Expense	390
Retained Earnings	390

Hudson Haulers Worksheet to Correct Income and Statement of Financial Position Errors							
	Worksheet Analysis of Changes in Net Income				Statement of Financial Position Correction at December 31, 2023		
	2021	2022	2023	Totals	Debit	Credit	Account
6 Net income as reported	€17,400	€20,200	€11,300	€48,900			
7 Wages unpaid, 12/31/21	(1,000)	1,000		-0-			
8 Wages unpaid, 12/31/22		(1,400)	1,400	-0-			
9 Wages unpaid, 12/31/23			(1,600)	(1,600)		€1,600	Salaries and Wages Payable
10 Inventory overstatement, 12/31/21	(1,900)	1,900		-0-			
11 Unexpired insurance, 12/31/22		1,200	(1,200)	-0-			
12 Interest receivable, 12/31/22		240	(240)	-0-			
13 Correction for entry made upon sale of equipment, 1/2/22 ^a		(1,500)		(1,500)	€2,400		Accumulated Depreciation—Equipment
						3,900	Equipment
14 Overcharge of depreciation, 2022		390		390	390		Accumulated Depreciation—Equipment
15 Overcharge of depreciation, 2023			390	390	390		Accumulated Depreciation—Equipment
16 Corrected net income	€14,500	€22,030	€10,050	€46,580			
17 ^a Cost	€3,900						
18 Accumulated depreciation	2,400						
19 Book value	1,500						
20 Proceeds from sale	1,800						
21 Gain on sale	300						
22 Income reported	(1,800)						
23 Adjustment	€(1,500)						

ILLUSTRATION 22.29 Worksheet to Correct Income and Statement of Financial Position Errors

If Hudson Haulers has **closed the books** for 2023, the correcting entries are:

To record proper wages expense for 2023
Retained Earnings 1,600 Salaries and Wages Payable 1,600
To record write-off of equipment in 2022 and adjustment of Retained Earnings
Retained Earnings 1,500 Accumulated Depreciation—Equipment 2,400 Equipment 3,900
To correct improper charge for depreciation expense in 2022 and 2023
Accumulated Depreciation—Equipment 780 Retained Earnings 780

Preparation of Financial Statements with Error Corrections

Until now, our discussion of error analysis has focused on identifying the type of error involved and accounting for its correction in the records. We have noted that companies must present the correction of the error on comparative financial statements.

The following example illustrates how a company would restate a typical year's financial statements, given many different errors.

Dick & Wally's Outlet is a small retail outlet in the town of Holiday. Lacking expertise in accounting, the company does not keep adequate records, and numerous errors have occurred in recording accounting information.

1. The bookkeeper inadvertently failed to record a cash receipt of \$1,000 on the sale of merchandise in 2023.
2. Accrued wages expense at the end of 2022 was \$2,500; at the end of 2023, \$3,200. The company does not accrue for wages; all wages are charged to Administrative Expenses.
3. The company had not provided an allowance for estimated uncollectible receivables. Dick and Wally decided to set up such an allowance for the estimated probable losses, as of December 31, 2023, for 2022 accounts of \$700, and for 2023 accounts of \$1,500. They also decided to correct the charge against each year so that it showed the losses (actual and estimated) relating to that year's sales. The company has written off accounts to bad debt expense (selling expense) as follows.

	In 2022	In 2023
2022 accounts	\$400	\$2,000
2023 accounts		1,600

4. Unexpired insurance not recorded at the end of 2022 was \$600, and at the end of 2023, \$400. All insurance is charged to Administrative Expenses.
5. An account payable of \$6,000 should have been a note payable.
6. During 2022, the company sold for \$7,000 an asset that cost \$10,000 and had a book value of \$4,000. At the time of sale, Cash was debited and Miscellaneous Income was credited for \$7,000.
7. As a result of the last transaction, the company overstated depreciation expense (an administrative expense) in 2022 by \$800 and in 2023 by \$1,200.

Illustration 22.30 presents a worksheet that begins with the unadjusted trial balance of Dick & Wally's Outlet. You can determine the correcting entries and their effect on the financial statements by examining the worksheet.

Dick & Wally's Outlet

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Dick & Wally's Outlet
Worksheet Analysis to Adjust Financial
Statements for the Year 2023

	A	Trial Balance Unadjusted		Adjustments		Income Statement Adjusted		Statement of Financial Position Adjusted	
		Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
8	Cash	3,100		(1)	1,000			4,100	
9	Accounts Receivable	17,600						17,600	
10	Notes Receivable	8,500						8,500	
11	Inventory	34,000						34,000	
12	Property, Plant, and Equipment	112,000			(6) 10,000 ^a			102,000	
13	Accumulated Depreciation—Equipment	83,500	(6) 6,000 ^a	(7) 2,000					75,500
14									
15	Investments	24,300						24,300	
16	Accounts Payable	14,500	(5) 6,000						8,500
17	Notes Payable	10,000		(5) 6,000					16,000
18	Share Capital	43,500							43,500
19	Retained Earnings	20,000	(3) 2,700 ^b						
20		(6) 4,000 ^a	(4) 600						
21		(2) 2,500	(7) 800						12,200
22	Sales Revenue	94,000		(1) 1,000				95,000	
23	Cost of Goods Sold	21,000						21,000	
24	Selling Expenses	22,000		(3) 500 ^b				21,500	
25	Administrative Expenses	23,000	(2) 700	(4) 400				22,700	
26		(4) 600	(7) 1,200						
27	Totals	<u>265,500</u>	<u>265,500</u>						
28									
29	Salaries and Wages Payable			(2) 3,200					3,200
30	Allowance for Doubtful Accounts			(3) 2,200 ^b					2,200
31									
32	Unexpired Insurance		(4) 400					400	
33	Net Income					29,800			29,800
34	Totals		<u>25,900</u>	<u>25,900</u>		<u>95,000</u>	<u>95,000</u>	<u>190,900</u>	<u>190,900</u>
35									
Computations:									
^a Machinery									
Proceeds from sale									
\$7,000									
Book value of machinery									
4,000									
Gain on sale									
3,000									
Income credited									
7,000									
Retained earnings adjustment									
\$4,000									
^b Bad Debts									
Bad debts charged for									
\$2,400									
Additional bad debts anticipated									
700									
Charges currently made to each year									
3,100									
Bad debt adjustment									
(\$400)									
\$2,700									
\$ (500)									

ILLUSTRATION 22.30 Worksheet to Analyze Effect of Errors in Financial Statements

Review and Practice

Key Terms Review

[changes in accounting estimates](#)

[change in accounting policy](#)

[corrections of an error](#)

[counterbalancing errors](#)

[cumulative effect](#)

direct effects of a change in accounting policy
economic consequences
impracticable
indirect effects related to a change in accounting policy
non-counterbalancing errors
prior period adjustments
prospectively
retrospective application
retrospective restatement (n).

Learning Objectives Review

1 Discuss the types of accounting changes and the accounting for changes in accounting policies.

The two different types of accounting changes are as follows. (1) *Change in accounting policy*: a change from one accepted accounting policy to another accepted accounting policy. (2) *Change in accounting estimate*: a change that occurs as the result of new information or as additional experience is acquired.

A **change in accounting policy** involves a change from one accepted accounting policy to another. A change in accounting policy is not considered to result from the adoption of a new policy in recognition of events that have occurred for the first time or that were previously immaterial. If the accounting policy previously followed was not acceptable or if the policy was applied incorrectly, a change to an accepted accounting policy is considered a correction of an error.

The general requirement for changes in accounting policy is **retrospective application**. Under retrospective application, companies change prior years' financial statements on a basis consistent with the newly adopted policy. They treat any part of the effect attributable to years prior to those presented as an adjustment of the earliest retained earnings presented.

Retrospective application is **impracticable** if the prior period effect cannot be determined using every reasonable effort to do so. For example, in changing to average-cost, the base-year inventory for all subsequent average-cost calculations may be the opening inventory in the year the company adopts the method. There is no restatement of prior years' income because it is often too impractical.

2 Describe the accounting and reporting for changes in estimates.

Companies report changes in estimates prospectively. That is, companies should make no changes in previously reported results. They do not adjust opening balances nor change financial statements of prior periods.

3 Describe the accounting for correction of errors.

Companies must correct errors as soon as they discover them, by proper entries in the accounts, and report them in the financial statements. The profession requires that a company treat

corrections of errors as **prior period adjustments**, record them in the year in which it discovered the errors, and report them in the financial statements in the proper periods. If presenting comparative statements, a company should restate the prior statements affected to correct for the errors. The company need not repeat the disclosures in the financial statements of subsequent periods.

4 Analyze the effect of errors.

Three types of errors can occur. (1) *Statement of financial position errors*, which affect only the presentation of asset, liability, or equity accounts. (2) *Income statement errors*, which affect only the presentation of revenue, expense, gain, or loss accounts in the income statement. (3) *Statement of financial position and income statement errors*, which involve both the statement of financial position and income statement. The third type of error is further classified into two types. (1) *Counterbalancing errors* are offset or corrected over two periods. (2) *Non-counterbalancing errors* are not offset in the next accounting period and take longer than two periods to correct themselves.

As an aid to understanding accounting changes, we provide the following glossary. [\[10\]](#)

Enhanced Review and Practice

Go online for multiple-choice questions with solutions, review exercises with solutions, and a full glossary of all key terms.

Key Terms Related to Accounting Changes

Accounting Policies. The specific principles, bases, conventions, rules, and practices applied by an entity in preparing and presenting financial statements.

Change in Accounting Estimate. An adjustment of the carrying amount of an asset or a liability, or the amount of the periodic consumption of an asset, that results from the assessment of the present status of, and expected future benefits and obligations associated with, assets and liabilities. Changes in accounting estimates result from new information or new developments and, accordingly, are not corrections of errors.

Direct Effects of a Change in Accounting Policy. Those recognized changes in assets or liabilities necessary to effect a change in accounting policy.

Errors. Omissions from, and misstatements in, the entity's financial statements for one or more prior periods arising from the failure to use, or misuse of, representationally faithful information that: (1) was available when financial statements for those periods were authorized for issue; and (2) could reasonably be expected to have been obtained and taken into account in the preparation and presentation of those financial statements. Such errors include the effects of mathematical mistakes, mistakes in applying accounting policies, oversights or misinterpretations of facts, and fraud.

Impracticable. Applying a requirement is impracticable when the entity cannot apply it after making every reasonable effort to do so. For a particular prior period, it is impracticable to apply a change in an accounting policy retrospectively or to make a retrospective restatement to correct an error when (1) the effects of the retrospective application or retrospective restatement are not determinable; (2) the retrospective application or retrospective restatement requires assumptions about what management's intent would have been in that period; or (3) the retrospective application or retrospective restatement requires significant estimates of amounts, and it is impossible to report objectively based on those estimates.

Indirect Effects of a Change in Accounting Policy. Any changes to current or future cash flows of an entity that result from making a change in accounting policy that is applied retrospectively.

Prospective Application. Change in accounting policy that requires (1) applying the new accounting policy to transactions, other events, and conditions occurring after the date at which the policy is changed; and (2) recognizing the effect of the change in the accounting estimate in the current and future periods affected by the change.

Retrospective Application. Applying a new accounting policy to transactions, other events, and conditions, as if that policy had always been applied.

Retrospective Restatement. Correcting the recognition, measurement, and disclosure of amounts of elements of financial statements, as if a prior period error had never occurred.

Practice Problem

Wangerin Company is in the process of adjusting and correcting its books at the end of 2022. In reviewing its records, the following information is compiled.

- At December 31, 2022, Wangerin decided to change the depreciation method on its office equipment from double-declining-balance to straight-line. The equipment had an original cost of \$200,000 when purchased on January 1, 2020. It has a 10-year useful life and no residual value. Depreciation expense recorded prior to 2022 under the double-declining-balance method was \$72,000. Wangerin has already recorded 2022 depreciation expense of \$25,600 using the double-declining-balance method.
- Before 2022, Wangerin accounted for its income from long-term construction contracts using the zero-profit method. Early in 2022, Wangerin changed to the percentage-of-completion basis for accounting purposes. It continues to use the zero-profit method for tax purposes. Income for 2022 has been recorded using the percentage-of-completion method. The following information is available.

	Pretax Income	
	Percentage-of-Completion	Completed-Contract
Prior to 2022	\$450,000	\$315,000
2022	180,000	60,000

- Insurance for a 12-month period purchased on November 1 of this year was charged to insurance expense in the amount of \$3,300 because “the amount of the check is about the same every year.”
- Reported sales revenue for the year is \$1,908,000. This includes all sales taxes collected for the year. The sales tax rate is 6%. Because the sales tax is forwarded to the Department of Revenue, the Sales Tax Expense account is debited. The bookkeeper thought that “the sales tax is a selling expense.” At the end of the current year, the balance in the Sales Tax Expense account is \$103,400.

Instructions

Prepare the journal entries necessary at December 31, 2022, to record the above corrections and changes. The books are still open for 2022. The income tax rate is 40%. Wangerin has not yet recorded its 2022 income tax expense and payable amounts so current-year tax effects may be ignored. Prior-year tax effects must be considered in item 2.

Solution

1.	Accumulated Depreciation—Equipment	9,600	
	Depreciation Expense		9,600*
	*Equipment cost	\$200,000	
	Depreciation before 2022	(72,000)	
	Book value	\$128,000	
	Depreciation recorded	\$ 25,600	
	Depreciation to be taken (\$128,000 ÷ 8)	(16,000)	
	Difference	\$ 9,600	
2.	Construction in Process	135,000	
	Deferred Tax Liability		54,000*
	Retained Earnings		81,000
	*(\$450,000 – \$315,000) × .40		

3. Prepaid Insurance ($\$3,300 \times 10/12$)	2,750	
Insurance Expense		2,750
4. Sales Revenue [$\$1,908,000 \div (1.00 + .06) \times .06$]	108,000	
Sales Taxes Payable		108,000
Sales Taxes Payable	103,400	
Sales Tax Expense		103,400

Exercises, Problems, Problem Solution Walkthrough Videos, Data Analytics Activities, and many more assessment tools and resources are available for practice in Wiley's online courseware.

Questions

- 1.** In recent years, the financial press has indicated that many companies have changed their accounting policies. What are the major reasons why companies change accounting policies?
- 2.** State how each of the following items is reflected in the financial statements.
 - a. Change from FIFO to average-cost method for inventory valuation purposes.
 - b. Charge for failure to record depreciation in a previous period.
 - c. Litigation won in current year, related to prior period.
 - d. Change in the realizability of certain receivables.
 - e. Impairment of receivables.
 - f. Change from the percentage-of-completion to the cost-recovery method for reporting net income.
- 3.** Discuss briefly the three approaches that have been suggested for reporting changes in accounting policies.
- 4.** Identify and describe the approach the IASB requires for reporting changes in accounting policies.
- 5.** What is an indirect effect of a change in accounting policy? Briefly describe the approach to reporting the indirect effects of a change in accounting policy.
- 6.** Define a change in estimate and provide an illustration.
- 7.** Lenexa State Bank has followed the practice of capitalizing certain marketing costs and amortizing these costs over their expected life. In the current year, the bank determined that the future benefits from these costs were doubtful. Consequently, the bank adopted the policy of expensing these costs as incurred. How should the bank report this accounting change in the comparative financial statements?
- 8.** Indicate how the following items are recorded in the accounting records in the current year of Coronet Co.
 - a. Impairment of goodwill.
 - b. A change in depreciating plant assets from the accelerated to the straight-line method.
 - c. Large write-off of inventories because of obsolescence.

- d. Change from the cash basis to the accrual basis of accounting.
 - e. Change from average-cost to FIFO method for inventory valuation purposes.
 - f. Change in the estimate of service lives for plant assets.
- 9.** Whittier Construction had followed the practice of expensing all materials assigned to a construction job without recognizing any residual inventory. On December 31, 2022, it was determined that residual inventory should be valued at CHF52,000. Of this amount, CHF29,000 arose during the current year. How does this information affect the financial statements to be prepared at the end of 2022?
- 10.** Parsons Inc. wishes to change from the cost-recovery to the percentage-of-completion method for financial reporting purposes. The auditor indicates that a change would be permitted only if it is to a preferable method. What difficulties develop in assessing preferability?
- 11.** Discuss how a change in accounting policy is handled when it is impracticable to determine previous amounts.
- 12.** What relevance do political costs have to accounting changes?
- 13.** What are some of the key motivations that managers might have to change accounting policies?
- 14.** Distinguish between counterbalancing and non-counterbalancing errors. Give an example of each.
- 15.** Discuss and illustrate how a correction of an error in previously issued financial statements should be handled.
- 16.** Prior to 2022, Heberling Inc. excluded manufacturing overhead costs from work in process and finished goods inventory. These costs were expensed as incurred. In 2022, the company decided to change its accounting methods for manufacturing inventories to full costing by including these costs as product costs. Assuming that these costs are material, how should this change be reflected in the financial statements for 2021 and 2022?
- 17.** Elliott AG failed to record accrued salaries for 2020, €2,000; 2021, €2,100; and 2022, €3,900. What is the amount of the overstatement or understatement of Retained Earnings at December 31, 2023?
- 18.** In January 2021, installation costs of £6,000 on new equipment were charged to Maintenance and Repairs Expense. Other costs of this equipment of £30,000 were correctly recorded and have been depreciated using the straight-line method with an estimated life of 10 years and no residual value. At December 31, 2022, it is decided that all of the equipment has a remaining useful life of 20 years, starting with January 1, 2022. What entry or entries should be made in 2022 to correctly record transactions related to equipment, assuming the equipment has no residual value? The books have not been closed for 2022, and depreciation expense has not yet been recorded for 2022.
- 19.** An entry to record Purchases and related Accounts Payable of ¥130,000 for merchandise purchased on December 23, 2022, was recorded in January 2023. This merchandise was not included in inventory at December 31, 2022. What effect does this error have on reported net income for 2022? What entry should be made to correct for this error, assuming that the books are not closed for 2022?
- 20.** Equipment was purchased on January 2, 2022, for \$24,000, but no portion of the cost has been charged to depreciation. The company wishes to use the straight-line method for these assets, which have been estimated to have a life of 10 years and no residual value. What effect

does this error have on net income in 2022? What entry is necessary to correct for this error, assuming that the books are not closed for 2022?

Brief Exercises

BE22.1 (LO 1) Wertz Construction decided at the beginning of 2022 to change from the cost-recovery method to the percentage-of-completion method for financial reporting purposes. The company will continue to use the cost-recovery method for tax purposes. For years prior to 2022, pretax income under the two methods was as follows: percentage-of-completion \$120,000, and cost-recovery \$80,000. The tax rate is 35%. Prepare Wertz's 2022 journal entry to record the change in accounting policy.

BE22.2 (LO 1) Refer to the accounting change by Wertz Construction in BE22.1. Wertz has a profit-sharing plan, which pays all employees a bonus at year-end based on 1% of pretax income. Compute the indirect effect of Wertz's change in accounting policy that will be reported in the 2022 income statement, assuming that the profit-sharing contract explicitly requires adjustment for changes in income numbers.

BE22.3 (LO 1) Shannon AG, changed from the average-cost to the FIFO cost flow assumption in 2022. The increase in the prior year's income before taxes is €1,200,000. The tax rate is 40%. Prepare Shannon's 2022 journal entry to record the change in accounting policy.

BE22.4 (LO 2) Tedesco Company changed depreciation methods in 2022 from double-declining-balance to straight-line. Depreciation prior to 2022 under double-declining-balance was \$90,000, whereas straight-line depreciation prior to 2022 would have been \$50,000. Tedesco's depreciable assets had a cost of \$250,000, with a \$40,000 residual value and an 8-year remaining useful life at the beginning of 2022. Prepare the 2022 journal entry, if necessary, related to Tedesco's depreciable assets.

BE22.5 (LO 2) Sesame plc purchased a computer system for £74,000 on January 1, 2020. It was depreciated based on a 7-year life and an £18,000 residual value, using straight-line depreciation. On January 1, 2022, Sesame revised these estimates to a total useful life of 4 years and a residual value of £10,000. Prepare Sesame's entry to record 2022 depreciation expense.

BE22.6 (LO 3) In 2022, Bailey SA discovered that equipment purchased on January 1, 2020, for €50,000 was expensed at that time. The equipment should have been depreciated over 5 years, with no residual value, using straight-line depreciation. The effective tax rate is 30%. Prepare Bailey's 2022 journal entry to correct the error.

BE22.7 (LO 3) At January 1, 2022, Cheng Ltd. reported retained earnings of ¥20,000,000. In 2022, Cheng discovered that 2021 depreciation expense was understated by ¥4,000,000. In 2022, net income was ¥9,000,000 and dividends declared were ¥2,500,000. The tax rate is 40%. Prepare a 2022 retained earnings statement for Cheng Ltd.

BE22.8 (LO 3, 4) Indicate the effect—Understate, Overstate, No Effect—that each of the following errors has on 2021 net income and 2022 net income.

	2021	2022
a. Equipment purchased in 2020 was expensed.	_____	_____
b. Wages payable were not recorded at 12/31/21.	_____	_____
	_____	_____

c. Equipment purchased in 2021 was expensed.		
d. 2021 ending inventory was overstated.	—	—
e. Patent amortization was not recorded in 2022.	—	—

BE22.9 (LO 1, 2) Roundtree Manufacturing is preparing its year-end financial statements and is considering the accounting for the following items.

1. The vice president of sales has indicated that one product line has lost its customer appeal and will be phased out over the next 3 years. Therefore, a decision has been made to lower the estimated lives on related production equipment from the remaining 5 years to 3 years.
2. The Hightone Building was converted from a sales office to offices for the Accounting Department at the beginning of this year. Therefore, the expense related to this building will now appear as an administrative expense rather than a selling expense on the current year's income statement.
3. Estimating the lives of new products in the Leisure Products Division has become very difficult because of the highly competitive conditions in this market. Therefore, the practice of deferring and amortizing preproduction costs has been abandoned in favor of expensing such costs as they are incurred.

Identify and explain whether each of the above items is a change in policy, a change in estimate, or an error.

BE22.10 (LO 1, 3) Palmer Co. is evaluating the appropriate accounting for the following items.

1. Management has decided to switch from the FIFO inventory valuation method to the average-cost inventory valuation method for all inventories.
2. When the year-end physical inventory adjustment was made for the current year, the controller discovered that the prior year's physical-inventory sheets for an entire warehouse had been mislaid and excluded from last year's count.
3. Palmer's Custom Division manufactures large-scale, custom-designed machinery on a contract basis. Management decided to switch from the cost-recovery method to the percentage-of-completion method of accounting for long-term contracts.

Identify and explain whether each of the above items is a change in accounting policy, a change in estimate, or an error.

Exercises

E22.1 (LO 1) (Change in Policy—Long-Term Contracts) Cherokee Construction Company changed from the cost-recovery to the percentage-of-completion method of accounting for long-term construction contracts during 2022. For tax purposes, the company employs the cost-recovery method and will continue this approach in the future. (*Hint:* Adjust all tax consequences through the Deferred Tax Liability account.) The appropriate information related to this change is as follows.

	Pretax Income from	
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	Percentage-of-Completion	Cost-Recovery	Difference
Prior Years	\$780,000	\$610,000	\$170,000
2022	700,000	480,000	220,000

Instructions

- Assuming that the tax rate is 35%, what is the amount of net income that would be reported in 2022?
- What entry or entries is/are necessary to adjust the accounting records for the change in accounting policy?

E22.2 (LO 1) (Change in Policy—Inventory Methods) Whitman SA began operations on January 1, 2019, and uses the average-cost method of pricing inventory. Management is contemplating a change in inventory methods for 2022. The following information is available for the years 2019–2021.

	Net Income Computed Using	
	Average-Cost Method	FIFO Method
2019	€16,000	€19,000
2020	18,000	21,000
2021	20,000	25,000

Instructions

(Ignore all tax effects.)

- Prepare the journal entry necessary to record a change from the average-cost method to the FIFO method in 2022.
- Determine net income to be reported for 2019, 2020, and 2021, after giving effect to the change in accounting policy.

E22.3 (LO 1) (Accounting Policy Change) Ramirez Co. decides at the beginning of 2022 to adopt the FIFO method of inventory valuation. Ramirez has used the average-cost method for financial reporting since its inception on January 1, 2020, and has maintained records adequate to apply the FIFO method retrospectively. Ramirez concluded that FIFO is the preferable inventory method because it reflects the current cost of inventory on the statement of financial position. The following table presents the effects of the change in accounting policy on inventory and cost of goods sold.

Date	Inventory Determined by		Cost of Goods Sold Determined by	
	Average-Cost Method	FIFO Method	Average-Cost Method	FIFO Method
January 1, 2020	\$ 0	\$ 0	\$ 0	\$ 0
December 31, 2020	100	80	800	820
December 31, 2021	200	240	1,000	940
December 31, 2022	320	390	1,130	1,100

Retained earnings reported under average-cost are as follows.

	Retained Earnings Balance

December 31, 2020	\$2,200
December 31, 2021	4,200
December 31, 2022	6,070

Other information:

1. For each year presented, sales are \$4,000 and operating expenses are \$1,000.
2. Ramirez provides two years of financial statements.

Instructions

- a. Prepare income statements under average-cost and FIFO for 2020, 2021, and 2022. Omit earnings per share.
- b. Prepare income statements reflecting the retrospective application of the accounting change from the average-cost method to the FIFO method for 2022 and 2021.
- c. Prepare the note to the financial statements describing the change in method of inventory valuation. In the note, indicate the income statement line items for 2022 and 2021 that were affected by the change in accounting policy.
- d. Prepare comparative retained earnings statements for 2021 and 2022 under FIFO.

E22.4 (LO 1) (Accounting Policy Change) Linden plc started operations on January 1, 2017, and has used the FIFO method of inventory valuation since its inception. In 2022, it decides to switch to the average-cost method. You are provided with the following information.

	Net Income		Retained Earnings (ending balance)
	Under FIFO	Under Average-Cost	Under FIFO
2017	£100,000	£ 92,000	£100,000
2018	70,000	65,000	160,000
2019	90,000	80,000	235,000
2020	120,000	130,000	340,000
2021	300,000	293,000	590,000
2022	305,000	310,000	780,000

Instructions

- a. What is the beginning retained earnings balance at January 1, 2019, if Linden presents 2-year comparative financial statements starting in 2019?
- b. What is the beginning retained earnings balance at January 1, 2022, if Linden presents 2-year comparative financial statements starting in 2022?
- c. What is the beginning retained earnings balance at January 1, 2023, if Linden presents 2-year single-period financial statements for 2023?
- d. What is the net income reported by Linden in the 2022 income statement if it presents 2-year comparative financial statements starting with 2020?

E22.5 (LO 1) (Accounting Change) Presented below are income statements prepared on an average-cost and FIFO basis for Carlton SA, which started operations on January 1, 2021. The company presently uses the average-cost method of pricing its inventory and has decided to

switch to the FIFO method in 2022. The FIFO income statement is computed in accordance with IFRS. Carlton's profit-sharing agreement with its employees indicates that the company will pay employees 5% of income before profit sharing. Income taxes are ignored.

	Average-Cost Basis		FIFO Basis	
	2022	2021	2022	2021
Sales	€3,000	€3,000	€3,000	€3,000
Cost of goods sold	1,130	1,000	1,100	940
Operating expenses	1,000	1,000	1,000	1,000
Income before profit sharing	870	1,000	900	1,060
Profit-sharing expense	44	50	45	53
Net income	€ 826	€ 950	€ 855	€1,007

Instructions

Answer the following questions.

- If comparative income statements are prepared, what net income should Carlton report in 2021 and 2022?
- Explain why, under the FIFO basis, Carlton reports €50 in 2021 and €48 in 2022 for its profit-sharing expense.
- Assume that Carlton has a beginning balance of retained earnings of €8,000 at January 1, 2022, using the average-cost method. The company declared and paid dividends of €2,500 in 2022. Prepare the retained earnings statement for 2022, assuming that Carlton has switched to the FIFO method.

E22.6 (LO 2) (Accounting Changes—Depreciation) Robillard SA acquired the following assets in January 2019.

Equipment, estimated service life, 5 years; residual value, €15,000	€465,000
Building, estimated service life, 30 years; no residual value	€780,000

The equipment has been depreciated using the sum-of-the-years'-digits method for the first 3 years for financial reporting purposes. In 2022, the company decided to change the method of computing depreciation to the straight-line method for the equipment, but no change was made in the estimated service life or residual value. It was also decided to change the total estimated service life of the building from 30 years to 40 years, with no change in the estimated residual value. The building is depreciated on the straight-line method.

Instructions

- Prepare the journal entry to record depreciation expense for the equipment in 2022.
- Prepare the journal entry to record depreciation expense for the building in 2022. (Round to nearest euro.)

E22.7 (LO 2, 3) (Change in Estimate and Error; Financial Statements) The following are the comparative income statements for Pannebecker Inc. for the years 2021 and 2022.

	2022	2021
Sales	\$340,000	\$270,000

Cost of sales	200,000	142,000
Gross profit	140,000	128,000
Expenses	88,000	50,000
Net income	\$ 52,000	\$ 78,000
Retained earnings (Jan. 1)	<u>\$125,000</u>	<u>\$ 72,000</u>
Net income	52,000	78,000
Dividends	(30,000)	(25,000)
Retained earnings (Dec. 31)	<u>\$147,000</u>	<u>\$125,000</u>

The following additional information is provided.

1. In 2022, Pannebecker Inc. decided to switch its depreciation method from sum-of-the-years'-digits to the straight-line method. The assets were purchased at the beginning of 2021 for \$90,000 with an estimated useful life of 4 years and no residual value. (The 2022 income statement contains depreciation expense of \$27,000 on the assets purchased at the beginning of 2021.)
2. In 2022, the company discovered that the ending inventory for 2021 was overstated by \$20,000; ending inventory for 2022 is correctly stated.

Instructions

Prepare the revised retained earnings statement for 2021 and 2022, assuming comparative statements. (Ignore income taxes.)

E22.8 (LO 1, 2, 3) (Accounting for Accounting Changes and Errors) Listed below are various types of accounting changes and errors.

_____	1. Change from FIFO to average-cost inventory method.
_____	2. Change due to overstatement of inventory.
_____	3. Change from an accelerated to straight-line method of depreciation.
_____	4. Change from average-cost to FIFO inventory method.
_____	5. Change in the rate used to compute warranty costs.
_____	6. Change from an unacceptable accounting policy to an acceptable accounting policy.
_____	7. Change in a patent's amortization period.

8. Change from cost-recovery to percentage-of-completion method on construction contracts.

9. Change in a plant asset's residual value.

Instructions

For each change or error, indicate how it would be accounted for using the following code letters:

- a. Accounted for prospectively.
- b. Accounted for retrospectively.
- c. Neither of the above.

E22.9 (LO 2, 3) (Error and Change in Estimate—Depreciation) Yoon Ltd. purchased a machine on January 1, 2019, for ₩44,000,000. At that time, it was estimated that the machine would have a 10-year life and no residual value. On December 31, 2022, the firm's accountant found that the entry for depreciation expense had been omitted in 2020. In addition, management has informed the accountant that the company plans to switch to straight-line depreciation, starting with the year 2022. At present, the company uses the sum-of-the-years'-digits method for depreciating equipment.

Instructions

Prepare the general journal entries that should be made at December 31, 2022, to record these events. (Ignore tax effects.)

E22.10 (LO 2) (Depreciation Changes) On January 1, 2018, McElroy plc purchased a building and equipment that have the following useful lives, residual values, and costs.

Building, 40-year estimated useful life, £50,000 residual value, £1,200,000 cost

Equipment, 12-year estimated useful life, £10,000 residual value, £130,000 cost

The building was depreciated under the double-declining-balance method through 2021. In 2022, the company decided to switch to the straight-line method of depreciation. McElroy also decided to change the total useful life of the equipment to 9 years, with a residual value of £5,000 at the end of that time. The equipment is depreciated using the straight-line method.

Instructions

- a. Prepare the journal entry or entries necessary to record the depreciation expense on the building in 2022.
- b. Compute depreciation expense on the equipment for 2022.

E22.11 (LO 2) (Change in Estimate—Depreciation) Thurber Co. purchased for \$710,000 equipment which was estimated to have a useful life of 10 years with a residual value of \$10,000 at the end of that time. Depreciation has been entered for 7 years on a straight-line basis. In 2022, it is determined that the total estimated life should be 15 years with a residual value of \$4,000 at the end of that time.

Instructions

- a. Prepare the entry (if any) to correct the prior years' depreciation.
- b. Prepare the entry to record depreciation for 2022.

E22.12 (LO 2) (Change in Estimate—Depreciation) Frederick Industries changed from the double-declining-balance to the straight-line method in 2022 on all its plant assets. There was no change in the assets' residual values or useful lives. Plant assets acquired on January 2, 2019 had an original cost of €2,400,000, with a €100,000 residual value and an 8-year estimated useful life. Income before depreciation expense was €370,000 in 2021 and €300,000 in 2022.

Instructions

- a. Prepare the journal entry or entries to reflect the change in depreciation method in 2022.
- b. Starting with income before depreciation expense, prepare the remaining portion of the income statement for 2021 and 2022.

E22.13 (LO 1) (Change in Policy—Long-Term Contracts) Bryant Construction Company changed from the cost-recovery to the percentage-of-completion method of accounting for long-term construction contracts during 2022. For tax purposes, the company employs the cost-recovery method and will continue this approach in the future. The information related to this change is as follows.

	Pretax Income from		
	Percentage-of-Completion	Cost-Recovery	Difference
Prior Years	\$980,000	\$730,000	\$250,000
2022	900,000	480,000	420,000

Instructions

- a. Assuming that the tax rate is 40%, what is the amount of net income that would be reported in 2022?
- b. What entry or entries is/are necessary to adjust the accounting records for the change in accounting policy?

E22.14 (LO 1) (Various Changes in Policy—Inventory Methods) Following is the net income of Benchley Instrument AG, a private company, computed under the two inventory methods using a periodic system.

	FIFO	Average-Cost
2019	€26,000	€23,000
2020	30,000	25,000
2021	29,000	27,000
2022	34,000	30,000

Instructions

(Ignore tax considerations.)

- a. Assume that in 2022 Benchley decided to change from the FIFO method to the average-cost method of pricing inventories. Prepare the journal entry necessary for the change that took

place during 2022, and show net income reported for 2019, 2020, 2021, and 2022.

- b. Assume that in 2022 Benchley, which had been using the average-cost method since beginning operations in 2019, changed to the FIFO method of pricing inventories. Prepare the journal entry necessary to record the change in 2022, and show net income reported for 2019, 2020, 2021, and 2022.

E22.15 (LO 3, 4) (Error Correction Entries) The first audit of the books of Fenimore Company was conducted for the year ended December 31, 2022. In examining the books, the auditor found that certain items had been overlooked or incorrectly handled in the last 3 years. These items were:

1. At the beginning of 2020, the company purchased a machine for \$510,000 (residual value of \$51,000) that had a useful life of 5 years. The bookkeeper used straight-line depreciation but failed to deduct the residual value in computing the depreciation base for the 3 years.
2. At the end of 2021, the company failed to accrue sales salaries of \$45,000.
3. A tax lawsuit that involved the year 2020 was settled late in 2022. It was determined that the company owed an additional \$85,000 in taxes related to 2020. The company did not record a liability in 2020 or 2021 because the possibility of loss was considered remote. Fenimore debited the \$85,000 to a loss account in 2022 and credited Cash for the same amount.
4. Fenimore Company purchased a copyright from another company early in 2020 for \$50,000. Fenimore had not amortized the copyright because its value had not diminished. The copyright has a useful life at purchase of 20 years.
5. In 2022, the company wrote off \$87,000 of inventory considered to be obsolete; this loss was charged directly to Retained Earnings and credited to Inventory.

Instructions

Prepare the journal entries necessary in 2022 to correct the books, assuming that the books have not been closed. Disregard effects of corrections on income tax.

E22.16 (LO 3, 4) (Error Analysis and Correcting Entry) You have been engaged to review the financial statements of Longfellow Lumber. In the course of your examination, you conclude that the bookkeeper hired during the current year is not doing a good job. You notice a number of irregularities.

1. Year-end salaries and wages payable of €3,400 were not recorded because the bookkeeper thought that “they were immaterial.”
2. Accrued vacation pay for the year of €31,100 was not recorded because the bookkeeper “never heard that you had to do that.”
3. Insurance for a 12-month period purchased on November 1 of this year was charged to insurance expense in the amount of €3,300 because “the amount of the check is about the same every year.”
4. Reported sales revenue for the year is €1,908,000. This includes all sales taxes collected for the year. The sales tax rate is 6%. Because the sales tax is forwarded to the Department of Revenue, the Sales Tax Expense account is debited. The bookkeeper thought that “the sales tax is a selling expense.” At the end of the current year, the balance in the Sales Tax Expense account is €103,400.

Instructions

Prepare the necessary correcting entries, assuming that Longfellow uses a calendar-year basis.

E22.17 (LO 3, 4) (Error Analysis and Correcting Entry) The reported net incomes for the first 2 years of Sinclair Products, Inc., were as follows: 2021, \$147,000; 2022, \$185,000. Early in 2023, the following errors were discovered.

1. Depreciation of equipment for 2021 was overstated \$19,000.
2. Depreciation of equipment for 2022 was understated \$38,500.
3. December 31, 2021, inventory was understated \$50,000.
4. December 31, 2022, inventory was overstated \$14,200.

Instructions

Prepare the correcting entry necessary when these errors are discovered. Assume that the books for 2022 are closed. (Ignore income tax considerations.)

E22.18 (LO 3, 4) (Error Analysis) Emerson Tool plc's December 31 year-end financial statements contained the following errors.

	December 31, 2021	December 31, 2022
Ending inventory	£9,600 understated	£7,100 overstated
Depreciation expense	£2,300 understated	—

An insurance premium of £60,000 was prepaid in 2021 covering the years 2021, 2022, and 2023. The entire amount was charged to expense in 2021. In addition, on December 31, 2022, fully depreciated machinery was sold for £15,000 cash, but the entry was not recorded until 2023. There were no other errors during 2021 or 2022, and no corrections have been made for any of the errors. (Ignore income tax considerations.)

Instructions

- a. Compute the total effect of the errors on 2022 net income.
- b. Compute the total effect of the errors on the amount of Emerson's working capital at December 31, 2022.
- c. Compute the total effect of the errors on the balance of Emerson's retained earnings at December 31, 2022.

E22.19 (LO 3, 4) (Error Analysis and Correcting Entries) A partial trial balance of Dickinson Ltd. is as follows on December 31, 2022.

	Dr.	Cr.
Supplies	R 2,500	
Salaries and wages payable		R 1,500
Interest receivable	5,100	
Prepaid insurance	90,000	
Unearned rent		—o—
Accrued interest payable		15,000

Additional adjusting data:

1. A physical count of supplies on hand on December 31, 2022, totaled R1,100.
2. Through oversight, the Salaries and Wages Payable account was not changed during 2022. Accrued salaries and wages on December 31, 2022, amounted to R4,400.
3. The Interest Receivable account was also left unchanged during 2022. Accrued interest on investments amounts to R4,350 on December 31, 2022.
4. The unexpired portions of the insurance policies totaled R65,000 as of December 31, 2022.
5. R24,000 was received on January 1, 2022, for the rent of a building for both 2022 and 2023. The entire amount was credited to rental income.
6. Depreciation for the year on equipment was erroneously recorded as R5,000 rather than the correct figure of R50,000.
7. A further review of depreciation calculations of prior years revealed that depreciation of R7,200 was not recorded. It was decided that this oversight should be corrected by a prior period adjustment.

Instructions

- a. Assuming that the books have not been closed, what are the adjusting entries necessary at December 31, 2022? (Ignore income tax considerations.)
- b. Assuming that the books have been closed, what are the adjusting entries necessary at December 31, 2022? (Ignore income tax considerations.)

E22.20 (LO 3, 4) (Error Analysis) The before-tax income for Fitzgerald Co. for 2021 was \$101,000, and for 2022 was \$77,400. However, the accountant noted that the following errors had been made.

1. Sales and revenue for 2021 included \$38,200 which had been received in cash during 2021, but for which the related products were delivered in 2022. Title did not pass to the purchaser until 2022.
2. The inventory on December 31, 2021, was understated by \$8,640.
3. In recording interest expense for both 2021 and 2022 on bonds payable, the bookkeeper made the following entry on an annual basis.

Interest Expense	15,000	
Cash		15,000

The bonds have a face value of \$250,000 and pay a stated interest rate of 6%. They were issued at a discount of \$10,000 on January 1, 2021 to yield an effective-interest rate of 7%. (Assume that the effective-interest method should be used.)

4. Ordinary repairs to equipment were erroneously charged to the Equipment account during 2021 and 2022. Repairs in the amount of \$8,000 in 2021 and \$9,400 in 2022 were so charged. The company applies a rate of 10% to the balance in the Equipment account at the end of the year in its determination of depreciation charges.

Instructions

Prepare a schedule showing the determination of corrected income before taxes for 2021 and 2022.

E22.21 (LO 3, 4) (Error Analysis) When the records of Aoki Ltd. were reviewed at the close of 2022, the errors listed as follows were discovered. For each item, indicate by a check mark in the appropriate column whether the error resulted in an overstatement, an understatement, or had no effect on net income for the years 2021 and 2022.

Item	2021			2022		
	Over-statement	Under-statement	No Effect	Over-statement	Under-statement	No Effect
1. Failure to reflect supplies on hand on statement of financial position at end of 2021.						
2. Failure to record the correct amount of ending 2021 inventory. The amount was understated because of an error in calculation.						
3. Failure to record, until 2022, merchandise purchased in 2021. Merchandise was also omitted from ending inventory in 2021 but was not yet sold.						
4. Failure to record accrued interest on notes payable in 2021; that amount was recorded when paid in 2022.						
5. Failure to record amortization of patent in 2022.						

Problems

P22.1 (LO 2, 3) Groupwork (Change in Estimate and Error Correction) Holtzman Company is in the process of preparing its financial statements for 2022. Assume that no entries for depreciation have been recorded in 2022. The following information related to depreciation of fixed assets is provided to you.

- Holtzman purchased equipment on January 2, 2019, for \$85,000. At that time, the equipment had an estimated useful life of 10 years with a \$5,000 residual value. The equipment is depreciated on a straight-line basis. On January 2, 2022, as a result of

additional information, the company determined that the equipment has a remaining useful life of 4 years with a \$3,000 residual value.

2. During 2022, Holtzman changed from the double-declining-balance method for its building to the straight-line method. The building originally cost \$300,000. It had a useful life of 10 years and a residual value of \$30,000. The following computations present depreciation on both bases for 2020 and 2021.

	2021	2020
Straight-line	\$27,000	\$27,000
Declining-balance	48,000	60,000

3. Holtzman purchased a machine on July 1, 2020, at a cost of \$120,000. The machine has a residual value of \$16,000 and a useful life of 8 years. Holtzman's bookkeeper recorded straight-line depreciation in 2020 and 2021 but failed to consider the residual value.

Instructions

- a. Prepare the journal entries to record depreciation expense for 2022 and correct any errors made to date related to the information provided.
- b. Show comparative net income for 2021 and 2022. Income before depreciation expense was \$300,000 in 2022, and was \$310,000 in 2021. (Ignore taxes.)

P22.2 (LO 1, 2, 3, 4) (Comprehensive Accounting Changes and Error Analysis)

Problem) Botticelli SpA was organized in late 2019 to manufacture and sell hosiery. At the end of its fourth year of operation, the company has been fairly successful, as indicated by the following reported net incomes.

2019	€140,000 ^a	2021	€205,000
2020	160,000	2022	276,000

^aIncludes a €10,000 increase because of change in bad debt expense rate.

The company has decided to expand operations and has applied for a sizable bank loan. The bank officer has indicated that the records should be audited and presented in comparative statements to facilitate analysis by the bank. Botticelli hired the auditing firm of Check & Doublecheck Co. and has provided the following additional information.

1. In early 2020, Botticelli changed its estimate from 2% to 1% of receivables on the amount of bad debt expense to be charged to operations. Bad debt expense for 2019, if a 1% rate had been used, would have been €10,000. The company therefore restated its net income for 2019.
2. The auditor discovered that in 2022, the company had changed its method of inventory pricing from average-cost to FIFO. The effect on the income statements for the previous years is as follows.

	2019	2020	2021	2022
Net income unadjusted—average-cost basis	€140,000	€160,000	€205,000	€276,000
Net income unadjusted—FIFO basis	155,000	165,000	215,000	260,000
	€ 15,000	€ 5,000	€ 10,000	(€ 16,000)

3. In 2022, the auditor discovered that:

- a. The company incorrectly overstated the ending inventory by €14,000 in 2021.
- b. A dispute developed in 2020 with the tax authorities over the deductibility of entertainment expenses. In 2019, the company was not permitted these deductions, but a tax settlement was reached in 2022 that allowed these expenses. As a result of the court's finding, tax expenses in 2022 were reduced by €60,000.

Instructions

- a. Indicate how each of these changes or corrections should be handled in the accounting records. (Ignore income tax considerations.)
- b. Present comparative net income numbers for the years 2019 to 2022. (Ignore income tax considerations.)

P22.3 (LO 1, 2, 3, 4) (Error Corrections and Accounting Changes) Chen Group is in the process of adjusting and correcting its books at the end of 2022. In reviewing its records, the following information is compiled.

1. Chen has failed to accrue sales commissions payable at the end of each of the last 2 years, as follows.

December 31, 2021	¥3,500,000
December 31, 2022	¥2,500,000

2. In reviewing the December 31, 2022, inventory, Chen discovered errors in its inventory-taking procedures that have caused inventories for the last 3 years to be incorrect, as follows.

December 31, 2020	Understated	¥16,000,000
December 31, 2021	Understated	¥19,000,000
December 31, 2022	Overstated	¥ 6,700,000

Chen has already made an entry that established the incorrect December 31, 2022, inventory amount.

3. At December 31, 2022, Chen decided to change the depreciation method on its office equipment from double-declining-balance to straight-line. The equipment had an original cost of ¥100,000,000 when purchased on January 1, 2020. It has a 10-year useful life and no residual value. Depreciation expense recorded prior to 2022 under the double-declining-balance method was ¥36,000,000. Chen has already recorded 2022 depreciation expense of ¥12,800,000 using the double-declining-balance method.
4. Before 2022, Chen accounted for its income from long-term construction contracts on the cost-recovery basis. Early in 2022, Chen changed to the percentage-of-completion basis for accounting purposes. It continues to use the cost-recovery method for tax purposes. Income for 2022 has been recorded using the percentage-of-completion method. The information follows.

	Pretax Income from	
	Percentage-of-Completion	Cost-Recovery
Prior to 2022	¥150,000,000	¥105,000,000
2022	60,000,000	20,000,000

Instructions

Prepare the journal entries necessary at December 31, 2022, to record the above corrections and changes. The books are still open for 2022. The income tax rate is 40%. Chen has not yet recorded its 2022 income tax expense and payable amounts, so current-year tax effects may be ignored. Prior-year tax effects must be considered in item 4.

P22.4 (LO 2) Groupwork Ethics (Accounting Changes) Aston plc performs year-end planning in November of each year before its calendar year ends in December. The preliminary estimated net income is £3 million. The CFO, Rita Warren, meets with the company president, J. B. Aston, to review the projected numbers. She presents the following projected information.

Aston plc Projected Income Statement For the Year Ended December 31, 2022		
Sales		£29,000,000
Cost of goods sold	£14,000,000	
Depreciation	2,600,000	
Operating expenses	6,400,000	23,000,000
Income before income tax		6,000,000
Income tax		3,000,000
Net income		£ 3,000,000

Aston plc Selected Statement of Financial Position Information At December 31, 2022	
Estimated cash balance	£ 5,000,000
Debt investments (held-for-collection)	10,000,000
Security fair value adjustment account (1/1/22)	200,000

Estimated fair value at December 31, 2022:

Investment	Cost	Estimated Fair Value
A	£ 2,000,000	£ 2,200,000
B	4,000,000	3,900,000
C	3,000,000	3,000,000
D	1,000,000	1,800,000
Total	£10,000,000	£10,900,000

Other information at December 31, 2022:

Equipment	£3,000,000
Accumulated depreciation (5-year SL)	1,200,000
New robotic equipment (purchased 1/1/22)	5,000,000
Accumulated depreciation (5-year DDB)	2,000,000

The company has never used robotic equipment before, and Warren assumed an accelerated method because of the rapidly changing technology in robotic equipment. The company normally uses straight-line depreciation for production equipment.

Aston explains to Warren that it is important for the company to show a £7,000,000 income before taxes because Aston receives a £1,000,000 bonus if the income before taxes and bonus reaches £7,000,000. Aston also does not want the company to pay more than £3,000,000 in income taxes to the government.

Instructions

- What can Warren do within IFRS to accommodate the president's wishes to achieve £7,000,000 in income before taxes and bonus? Present the revised income statement based on your decision.
- Are the actions ethical? Who are the stakeholders in this decision, and what effect do Warren's actions have on their interests?

P22.5 (LO 1) (Change in Policy—Inventory—Periodic) The management of Utrillo Instrument Ltd. had concluded, with the concurrence of its independent auditors, that results of operations would be more fairly presented if Utrillo changed its method of pricing inventory from FIFO to average-cost in 2022. Given below is the 5-year summary of income under FIFO and a schedule of what the inventories would be if recorded according to the average-cost method (amounts in millions, except earnings per share).

Utrillo Instrument Ltd. Statement of Income and Retained Earnings For the Years Ended May 31					
	2018	2019	2020	2021	2022
Sales—net	¥13,964	¥15,506	¥16,673	¥18,221	¥18,898
Cost of goods sold Beginning inventory	1,000	1,100	1,000	1,115	1,237
Purchases	13,000	13,900	15,000	15,900	17,100
Ending inventory	(1,100)	(1,000)	(1,115)	(1,237)	(1,369)
Total	12,900	14,000	14,885	15,778	16,968
Gross profit	1,064	1,506	1,788	2,443	1,930
Administrative expenses	700	763	832	907	989
Income before taxes	364	743	956	1,536	941
Income taxes (50%)	182	372	478	768	471
Net income	182	371	478	768	470
Retained earnings—beginning	1,206	1,388	1,759	2,237	3,005
Retained earnings—ending	¥ 1,388	¥ 1,759	¥ 2,237	¥ 3,005	¥ 3,475
Earnings per share	¥1.82	¥3.71	¥4.78	¥7.68	¥4.70

Schedule of Inventory Balances Using Average-Cost Method
For the Year Ended May 31

2017	2018	2019	2020	2021	2022
¥1,010	¥1,124	¥1,101	¥1,270	¥1,500	¥1,720

Instructions

Prepare comparative statements for the 5 years, assuming that Utrillo changed its method of inventory costing to average-cost. Indicate the effects on net income and earnings per share for

the years involved. Utrillo Instruments started business in 2017. (All amounts except EPS are rounded up to the nearest yen.)

P22.6 (LO 2, 3, 4) (Accounting Changes and Error Analysis) On December 31, 2022, before the books were closed, the management and accountants of Madrasa SA made the following determinations about three depreciable assets.

1. Depreciable asset A was purchased January 2, 2019. It originally cost €540,000 and, for depreciation purposes, the straight-line method was originally chosen. The asset was originally expected to be useful for 10 years and have a zero residual value. In 2022, the decision was made to change the depreciation method from straight-line to sum-of-the-years'-digits, and the estimates relating to useful life and residual value remained unchanged.
2. Depreciable asset B was purchased January 3, 2018. It originally cost €180,000 and, for depreciation purposes, the straight-line method was chosen. The asset was originally expected to be useful for 15 years and have a zero residual value. In 2022, the decision was made to shorten the total life of this asset to 9 years and to estimate the residual value at €3,000.
3. Depreciable asset C was purchased January 5, 2018. The asset's original cost was €160,000, and this amount was entirely expensed in 2018. This particular asset has a 10-year useful life and no residual value. The straight-line method was chosen for depreciation purposes.

Additional data:

1. Income in 2022 before depreciation expense amounted to €400,000.
2. Depreciation expense on assets other than A, B, and C totaled €55,000 in 2022.
3. Income in 2021 was reported at €370,000.
4. Ignore all income tax effects.
5. 100,000 ordinary shares were outstanding in 2021 and 2022.

Instructions

- a. Prepare all necessary entries in 2022 to record these determinations.
- b. Prepare comparative retained earnings statements for Madrasa SA for 2021 and 2022. The company had retained earnings of €200,000 at December 31, 2020.

P22.7 (LO 3, 4) Groupwork (Error Corrections) You have been assigned to examine the financial statements of Zarle Company for the year ended December 31, 2022. You discover the following situations.

1. Depreciation of \$3,200 for 2022 on delivery vehicles was not recorded.
2. The physical inventory count on December 31, 2021, improperly excluded merchandise costing \$19,000 that had been temporarily stored in a public warehouse. Zarle uses a periodic inventory system.
3. A collection of \$5,600 on account from a customer received on December 31, 2022, was not recorded until January 2, 2023.

4. In 2022, the company sold for \$3,700 fully depreciated equipment that originally cost \$25,000. The company credited the proceeds from the sale to the Equipment account.
5. During November 2022, a competitor company filed a patent-infringement suit against Zarle claiming damages of \$220,000. The company's legal counsel has indicated that an unfavorable verdict is probable and a reasonable estimate of the court's award to the competitor is \$125,000. The company has not reflected or disclosed this situation in the financial statements.
6. Zarle has a portfolio of investments that it manages to profit from short-term price changes. No entry has been made to adjust to fair value. Information on cost and fair value is as follows.

	Cost	Fair Value
December 31, 2021	\$95,000	\$95,000
December 31, 2022	\$84,000	\$82,000

7. At December 31, 2022, an analysis of payroll information shows salaries and wages payable of \$12,200. The Salaries and Wages Payable account has a balance of \$16,000 at December 31, 2022, which was unchanged from its balance at December 31, 2021.
8. A large piece of equipment was purchased on January 3, 2022, for \$40,000 and was charged to Maintenance and Repairs Expense. The equipment is estimated to have a service life of 8 years and no residual value. Zarle normally uses the straight-line depreciation method for this type of equipment.
9. A \$12,000 insurance premium paid on July 1, 2021, for a policy that expires on June 30, 2024, was charged to insurance expense.
10. A trademark was acquired at the beginning of 2021 for \$50,000. No amortization has been recorded since its acquisition. The maximum allowable amortization period is 10 years.

Instructions

Assume the trial balance has been prepared but the books have not been closed for 2022. Assuming all amounts are material, prepare journal entries showing the adjustments that are required. (Ignore income tax considerations.)

P22.8 (LO 3, 4) Groupwork (Comprehensive Error Analysis) On March 5, 2023, you were hired by Hemingway plc, a closely held company, as a staff member of its newly created internal auditing department. While reviewing the company's records for 2021 and 2022, you discover that no adjustments have yet been made for the items listed below.

Items

1. Interest income of £14,100 was not accrued at the end of 2021. It was recorded when received in February 2022.
2. A computer costing £4,000 was expensed when purchased on July 1, 2021. It is expected to have a 4-year life with no residual value. The company typically uses straight-line depreciation for all fixed assets.
3. Research costs of £33,000 were incurred early in 2021. They were capitalized and were to be amortized over a 3-year period. Amortization of £11,000 was recorded for 2021 and £11,000 for 2022.

4. On January 2, 2021, Hemingway leased a building for 5 years at a monthly rental of £8,000. On that date, the company paid the following amounts, which were expensed when paid.

Security deposit	£20,000
First month's rent	8,000
Last month's rent	8,000
	<u>£36,000</u>

5. The company received £36,000 from a customer at the beginning of 2021 for services that it is to perform regularly over a 3-year period beginning in 2021. None of the amount received was reported as unearned revenue at the end of 2021.
6. Merchandise inventory costing £18,200 was in the warehouse at December 31, 2021, but was incorrectly omitted from the physical count at that date. The company uses the periodic inventory method.

Instructions

Indicate the effect of any errors on the net income figure reported on the income statement for the year ending December 31, 2021, and the retained earnings figure reported on the statement of financial position at December 31, 2022. Assume all amounts are material and ignore income tax effects. Using the following format, enter the appropriate dollar amounts in the appropriate columns. Consider each item independent of the other items. It is not necessary to total the columns on the grid.

Item	Net Income for 2021		Retained Earnings at 12/31/22	
	Understated	Overstated	Understated	Overstated

P22.9 (LO 3, 4) (Error Analysis) Lowell AG has used the accrual basis of accounting for several years. A review of the records, however, indicates that some expenses and revenues have been handled on a cash basis because of errors made by an inexperienced bookkeeper. Income statements prepared by the bookkeeper reported €29,000 net income for 2021 and €37,000 net income for 2022. Further examination of the records reveals that the following items were handled improperly.

- Rent was received from a tenant in December 2021. The amount, €1,000, was recorded as income at that time even though the rental pertained to 2022.
- Salaries and wages payable on December 31 have been consistently omitted from the records of that date and have been entered as expenses when paid in the following year. The amounts of the accruals recorded in this manner were:

December 31, 2020	€1,100
December 31, 2021	1,200
December 31, 2022	940

- Invoices for office supplies purchased have been charged to expense accounts when received. Inventories of supplies on hand at the end of each year have been ignored, and no entry has been made for them.

December 31, 2020	€1,300
December 31, 2021	940

December 31, 2022	1,420
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Instructions

Prepare a schedule that will show the corrected net income for the years 2021 and 2022. All items listed should be labeled clearly. (Ignore income tax considerations.)

P22.10 (LO 3, 4) (Error Analysis and Correcting Entries) You have been asked by a client to review the records of Roberts Company, a small manufacturer of precision tools and machines. Your client is interested in buying the business, and arrangements have been made for you to review the accounting records. Your examination reveals the following information.

1. Roberts Company commenced business on April 1, 2019, and has been reporting on a fiscal year ending March 31. The company has never been audited, but the annual statements prepared by the bookkeeper reflect the following income before closing and before deducting income taxes.

Year Ended March 31	Income Before Taxes
2020	\$ 71,600
2021	111,400
2022	103,580

2. A relatively small number of machines have been shipped on consignment. These transactions have been recorded as ordinary sales and billed as such. On March 31 of each year, machines billed and in the hands of consignees amounted to:

2020	\$6,500
2021	none
2022	5,590

The sales prices above were determined by adding 25% to cost. Assume that the consigned machines are sold the following year.

3. On March 30, 2021, two machines were shipped to a customer on a C.O.D. basis. The sale was not entered until April 5, 2021, when cash was received for \$6,100. The machines were not included in the inventory at March 31, 2021. (Title passed on March 30, 2021.)
4. All machines are sold subject to a 5-year warranty. It is estimated that the expense ultimately to be incurred in connection with the warranty will amount to $\frac{1}{2}$ of 1% of sales. The company has charged an expense account for warranty costs incurred.

Sales per books and warranty costs were as follows.

Year Ended March 31	Sales	Warranty Expense for Sales Made in			Total
		2020	2021	2022	
2020	\$ 940,000	\$760			\$ 760
2021	1,010,000	360	\$1,310		1,670
2022	1,795,000	320	1,620	\$1,910	3,850

5. Bad debts have been recorded on a direct write-off basis. Experience of similar enterprises indicates that losses will approximate $\frac{1}{4}$ of 1% of receivables. Bad debts written off were:

	Bad Debts Incurred on Sales Made in	Total

	2020	2021	2022	
2020	\$750			\$ 750
2021	800	\$ 520		1,320
2022	350	1,800	\$1,700	3,850

6. The bank deducts 6% on all contracts financed. Of this amount, $\frac{1}{2}\%$ is placed in a reserve to the credit of Roberts Company, which is refunded to Roberts as finance contracts are paid in full. The reserve established by the bank has not been reflected in the books of Roberts. The excess of credits over debits (net increase) to the Dealer Fund Reserve account with Roberts on the books of the bank for each fiscal year were as follows.

2020	\$ 3,000
2021	3,900
2022	5,100
	<u>\$12,000</u>

7. Commissions on sales have been entered when paid. Commissions payable on March 31 of each year were as follows.

2020	\$1,400
2021	900
2022	1,120

8. A review of the company minutes reveals the manager is entitled to a bonus of 1% of the income before deducting income taxes and the bonus. The bonuses have never been recorded or paid. (Use Salaries and Wages accounts.)

Instructions

- Present a schedule showing the revised income before income taxes for each of the years ended March 31, 2020, 2021, and 2022. (Make computations to the nearest whole dollar.)
- Prepare the journal entry or entries you would give the bookkeeper to correct the books. Assume the books have not yet been closed for the fiscal year ended March 31, 2022. Disregard correction of income taxes.

Concepts for Analysis

CA22.1 (LO 1, 2, 3, 4) Groupwork (Analysis of Various Accounting Changes and Errors) Joblonsky Jewelry has recently hired a new independent auditor, Karen Ogleby, who says she wants "to get everything straightened out." Consequently, she has proposed the following accounting changes in connection with Joblonsky's 2022 financial statements.

- At December 31, 2021, the client had a receivable of €820,000 from Hendricks SA on its statement of financial position. Hendricks SA has gone bankrupt, and no recovery is expected. The client proposes to write off the receivable as a prior period item.
- The client proposes the following changes in depreciation policies.
 - For office furniture and fixtures, it proposes to change from a 10-year useful life to an 8-year life. If this change had been made in prior years, retained earnings at December 31, 2021, would have been €250,000 less. The effect of the change on 2022 income alone is a reduction of €60,000.

- b. For its equipment in the leasing division, the client proposes to adopt the sum-of-the-years'-digits depreciation method. The client had never used SYD before. The first year the client operated a leasing division was 2022. If straight-line depreciation were used, 2022 income would be €110,000 greater.
3. In preparing its 2021 statements, one of the client's bookkeepers overstated ending inventory by €235,000 because of a mathematical error. The client proposes to treat this item as a prior period adjustment.
4. In the past, the client has spread preproduction costs in its furniture division over 5 years. Because its latest furniture is of the "fad" type, it appears that the largest volume of sales will occur during the first 2 years after introduction. Consequently, the client proposes to amortize preproduction costs on a per-unit basis, which will result in expensing most of such costs during the first 2 years after the furniture's introduction. If the new accounting method had been used prior to 2022, retained earnings at December 31, 2021, would have been €375,000 less.
5. For the nursery division, the client proposes to switch from FIFO to average-cost inventories because it believes that average-cost will provide a better matching of current costs with revenues. The effect of making this change on 2022 earnings will be an increase of €320,000. The client says that the effect of the change on December 31, 2021, retained earnings cannot be determined.
6. To achieve a better measure of income in its building construction division, the client proposes to switch from the cost-recovery method of accounting to the percentage-of-completion method. Had the percentage-of-completion method been employed in all prior years, retained earnings at December 31, 2021, would have been €1,075,000 greater.

Instructions

- a. For each of the changes described above, decide whether:
1. The change involves an accounting policy, accounting estimate, or correction of an error.
 2. Restatement of opening retained earnings is required.
- b. What is the proper adjustment to the December 31, 2021, retained earnings?

CA22.2 (LO 1, 2, 3, 4) (Analysis of Various Accounting Changes and Errors) Various types of accounting changes can affect the financial statements of a business differently. Assume that the following list describes changes that have a material effect on the financial statements for the current year of your business.

1. A change from the cost-recovery method to the percentage-of-completion method of accounting for long-term construction-type contracts.
2. A change in the estimated useful life of previously recorded fixed assets as a result of newly acquired information.
3. A change from deferring and amortizing preproduction costs to recording such costs as an expense when incurred because future benefits of the costs have become doubtful. The new accounting method was adopted in recognition of the change in estimated future benefits.
4. A change from including the employer share of taxes with payroll tax expenses to including it with "Retirement benefits" on the income statement.

5. Correction of a mathematical error in inventory pricing made in a prior period.
6. A change in the method of accounting for leases for tax purposes to conform with the financial accounting method. As a result, both deferred and current taxes payable changed substantially.
7. A change from the FIFO method of inventory pricing to the average-cost method of inventory pricing.

Instructions

Identify the type of change that is described in each item above and indicate whether the prior year's financial statements should be retrospectively adjusted or restated when presented in comparative form with the current year's financial statements.

CA22.3 (LO 1, 2, 3) (Analysis of Three Accounting Changes and Errors) The following are three independent, unrelated sets of facts relating to accounting changes.

Situation 1: Sanford Company is in the process of having its first audit. The company has used the cash basis of accounting for revenue recognition. Sanford president, B. J. Jimenez, is willing to change to the accrual method of revenue recognition.

Situation 2: Hopkins plc decides in January 2022 to change from FIFO to weighted-average pricing for its inventories.

Situation 3: Marshall SE determined that the depreciable lives of its fixed assets are too long at present to fairly match the cost of the fixed assets with the revenue produced. The company decided at the beginning of the current year to reduce the depreciable lives of all of its existing fixed assets by 5 years.

Instructions

For each of the situations described, provide the information indicated below.

- a. Type of accounting change.
- b. Manner of reporting the change under IFRS, including a discussion, where applicable, of how amounts are computed.
- c. Effect of the change on the statement of financial position and income statement.

CA22.4 (LO 1, 2, 3, 4) Writing (Analysis of Various Accounting Changes and Errors)

Katherine Irving, controller of Lotan Corp., is aware that IFRS has issued a pronouncement on accounting changes. After reading the pronouncement, she is confused about what action should be taken on the following items related to Lotan Corp. for the year 2022.

1. In 2022, Lotan decided to change its policy on accounting for certain marketing costs. Previously, the company had chosen to defer and amortize all marketing costs over at least 5 years because Lotan believed that a return on these expenditures did not occur immediately. Recently, however, the time differential has considerably shortened, and Lotan is now expensing the marketing costs as incurred.
2. In 2022, the company examined its entire policy relating to the depreciation of plant equipment. Plant equipment had normally been depreciated over a 15-year period, but recent experience has indicated that the company was using too short a period in its estimates and that the assets should be depreciated over a 20-year period.

3. One division of Lotan Corp., Hawthorne Co., has consistently shown an increasing net income from period to period. On closer examination of its operating statement, it is noted that bad debt expense and inventory obsolescence charges are much lower than in other divisions. In discussing the situation with the controller of this division, information emerges that the controller has increased his net income each period by knowingly making low estimates related to the write-off of receivables and inventory.
4. In 2022, the company purchased new machinery that should increase production dramatically. The company has decided to depreciate this machinery on an accelerated basis even though other machinery is depreciated on a straight-line basis.
5. All equipment sold by Lotan is subject to a 3-year warranty. It has been estimated that the expense ultimately to be incurred on these machines is 1% of sales. In 2022, because of a production breakthrough, it is now estimated that $\frac{1}{2}$ of 1% of sales is sufficient. In 2020 and 2021, warranty expense was computed as \$64,000 and \$70,000, respectively. The company now believes that these warranty costs should be reduced by 50%.
6. In 2022, the company decided to change its method of inventory pricing from average-cost to the FIFO method. The effect of this change on prior years is to increase 2020 income by \$65,000 and increase 2021 income by \$20,000.

Instructions

Katherine Irving has come to you, as her accountant, for advice about the situations above. Prepare a report, indicating the appropriate accounting treatment that should be given each of these situations.

CA22.5 (LO 2) Writing (Changes in Estimate) As a public accountant, you have been contacted by Joe Davison, CEO of Sports-Pro Athletics, a manufacturer of a variety of athletic equipment. He has asked you how to account for the following changes.

1. Sports-Pro appropriately changed its depreciation method for its production machinery from the double-declining-balance method to the production method effective January 1, 2022.
2. Effective January 1, 2022, Sports-Pro appropriately changed the residual values used in computing depreciation for its office equipment.

Instructions

Write a 1–1.5 page letter to Joe Davison, explaining how each of the above changes should be presented in the December 31, 2022, financial statements.

CA22.6 (LO 2) Ethics (Change in Estimate, Ethics) Mike Crane, audit senior of a large public accounting firm, has just been assigned to the Frost Corporation's annual audit engagement. Frost has been a client of Crane's firm for many years. Frost is a fast-growing business in the commercial construction industry. In reviewing the fixed asset ledger, Crane discovered a series of unusual accounting changes, in which the useful lives of assets, depreciated using the straight-line method, were substantially lowered near the midpoint of the original estimate. For example, the useful life of one dump truck was changed from 10 to 6 years during its fifth year of service. Kevin James, Frost's accounting manager tells Mike, "I don't really see your problem. After all, it's perfectly legal to change an accounting estimate. Besides, our CEO likes to see big earnings!"

Instructions

Answer the following questions.

- a. What are the ethical issues concerning Frost's practice of changing the useful lives of fixed assets?
- b. Who could be harmed by Frost's unusual accounting changes?
- c. What should Crane do in this situation?

Using Your Judgment

Financial Reporting Problem

Marks and Spencer plc (M&S)

The financial statements of **M&S** (GBR) are presented in [Appendix A](#). The complete annual report, including the notes to the financial statements, is available online.

Instructions

Refer to M&S's financial statements and the accompanying notes to answer the following questions.

- a. Were there changes in accounting policies reported by M&S during the two years covered by its income statements (2018–2019)? If so, describe the nature of the change and the year of change.
- b. What types of estimates did M&S discuss in 2019?

Comparative Analysis Case

adidas and Puma

The financial statements of **adidas** (DEU) and **Puma** (DEU) are presented in [Appendices B](#) and [C](#), respectively. The complete annual reports, including the notes to the financial statements, are available online.

Instructions

Use the companies' financial information to answer the following questions.

- a. Identify the changes in accounting policies reported by Puma during the 2 years covered by its income statements (2017–2018). Describe the nature of the change and the year of change.
- b. Identify the changes in accounting policies reported by adidas during the 2 years covered by its income statements (2017–2018). Describe the nature of the change and the year of change.
- c. For each change in accounting policy by adidas and Puma, identify, if possible, the cumulative effect of each change on prior years and the effect on operating results in the year of change.

Accounting, Analysis, and Principles

In preparation for significant international operations, ABC Co. has adopted a plan to gradually shift to the same accounting policies as used by its international competitors. Part of this plan includes a switch from average-cost inventory accounting to FIFO. ABC decides to make the

switch to FIFO at January 1, 2022. The following data pertains to ABC's 2022 financial statements.

Sales	\$550
Inventory purchases	350
12/31/22 inventory (using FIFO)	580
Compensation expense	17

All sales and purchases were with cash as were all of 2022's compensation expense (ignore taxes). ABC's plant, property, and equipment cost \$400 and has an estimated useful life of 10 years with no residual value.

ABC Co. reported the following for fiscal 2021 (amounts are in millions).

ABC Co. Statement of Financial Position At December 31, 2021					
	2021	2020		2021	2020
Plant, property, and equipment	\$ 400	\$ 400	Retained earnings	\$ 685	\$ 540
Accumulated depreciation	(80)	(40)	Share capital	500	500
Inventory	500	480			
Cash	365	200			
Total assets	<u>\$1,185</u>	<u>\$1,040</u>	Total equity	<u>\$1,185</u>	<u>\$1,040</u>

ABC Co. Income Statement For the Year Ended December 31, 2021					
	Sales		\$ 500		
	Cost of goods sold		(300)		
	Depreciation expense		(40)		
	Compensation expense		(15)		
	Net income		<u>\$145</u>		

Summary of Significant Accounting Policies

Inventory: The company accounts for inventory by the average-cost method. The current cost of the company's inventory, which approximates FIFO, was \$60 and \$50 higher at the end of fiscal 2021 and 2020, respectively, than those reported in the statement of financial position.

Accounting

Prepare ABC's December 31, 2022, statement of financial position and an income statement for the year ended December 31, 2022. In columns beside 2022's numbers, include 2021's numbers as they would appear in the 2022 financial statements for comparative purposes.

Analysis

Compute ABC's inventory turnover for 2021 under both average-cost and FIFO. Assume averages are equal to year-end balances. What causes the differences in this ratio between average-cost and FIFO?

Principles

Briefly explain, in terms of the policies discussed in Chapter 22, why IFRS requires that companies that change accounting policies restate the prior year's financial statement data.

Bridge to the Profession

Authoritative Literature References

- [1] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003).
- [2] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), paras. 19–22.
- [3] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 13.
- [4] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), paras. 11–12.
- [5] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 29.
- [6] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 24.
- [7] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 29(e).
- [8] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), paras. 37–38.
- [9] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 39.
- [10] International Accounting Standard 8, *Accounting Policies, Changes in Accounting Estimates, and Errors* (London, U.K.: International Accounting Standards Committee Foundation, 2003), par. 5.

Research Case

As part of the year-end accounting process and review of operating policies, Cullen Group is considering changing from the straight-line method to an accelerated method when accounting for its equipment. Your supervisor wonders how the company will report this change. It has been a few years since he took intermediate accounting, and he cannot remember whether this change would be treated in a retrospective or prospective manner. Your supervisor wants you to research the authoritative guidance on a change in accounting policy related to depreciation methods.

Instructions

Access the IFRS authoritative literature at the IFRS website (you may register for free IFRS access at this site). When you have accessed the documents, you can use the search tool in your Internet browser to respond to the following questions. (Provide paragraph citations.)

- a. What are the accounting and reporting guidelines for a change in accounting related to depreciation methods?
- b. What conditions justify a change in depreciation method, as contemplated by Cullen Group?

Global Accounting Insights

LEARNING OBJECTIVE 5

Compare the procedures for accounting changes and error analysis under IFRS and U.S. GAAP.

The FASB has issued guidance on changes in accounting policies, changes in estimates, and corrections of errors. These changes essentially converge U.S. GAAP with *IAS 8*.

Relevant Facts

Following are the key similarities and differences between U.S. GAAP and IFRS related to the accounting for accounting changes.

Similarities

- The accounting for changes in estimates is similar between U.S. GAAP and IFRS.
- Both U.S. GAAP and IFRS use the retrospective approach for accounting for a change in accounting policy (principle).
- Under U.S. GAAP and IFRS, if determining the effect of a change in accounting policy is considered impracticable, then a company should report the effect of the change in the period in which it believes it practicable to do so, which may be the current period.

Differences

- One area in which U.S. GAAP and IFRS differ is the reporting of error corrections in previously issued financial statements. While both sets of standards require restatement, U.S. GAAP is an absolute standard—there is no exception to this rule.
- Under U.S. GAAP, the impracticability exception applies only to changes in accounting principle (policy). Under IFRS, this exception applies both to changes in accounting principles (policies) and to the correction of errors.
- U.S. GAAP has detailed guidance on the accounting and reporting of indirect effects. As indicated in the chapter, IFRS (*IAS 8*) does not specifically address the accounting and reporting for indirect effects of changes in accounting principles.

About the Numbers

A tangential discussion of accounting changes concerns how companies that follow IFRS report financial information related to the equity method of accounting. Under the equity method, the

investor increases its investment for the pro-rata share of the net income of the investee (often referred to as an associated company under IFRS). On the other hand, the investor reduces its investment for any dividends received from the investee. Both IFRS and U.S. GAAP follow this accounting approach.

However, there is a subtle difference between IFRS and U.S. GAAP in how the investor evaluates the accounting policies of the investee. To illustrate, assume that Kirkland Company (the investor company) uses the FIFO inventory method, and Margo Company (the investee company) uses average-cost for its inventory valuation. If Kirkland follows IFRS, Kirkland must conform the accounting policies of Margo to its own accounting policies. Therefore, Kirkland adjusts the net income of Margo so its net income is reported on the FIFO basis.

This procedure is not used under U.S. GAAP. Under U.S. GAAP, Kirkland ignores the fact that Margo uses a different method of inventory valuation. Kirkland records its pro-rata share of the net income of Margo without adjusting for the fact that Margo uses a different inventory valuation method. As a result, under U.S. GAAP there is a lack of comparability in the inventory methods used to report net income for Kirkland Company.

On the Horizon

Because U.S. GAAP and IFRS are, for the most part, similar in the area of accounting changes and reporting the effects of errors, there is no active project in this area. A related development involves the presentation of comparative data. U.S. GAAP (SEC) requires comparative information for a three-year period. Under IFRS, when a company prepares financial statements on a new basis, two years of comparative data are reported. Use of the shorter comparative data period must be addressed before U.S. companies can adopt IFRS. The IASB has a project related to materiality and accounting changes, which could lead to additional differences in the accounting for this area relative to U.S. GAAP. See the IFRS website for more information.

GAAP Self-Test Questions

1. Which of the following is **false?**

- a. U.S. GAAP and IFRS have the same absolute standard regarding the reporting of error corrections in previously issued financial statements.
- b. The accounting for changes in estimates is similar between U.S. GAAP and IFRS.
- c. Under IFRS, the impracticability exception applies both to changes in accounting principles and to the correction of errors.
- d. U.S. GAAP has detailed guidance on the accounting and reporting of indirect effects; IFRS does not.

2. Which of the following is **not classified as an accounting change by U.S. GAAP?**

- a. Change in accounting policy.
- b. Change in accounting estimate.
- c. Errors in financial statements.
- d. None of the above.

3. U.S. GAAP requires companies to use which of the following methods for reporting changes in accounting policies?

- a. Cumulative effect approach.
- b. Retrospective approach.
- c. Prospective approach.
- d. Averaging approach.

4. Under U.S. GAAP, the retrospective approach should **not** be used if:

- a. retrospective application requires assumptions about management's intent in a prior period.
- b. the company does not have trained staff to perform the analysis.
- c. the effects of the change have counterbalanced.
- d. the effects of the change have not counterbalanced.

5. Which of the following is **true** regarding whether U.S. GAAP specifically addresses the accounting and reporting for effects of changes in accounting policies?

	Direct effects	Indirect effects
a.	Yes	Yes
b.	No	No
c.	No	Yes
d.	Yes	No

GAAP Concepts and Application

GAAP22.1 What is the major difference in accounting for errors under IFRS versus U.S. GAAP?

GAAP22.2 How are direct and indirect changes in accounting policy reported under U.S. GAAP?

GAAP22.3 What is the difference in approach between U.S. GAAP and IFRS regarding the equity method of accounting for the investor?

Answers to GAAP Self-Test Questions

- 1.** a **2.** c **3.** b **4.** a **5.** a

Notes

1 In some cases, a particular transaction is not specifically addressed by IFRS. In this situation, IAS 8 sets out a hierarchy of guidance to be considered in the selection of an accounting policy. The primary requirement is that management must use judgment to develop information that is relevant and representationally faithful. In making that judgment, it should use the following sources in descending order: (1) the requirements and guidance in IFRS dealing with similar and related issues; (2) the definitions, recognition criteria, and measurement concepts for the elements in the Conceptual Framework; and (3) other materials, such as standards from other countries, that use a similar conceptual framework. **[4]**

2 Financial statements of subsequent periods need not repeat these disclosures. **[5]**

3 The rationale for this approach is that companies should recognize, in the period the adoption of the new accounting policy occurs (not the prior period), the effect on cash flows. That is, the accounting change is a necessary “past event” in the definition of an asset or liability that gives rise to the accounting recognition of the indirect effect in the current period.

4 The term **retrospective restatement** is used for the process of revising previously issued financial statements to reflect a correction of an error. This term distinguishes an error correction from a change in accounting policy, referred to as retrospective application.

Source: Adapted from “2018 Financial Restatements: An Eighteen Year Comparison,” *Audit Analytics Trend Reports* (August 26, 2019).