Financial Statement Analysis

Learning Module 1
Intercorporate Investments

LOS: Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

LOS: Compare and contrast IFRS and US GAAP in their classification, measurement, and disclosure of investments in financial assets, investment in associates, joint ventures, business combinations, and special purpose and variable interest entities.

LOS: Analyze how different methods used to account for intercorporate investments affect financial statements and ratios.

Note: Candidates are expected to be familiar with the overall analytical framework as well as the alternative accounting methods for financial analysis and valuation as provided in the assigned reading. Candidates are not responsible for changes (new rulings and/or pronouncements) that occurred after the material was written.

Basic Corporate Investment Categories

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Over the last few years, IFRS and US GAAP have worked to reduce differences in accounting standards that apply to the classification, measurement, and disclosure of intercorporate investments. The resulting standards have improved the relevance, transparency, and comparability of information provided in financial statements; however, some differences remain. The terminology used in this reading is based on IFRS. US GAAP may not use identical terminology, but in most cases the terminology is similar.

Investments in marketable debt and equity securities can be categorized as:

- Investments in **financial assets**: The investor has no significant influence or control over the operations of the investee. Generally, the investor holds less than 20% equity interest in the investee.
- Investments in **associates**: The investor can exert significant influence, but not control, over the investee. Generally, the investor holds between 20% and 50% equity interest in the investee.

- **Business combinations** (including investments in subsidiaries): The investor has control over the investee. Generally, an equity interest exceeding 50% indicates this control.
- **Joint ventures**, in which control is shared by two or more entities.

Note that the classification of an investment is based on the degree of influence or control, not purely on the holding percentages provided above.

Exhibit 1 Summary of accounting treatment for investments

	In financial assets	In associates	In business combinations	In joint ventures
Influence	Not significant	Significant	Controlling	Shared control
Typical percentage interest	Usually <20%	Usually 20% – 50%	Usually > 50%	Varies
Financial reporting treatment	Classified as: • Fair value through profit or loss • Fair value through other comprehensive income • Amortized cost	Equity method	Consolidation	IFRS: Equity method

Investments in Financial Assets: IFRS 9

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Both the international (IASB) and United States (FASB) accounting standards boards have developed new standards for financial investments.

- The IASB issued IFRS 9, Financial Instruments, which became effective on January 1, 2018.
- The FASB issued ASC 825 in January 2016, with the standard being effective for periods after December 15, 2017. This standard is in significant (but not total) convergence with IFRS with respect to financial instruments.

IFRS 9 is based on an approach that considers (1) the contractual characteristic of cash flows and (2) the management of financial assets. The terms "available-for-sale" and "held-to-maturity" no longer appear in IFRS 9.

Another key change in IFRS 9, compared with the old standard IAS 39, relates to the approach to provisioning models for financial assets, financial guarantees, loan commitments, and lease receivables. That is, IFRS 9 uses an expected credit loss model and evaluates not only historical and current information about loan performance, but also forward-looking information.

The criteria for using amortized cost are similar between the two standards. In order to be measured at amortized cost, financial assets must meet:

- A business model test: The financial assets are being held to collect contractual cash flows.
- A cash flow characteristic test: The contractual cash flows are solely payments of principal and interest on principal.

Classification and Measurement

IFRS 9 classifies all financial assets as reported at amortized cost or fair value. All financial assets are measured at fair value when initially acquired. Subsequently, those assets are measured at either fair value or amortized cost.

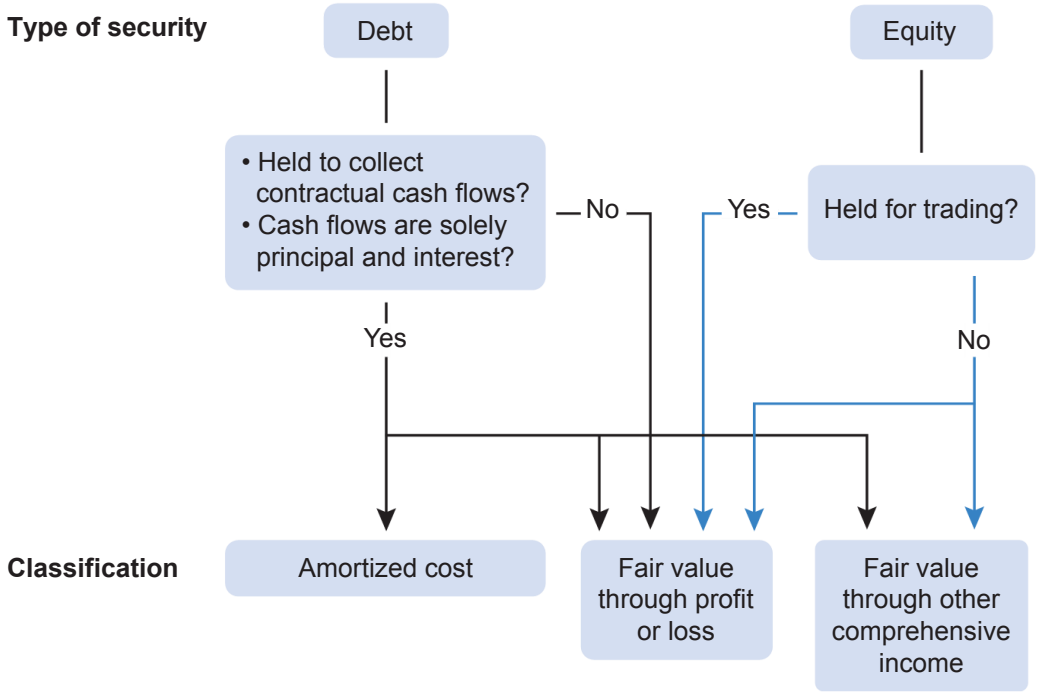
- Financial assets that meet the business model and cash flow characteristic tests are generally measured at amortized cost.
- If a financial asset meets the two tests but may be sold (ie, a "hold to collect and sell" business model), it may be measured at fair value through other comprehensive income (FVOCI).
- However, management may choose the fair value through profit or loss (FVPL) option to avoid an accounting mismatch. An accounting mismatch refers to an inconsistency resulting from different measurement bases for assets and liabilities.

Debt instruments are measured at amortized cost, FVOCI, or fair value through profit or loss (FVPL), depending upon the business model.

Equity investments can be measured at either FVPL or FVOCI, but the choice is irreversible. If the entity uses the FVOCI option, only the dividend income is recognized in profit or loss. Further, the requirements for reclassifying gains or losses recognized in other comprehensive income are different for debt and equity instruments.

Financial assets that are **derivatives** are measured at fair value through profit or loss (except for hedging instruments). Embedded derivatives are not separated from the hybrid contract if the asset falls within the scope of this standard and the asset as a whole is measured at FVPL.

Exhibit 2 Financial valuation and reporting approaches for investments in financial assets



Reclassification of Investments

Under the new standards:

- Reclassification is not permitted for equity instruments (ie, the initial classification of FVPL or FVOCI is irrevocable).
- Debt instruments may be reclassified from FVPL to amortized cost (or vice versa) only if the objective for holding the assets (ie, business model) has changed in a way that significantly affects operations. When debt instrument reclassification is appropriate, there is no restatement of prior periods at the reclassification date. If the financial asset is reclassified from:
  - amortized cost to FVPL, the asset is measured at fair value with gain or loss recognized in profit or loss.
  - FVPL to amortized cost, the fair value at the reclassification date becomes the carrying amount.

Convergence between IFRS and US GAAP standards for the classification, measurement, and reporting of investments in financial assets has made it easier for analysts to make comparisons across companies.

Analysts typically assess the performance of a company's operating and investing activities separately. Analysis of operating performance should exclude items related to investing activities (eg, interest income, dividends, realized and unrealized gains/losses). Nonoperating assets should be excluded from the calculation of return on operating assets. The use of financial assets' market values is encouraged when assessing performance ratios. Both IFRS and US GAAP require disclosure of the fair value of all classes of financial assets.

Investments in Associates and Joint Ventures

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LOS: Compare and contrast IFRS and US GAAP in their classification, measurement, and disclosure of investments in financial assets, investment in associates, joint ventures, business combinations, and special purpose and variable interest entities.

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An investor is assumed to exercise significant influence, but not control, if that investor has an ownership stake between 20% and 50% in an associate. Other indicators of significant influence include:

- Representation on the board of directors
- Participation in the policy-making process
- Material transactions between the investor and the investee
- Interchange of managerial personnel
- Technological dependency

If any of these indicators are present, the investor may exert significant influence over the associate, even if the investor's ownership stake is less than 20%.

Equity Method of Accounting: Basic Principles

Under both IFRS and US GAAP, investments in associates are accounted for using the equity method. The investment is initially recognized on the investor's balance sheet at cost (within a single line item) as a noncurrent asset. The proportionate share of investee earnings increases the carrying amount of the investment, while the proportionate share of losses and dividends decreases that value. The proportionate share of investee earnings is reported within a single line item on the income statement. In contrast, dividend payments have no impact on the amount reported on the income statement.

If the value of the investment falls to zero (eg, due to losses), use of the equity method to account for the investment is discontinued. Use of the equity method may be resumed only if the investee subsequently reports profits and the investor's share of profits exceeds losses not reported by the investor since abandoning the equity method.

Example 1 Equity method

Alpha purchased a 20% interest in Beta for $500,000 on Jan 1 20X6. The following table lists income reported and dividends paid by Beta for 20X6 and 20X7. Alpha uses the equity method to account for its investment in Beta.

	Income ($)	Dividends ($)
20X6	350,000	100,000
20X7	500,000	150,000
Total	**850,000**	**250,000**

Determine the amount that appears on Alpha's balance sheet for 20X7, related to its investment in Beta.

Determine the amount of investment income from Beta recognized on Alpha's income statements for 20X6 and 20X7.

Solutions

1. The value of the investment in Beta that appears on Alpha's 20X7 balance sheet is calculated as the initial cost, plus Alpha's proportionate share in Beta's net income (for 20X6 and 20X7), minus its proportionate share in dividends declared by Beta (for 20X6 and 20X7).

Initial cost	**$500,000**
Add: Share of Beta's 20X6 income (20% of 350,000)	70,000
Less: Share of dividends declared by Beta (20% of 100,000)	(20,000)
Value of investment in Beta (end of 20X6)	**550,000**
Add: Share of Beta's 20X7 income (20% of 500,000)	100,000
Less: Share of dividends declared by Beta (20% of 150,000)	(30,000)
Value of investment in Beta (end of 20X7)	**$620,000**

   This value can be calculated as initial cost plus Alpha's proportionate share of Beta's cumulative undistributed earnings since the date of the investment.

   Value of investment in Beta (end of 20X7) = 500,000 + [20% × (850,000 − 250,00)] = **$620,000**

2. The amount recognized as investment income from Beta on Alpha's income statement simply equals Alpha's proportionate share in Beta's earnings.

   Equity income for 20X6: 20% of 350,000 = **$70,000**

   Equity income for 20X7: 20% of 500,000 = **$100,000**

Amortization of Excess Purchase Price, Fair Value Option, and Impairment

LOS: Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

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Amortization of Excess Purchase Price

If the amount paid by an investor to purchase shares in the investee is greater than the book value of those shares (ie, the value of the investor's proportionate share in the investee's net identifiable tangible and intangible assets):

- The investor first allocates the excess amount to its proportionate share in specific assets whose fair value exceeds book value.
  - Amounts allocated to inventory are expensed.
  - Amounts allocated to depreciable or amortizable assets are capitalized and subsequently expensed (depreciated or amortized) over an appropriate period of time.
  - Amounts allocated to land and other assets or liabilities that are not amortized continue to be reported at fair value as of the date of investment.
- The investor then allocates remaining excess value to goodwill, which is not amortized but reviewed periodically for impairment. The investor continues to recognize goodwill as part of the carrying amount of the investment.

The excess of fair value over book value is not reflected in the investee's balance sheet, nor are the necessary periodic charges made on the investee's income statement. The impact of these charges on the carrying amount of the investment is recorded directly on the investor's balance sheet and in the share of investee profits recognized on the investor's income statement. See Example 2.

Example 2 Equity method investments with goodwill

On Jan 1 20X7, Prime Manufacturers acquired a 25% equity interest in Alton Corp. for $700,000. Information regarding Alton's assets and liabilities on the date of acquisition is:

	Book value ($)	Fair value ($)
Current assets	220,000	220,000
PPE	1,300,000	1,500,000
Land	900,000	1,050,000
Total assets	2,420,000	2,770,000
Liabilities	750,000	750,000
Net assets	**1,670,000**	**2,020,000**

Items of PPE are depreciated on a straight-line basis to zero over a term of 10 years.

Prime uses the equity method to account for its investment in Alton. Alton reports net income of $250,000 for 20X7 and pays dividends of $100,000. Calculate the following:

1. Goodwill included in the purchase price
2. The amount of equity income to be reported on Prime's income statement for 20X7
3. The value of the investment in Alton recognized by Prime on its balance sheet for 20X7

Solution

1.	Purchase price	$700,000
	Proportionate share in book value of Alton's net assets (= 25% × 1,670,000)	(417,500)
	Excess purchase price	282,500
	Less: Portion attributable to plant and equipment [= 25% × (1,500,000 − 1,300,000)]	(50,000)
	Less: Portion attributable to land [= 25% × (1,050,000 − 900,000)]	(37,500)
	Goodwill (residual)	**$195,000**
2.	Proportionate share in Alton's 20X7 earnings (= 25% × $250,000)	$62,500
	Less: Amortization of excess purchase price attributable to plant and equipment (= 50,000/10)	5,000
	Equity income	**$57,500**
3.	Purchase price	$700,000
	Add: Proportionate share in net income (= 25% × 250,000)	62,500
	Less: Dividends received (= 25% × 100,000)	(25,000)
	Less: Amortization of excess purchase price attributable to plant and equipment (= 50,000/10)	(5,000)
	Investment balance at Dec 31 20X7	**$732,500**

Land is not a depreciable asset, so it will continue to be reported based on its fair value as of the date of investment. Further, goodwill is included in the carrying amount of the investment, not recognized separately. The investment balance/carrying amount ($732,500) incorporates the purchase price ($700,000), which includes goodwill of $195,000.

Fair Value Option

Both US GAAP and IFRS (with certain restrictions) now offer investors the option to account for their equity method investments using fair values. Under both standards, the decision to apply the fair value method must be made at the time of initial recognition and is irrevocable. When the fair value method is applied:

- Unrealized gains/losses arising from changes in fair value as well as interest and dividends received are included in the investor's income.
- The investment account on the investor's balance sheet does not reflect the investor's proportionate share in the investee's earnings, dividends, or other distributions.

- The excess of cost over the fair value of the investee's identifiable net assets is not amortized.
- Goodwill is not created.

Impairment

Under both IFRS and US GAAP, equity method investments should be reviewed periodically for impairment. Since goodwill is included in the carrying amount of the investment (ie, not separately recognized) under the equity method, it is not tested for impairment separately.

Under IFRS, an impairment loss is recognized if there is objective evidence of a loss event and the recoverable amount of the investment is less than the carrying amount. An investment's recoverable amount is the higher of its value in use (ie, PV of expected cash flows) and net selling price.

Under US GAAP, an impairment loss is recognized if the fair value of the investment is less than the carrying amount and the decline is deemed to be permanent. Impairment results in a decrease in net income and reduces the investment's carrying amount on the balance sheet. Reversal of an impairment loss is not allowed under IFRS (except for non-goodwill impairment losses) or US GAAP.

Note: When investments are accounted for using the equity method, there is a test for the **total** fair value of impairment. For business combinations, there is a test for **disaggregated** goodwill impairment; this will be discussed later.

Transactions with Associates and Disclosure

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Profits from transactions between the investor and investee must be deferred until they are confirmed through use or sale to a third party. This is due to the significant influence the investing company has over the terms of transactions with associates.

Sales from investee to investor are upstream sales. The profits on such sales are recognized on the investee's income statement, so a proportionate share of these profits is also included in the investor's income statement. Sales from investor to investee are known as downstream sales, with associated profits recognized on the investor's income statement.

The investor's **proportionate share** of unconfirmed profits from the sales, whether upstream or downstream, must be eliminated from the investor's equity income. The investor may recognize these profits once they are confirmed.

Example 3 Equity method for transactions with associates

Referring to Example 2, equity income on Prime's (the investor's) income statement for 20X7 is $57,500, and the value of the investment in Alton on Prime's balance sheet for 20X7 is $732,500. Suppose that the following transactions also took place:

1. $12,000 of profit from an upstream sale from Alton to Prime during 20X7 was still in Prime's inventory at the end of 20X7 as the goods had not yet been sold to an outside investor.
2. During 20X9, Prime made downstream sales of $100,000 worth of goods to Alton for $160,000, and Alton sold goods worth $140,000 to outside parties, while the remaining $20,000 worth of goods was sold in 20X8.

Calculate the amount of equity income reported on Prime's income statement for 20X7 and the value of the investment in Alton on Prime's 20X7 balance sheet after incorporating the effects of the above transactions.

Solution

1. **Upstream sale**

   Unrealized profit = $12,000

   Prime's **proportionate share** of the unrealized profit = 25% × 12,000 = $3,000

2. **Downstream sale**

   Prime's profit on sale to Alton = 160,000 − 100,000 = $60,000

   Alton sells 87.5% (= 140,000 / 160,000 × 100) of goods purchased from Prime during 20X9, while 12.5% remains unsold.

   Therefore, total unrealized profit = 12.5% × 60,000 = $7,500

   Prime's **proportionate share** of unrealized profit = 25% × 7,500 = $1,875. Therefore:

Revised equity income for 20X9 = 57,500 − 3,000 − 1,875 = $52,625

Revised carrying value of investment for 20X9 = 732,500 − 3,000 − 1,875 = $727,625

In 20X8, when unconfirmed sales for 20X7 (worth $20,000) are confirmed, related profits that were not realized during 20X7 (worth $1,875) are realized. These profits contribute to equity income for 20X8.

Disclosure

In practice, associates' results may be included in the investor's reporting with a time lag. Since associate-issued dividends are already reported as earnings, they are not reported on the investor's income statement, which would double-count them. On the consolidated balance sheet, the book value of the investor's holdings is increased by its proportionate share of associate income and decreased by its proportionate share of associate dividends.

Issues for Analysts

Analysts should evaluate the appropriateness of the use of the equity method for accounting for investment in an associate. For example, in a situation where an investing company owns a 30% equity interest in an associate but does not exert significant influence over the investee, the investor may prefer using the equity method so that it can report associated income on its financial statements.

On the other hand, if an investing company owns a 19% equity interest in an associate but exerts significant influence over the investee, the investor may prefer not to use the equity method in order to avoid recognition of its proportionate share of investee losses on its financial statements.

The investment is presented on the investor's balance sheet as a single line item. This affects the leverage ratios reported by the investor as the investor's proportionate share of the investee's assets and liabilities is not reported separately on its financial statements.

Since the investor's proportionate share in associate earnings is reported on its income statement, but its proportionate share in associate revenues is not, the net profit margin may be overstated.

The equity method assumes that the investor's proportionate share of each dollar earned by the associate is available to the investor, even if earnings are not distributed as dividends. Analysts should therefore consider any restrictions on dividend payments.

Acquisition Method

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A business combination refers to the combination of two or more entities into a larger economic entity. IFRS do not differentiate between business combinations based on the structure of the surviving entity, but US GAAP do, categorizing business combinations as shown in Exhibit 3.

Exhibit 3 Classification of business combinations: US GAAP

Acquisition
• Parent and subsidiary continue to operate as separate entities • Parent can acquire < 100% • Parent can own < 50% and still have control • A = B = (A + B)
Consolidation
• Parent must acquire 100% of subsidiary • Neither parent nor subsidiary exist as entities after transaction • A + B = C

Merger
• Parent must acquire 100% of subsidiary • Only parent exists after transaction • A + B = A

In the past, business combinations could be accounted for using either the purchase method or the uniting-of-interests (or pooling-of-interests) method. Those methods have been replaced, however, by the development of the acquisition method, which minimizes differences between IFRS and US GAAP in accounting for such combinations.

Acquisition Method

Under the acquisition method, all assets, liabilities, revenues, and expenses of the acquiree are combined with those of the parent. The acquired entity's identifiable tangible and intangible assets and liabilities are all measured at fair value.

Recognition and Measurement of Identifiable Assets and Liabilities

The acquirer must recognize any identifiable tangible or intangible assets and liabilities, even if the acquiree had not recognized them on its financial statements. For example, identifiable intangible assets such as brand names and patents that the acquiree had developed internally would be recognized by the acquirer.

Recognition and Measurement of Contingent Liabilities

The acquirer must recognize any contingent liability assumed in the acquisition if (1) it is a present obligation that arises from past events, and (2) it can be measured reliably. However, costs that the acquirer expects but is not obliged to incur are not recognized as liabilities. Instead, they are expensed in future periods as they are incurred.

Recognition and Measurement of Indemnification Assets

The acquirer must recognize an indemnification asset if the acquiree contractually indemnifies the acquirer for the outcome of a contingency, an uncertainty related to a specific asset or liability of the acquiree, or against losses above a specified amount on a liability arising from a particular contingency.

Recognition and Measurement of Financial Assets and Liabilities

Upon acquisition, assets and liabilities are reclassified based on contractual terms, economic conditions, and the acquirer's accounting policies.

Recognition and Measurement of Goodwill

IFRS allow for the recognition of partial or full goodwill, whereas US GAAP allow only full goodwill. Both are intangible assets that represent the difference between the acquisition price and the value of net assets. Partial goodwill considers only the acquirer's proportional share of the fair value of net assets; full goodwill accounts for the fair value of all net assets. Goodwill is not amortized, but it is tested annually for impairment.

Recognition and Measurement When Acquisition Price Is Less Than Fair Value

If the purchase price is less than the fair value of the subsidiary's (ie, acquiree's) net assets, it is referred to as a bargain acquisition. Both IFRS and US GAAP require the difference between the fair value of the acquired net assets and the purchase price to be recognized immediately as a gain in profit or loss.

Example 4 Acquisition method

Pyramid Inc. acquired a 100% equity interest in Sam Corp. by issuing 1 million shares of common stock. The par value of each share was $1, while the market price of each share at the time of the transaction was $10. The following information (in $ thousands) relates to the two companies just before the transaction.

	Pyramid Inc.	Sam Corp.	
	Book value	**Book value**	**Fair value**
Cash and receivables	12,500	450	450
Inventory	11,000	1,500	3,500
Net PPE	25,500	2,800	4,000
Total assets	**49,000**	**4,750**	**7,950**
Current payables	7,500	800	800
Long-term (LT) debt	15,000	2,500	2,000
Total liabilities	**22,500**	**3,300**	**2,800**
Net assets	**26,500**	**1,450**	**5,150**
Capital stock ($1 par)	5,500	300	
Additional paid-in capital	7,000	400	
Retained earnings	14,000	750	
Total shareholders' equity	**26,500**	**1,450**	

Based on the acquisition method, calculate the amounts presented on the post-combination balance sheet. Assume that Sam has no identifiable intangible assets.

Solution

Under both IFRS and US GAAP, the purchase price equals the fair value (FV) of shares issued by Pyramid to finance the acquisition. Since the purchase price ($10 million) exceeds the book value (BV) of Sam's net assets ($1.45 million), the excess is allocated to identifiable assets and liabilities to reflect their fair values, and the remainder is recognized as goodwill.

$$\text{Excess purchase price} = \text{Cost of acquisition} - \text{BV of net assets acquired}$$

$$(\$10 \times 1{,}000{,}000) - \$1{,}450{,}000 = \mathbf{\$\ 8{,}550{,}000}$$

Excess purchase price	**$8,550,000**
Allocated to identifiable net assets:	
Inventory (difference between BV and FV of Sam's inventory)	2,000,000
PPE (difference between BV and FV of Sam's net PPE)	1,200,000
Long-term debt (difference between BV and FV of LT debt)	500,000
Allocated to goodwill (remaining amount of excess purchase price)	4,850,000
Total	**8,550,000**

For the consolidated balance sheet, assets and liabilities are combined using the book values of Pyramid's assets and liabilities and the fair value of Sam's assets and liabilities. Further, only Pyramid's retained earnings are carried to the combined equity.

Consolidated Balance Sheet ($ thousands)

Cash and receivables (= 12,500 + 450)	12,950
Inventory (= 11,000 + 3,500)	14,500
PPE (= 25,500 + 4,000)	29,500
Goodwill	4,850
Total assets	**61,800**
Current payables (= 7,500 + 800)	8,300
Long-term debt (= 15,000 + 2,000)	17,000
Total liabilities	**25,300**
Capital stock ($1 par) (= 5,500 + 1,000)	6,500
Additional paid-in capital (= 7,000 + 9,000)	16,000
Retained earnings	14,000
Total equity	**36,500**
Total liabilities and shareholders' equity	**61,800**

Calculations

Capital stock = Parent's capital stock + Par value of shares issued

$$= \$5{,}500{,}000 + \$1{,}000{,}000 = \$6{,}500{,}000$$

Additional paid-in capital = Parent's additional paid-in capital + (Market value of shares issued − Par value of shares issued)

$$= \$7{,}000{,}000 + [(1{,}000{,}000 \times 10) - (1{,}000{,}000 \times 1)] = \$16{,}000{,}000$$

Also, note that in post-acquisition periods, amortization and depreciation will be based on the historical cost of Pyramid's assets and the fair value (as of the acquisition date) of Sam's assets. So, under the acquisition method, as Sam's inventory is sold, COGS would be $2,000,000 higher, and depreciation on PPE would be $1,200,000 higher over the life of assets. This is in contrast to the pooling-of-interests method, in which the companies' book values are combined.

Important: At the date of acquisition, only the acquirer's retained earnings are carried over to the combined entity. The acquiree's earnings and retained earnings are included on the consolidated income statement only in post-acquisition periods.

The Consolidation Process

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Consolidated financial statements report the combined financial results of a parent and its subsidiaries, although they may be separate legal entities. All assets, liabilities, revenues, and expenses of both the parent and its subsidiaries are reported; transactions between the parent and subsidiaries are excluded to avoid double-counting them.

Business Combinations with Less Than 100% Acquisition

In an acquisition, the acquirer may not purchase 100% of the target's equity to gain control. In that case, the acquirer and the target remain separate legal entities, known as the parent and the subsidiary. The parent and the subsidiary prepare their own financial statements, but the parent also prepares **consolidated** financial statements for each reporting period.

Noncontrolling (Minority) Interests: Balance Sheet

If a parent controls a subsidiary but owns less than a 100% equity interest in the company, it must also create a noncontrolling interest account on the consolidated balance sheet and income statement in order to reflect the proportionate share in the subsidiary's net assets and net income held by minority shareholders (ie, shareholders other than the parent). Their share in the net assets of the subsidiary is included in the noncontrolling interests account on the consolidated balance sheet (presented in the equity section).

IFRS and US GAAP differ regarding the balance sheet measurement of noncontrolling interests. US GAAP requires the parent to measure noncontrolling interest at fair value (ie, full goodwill method). IFRS permits the parent to report the noncontrolling interest either at fair value or as the proportionate share of the fair value of the subsidiary's identifiable net assets (ie, partial goodwill method).

Noncontrolling (Minority) Interests: Income Statement

The noncontrolling interests account income statement (deducted from consolidated net income) reflects minority shareholders' proportionate share in the net income of the subsidiary.

Example 5 Goodwill and noncontrolling interests

On Jan 1 20X0, Pluto Inc. acquired a 90% equity interest in Jupiter Inc. in exchange for €450,000 worth of Pluto stock. The fair market value of Jupiter on the date of acquisition was €500,000. The following information is available about the two companies immediately prior to the transaction.

	Pluto	Jupiter	
	Book value (€)	**Book value (€)**	**Fair value (€)**
Cash and receivables	50,000	20,000	20,000
Inventory	130,000	95,000	95,000
Net PPE	250,000	110,000	160,000
Total assets	**430,000**	**225,000**	**275,000**
Payables	60,000	25,000	25,000
Long-term debt	100,000	60,000	60,000
Total liabilities	**160,000**	**85,000**	**85,000**
Net assets	**270,000**	**140,000**	**190,000**
Capital stock	90,000	50,000	
Retained earnings	180,000	90,000	
Total shareholders' equity	**270,000**	**140,000**	

- Calculate the value of goodwill and noncontrolling interest at the acquisition date under the full goodwill method.
- Calculate the value of goodwill and noncontrolling interest at the acquisition date under the partial goodwill method.
- Compare the post-combination balance sheets under the full goodwill and partial goodwill methods.

Solutions

Full Goodwill Method

Goodwill equals the excess of the total fair value of the subsidiary over the fair value of its identifiable net assets.

- Subsidiary's fair value = €500,000
- Fair value of subsidiary's identifiable net assets = €190,000
- Goodwill = $500,000 − €190,000 = €310,000

The noncontrolling interest is measured based on its proportionate share of the subsidiary's fair value.

Noncontrolling interest (NCI) = Percentage of NCI × Subsidiary's fair value = 10% × 500,000 = €50,000

Partial Goodwill Method

Goodwill equals the excess of the purchase price over the fair value of the parent's proportionate share in the subsidiary's identifiable net assets.

- Acquisition price = €450,000
- Fair value of proportionate share of acquired net assets = 90% × €190,000 = €171,000
- Goodwill = 450,000 − €171,000 = €279,000

The noncontrolling interest is measured based on its proportionate share of the fair value of the subsidiary's identifiable net assets.

NCI = Percentage of NCI × Fair value of subsidiary's identifiable net assets = 10% × €190,000 = €19,000

Post-combination balance sheets

Consolidated Balance Sheet

	Full goodwill (€)	**Partial goodwill (€)**
Cash and receivables	70,000	70,000
Inventory	225,000	225,000
PPE	410,000	410,000
Goodwill	310,000	279,000
Total assets	**1,015,000**	**984,000**
Payables	85,000	85,000
Long-term debt	160,000	160,000
Total liabilities	**245,000**	**245,000**
Noncontrolling interests	50,000	19,000
Capital stock (= 90,000 + 450,000)	540,000	540,000
Retained earnings	180,000	180,000
Total equity	**770,000**	**739,000**
Total liabilities and shareholders' equity	**1,015,000**	**984,000**

The full goodwill method results in *higher* total assets and equity compared with the partial goodwill method.

As demonstrated in Example 5, net income to the parent's shareholders will be the same regardless of whether the full goodwill or partial goodwill method is used to value goodwill and noncontrolling interests on the balance sheet. On the income statement, the noncontrolling interests will share the burden of additional depreciation that arises from the €50,000 increase in PPE. Since depreciation expense is the same under both methods, net income and retained earnings (€180,000) on the consolidated balance sheet are also the same under both methods.

Although net income is the same, return on assets and return on equity will be *less* if the full goodwill method is used since it results in more assets and more equity than the partial goodwill method. In addition, over time, the value of the subsidiary will change due to changes in equity or net income. Therefore, the value of noncontrolling interest on the consolidated balance sheet will also change.

Goodwill Impairment

Since goodwill is an intangible asset with an indefinite life, it is not amortized. However, goodwill must be tested for impairment at least annually—or more often, if events and circumstances indicate that it may be impaired. Once an impairment charge has been made against goodwill, it cannot be reversed.

Exhibit 4 shows the differences between IFRS and US GAAP in accounting for goodwill impairment. Note the following definitions:

- Cash-generating unit: The smallest group of assets that can operate independently and generate cash
- Reporting unit: Smaller unit within an operating segment
- Recoverable amount: The greater of the net selling price and value in use (ie, PV of expected cash flows)
- Implied fair value: Fair value of reporting unit − Fair value of reporting unit's assets and liabilities

Exhibit 4 Goodwill impairment under IFRS and US GAAP

	IFRS	US GAAP
At acquisition, goodwill allocated to:	Cash-generating units	Reporting units
Impairment test	Recoverable amount < Carrying amount	Fair value < Carrying value
Impairment loss	Carrying value − Recoverable amount	Carrying value − Implied fair value
Impairment loss applied first to:	Cash-generating unit's goodwill	Reporting unit's goodwill
After reporting unit's goodwill has been reduced to zero:	Remaining amount of loss is allocated to all other assets in the unit on a *pro rata* basis.	No adjustments are made to the carrying amounts of unit's other assets or liabilities

Under both IFRS and US GAAP, the impairment loss is recognized as a separate line item on the consolidated income statement.

Example 6 Impairment of goodwill under IFRS

An analyst obtains the following information regarding a cash-generating unit of Mercury Inc.:

- Carrying value of unit (including recognized goodwill of $600,000) = $2,600,000
- Recoverable amount of unit = $2,200,000
- Fair value of unit's identifiable net assets = $1,900,000

Calculate the impairment loss recognized under IFRS.

Solution

Impairment loss = Carrying value of unit − Recoverable amount of unit

Impairment loss = $2,600,000 − $2,200,000 = $400,000

Note: If the recoverable amount of the cash-generating unit had been $1,900,000 instead of $2,200,000, the impairment loss would have been $700,000. This would be absorbed first by goodwill allocated to the unit ($600,000); the remaining amount of the impairment ($700,000 − $600,000 = $100,000) would then be allocated on a pro rata basis to other assets within the unit.

Example 7 Impairment of goodwill under US GAAP

An analyst obtains the following information regarding a reporting unit of Mercury Inc.:

- Carrying value of unit (including recognized goodwill of $600,000) = $2,500,000
- Fair value of unit = $2,100,000
- Fair value of unit's identifiable net assets = $1,900,000

Calculate the impairment loss recognized under US GAAP.

Solution

Step 1: Determine whether goodwill is impaired.

Since the carrying value ($2.5 million) of the reporting unit exceeds its fair value ($ 2.1 million), impairment exists.

Step 2: Measure the impairment loss.

Implied goodwill = Fair value of unit − Fair value of identifiable net assets of the unit

Implied goodwill = $2,100,000 − 1,900,000 = $200,000

Impairment loss = Recognized goodwill − Implied goodwill

Impairment loss = $600,000 − 200,000 = $400,000

If the fair value of the unit had been $1,200,000 instead of $2,100,000, the implied goodwill would equal −$700,000. In that case, the maximum impairment loss recognized would be capped at the carrying value of goodwill ($600,000).

Special Purpose and Variable Interest Entities

LOS: Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

LOS: Compare and contrast IFRS and US GAAP in their classification, measurement, and disclosure of investments in financial assets, investment in associates, joint ventures, business combinations, and special purpose and variable interest entities.

Special purpose entities (SPEs) are established to meet specific objectives of the sponsoring company. They are structured in a manner that allows the sponsoring company to retain financial control over the SPE's assets and/or operating activities, while third parties hold the majority of the voting interest in the SPE. Typically, third parties fund their investments in SPEs with debt that is directly or indirectly guaranteed by the sponsoring company.

In the past, such arrangements enabled sponsoring companies to avoid consolidation of SPEs on their financial statements due to a lack of "control" (ie, ownership of a majority voting interest) of the SPE. As a result, sponsoring companies were able to:

- avoid disclosures of guarantees they had made regarding the SPE's debt.
- transfer assets and liabilities from their own balance sheets to the SPE and record revenues and gains related to these transactions.
- avoid recognition of the SPE's assets and liabilities on their financial statements.

Consequently, a sponsoring company's reported financial performance—as presented in unconsolidated financial statements—would be economically misleading since it indicated improved asset turnover, higher profitability, and lower levels of operating and financial leverage. (Enron is an excellent example of a company that used off-balance-sheet financing to improve its reported financial performance. The company's subsequent collapse was, in part, related to the guarantees it provided on the debt of SPEs it had created.)

IFRS and US GAAP now require sponsoring companies to prepare consolidated financial statements that account for arrangements in which parties other than the holders of majority voting rights exercise financial control over the sponsored entity. Further, standards relating to the measurement, reporting, and disclosure of guarantees have been revised.

For example, under US GAAP, a variable interest entity (VIE) must be consolidated as the subsidiary of its primary beneficiary, regardless of how much equity investment that beneficiary has in the VIE. VIEs are defined by US GAAP as any entity controlled by a party that does not hold a majority voting interest. In a VIE:

- The primary beneficiary (often the sponsor) is defined as the entity that is expected to absorb the majority of the VIE's expected losses, receive the majority of the VIE's residual returns, or both.
- If one entity is expected to absorb a majority of the VIE's losses while another entity would receive a majority of its expected profits, the entity absorbing a majority of the losses must consolidate the VIE.
- If there are noncontrolling interests in the VIE, these would also be shown in the consolidated balance sheet and consolidated income statement of the primary beneficiary.

Securitization of Assets

SPEs are often set up to securitize receivables held by the sponsor. The SPE issues debt to finance the purchase of the receivables from the sponsor, and interest and principal payments to debt holders are made from the cash flow generated from the pool of receivables.

The sponsor's motivation for selling its accounts receivable to the SPE is to accelerate cash inflows. However, an important aspect of the arrangement is that the SPE's debt holders need to have recourse against the sponsor if sufficient cash is not generated from the pool of receivables. Therefore, the transaction is basically treated like a loan taken out by the sponsor and collateralized with the receivables. If the receivables are not entirely realized, the loss is borne by the sponsor.

When the receivables are first sold by the sponsor, accounts receivable decrease, and the cash received contributes to CFO. However, if the risk of nonrealization is still borne by the sponsor (eg, through a debt guarantee), an analyst must adjust accounts receivable and current liabilities upward. Further, the cash inflow previously classified as CFO must be reclassified as cash flow from financing activities (CFF) to reflect the fact that the transaction is, in effect, merely a collateralized borrowing. See Example 8.

Exhibit 5 Adjusted values when reclassifying sale of receivables

CFO	Lower
CFF	Higher
Total cash flow	Same
Current assets	Higher
Current liabilities	Higher
Current ratio (assuming it was greater than 1)	Lower

Example 8 Securitization of receivables

Violet Inc. wants to raise $75 million in capital by borrowing against its financial receivables. The company's finance director presents the following two options to senior management:

Option 1: Borrow directly against accounts receivable.

Option 2: Create a SPE with an initial investment of $10 million, have the SPE borrow $75 million, and then use those funds to purchase $85 million of Violet's receivables.

The following balance sheet information is available:

Cash	40,000,000
Accounts receivable	85,000,000
Other assets	35,000,000
Total assets	**160,000,000**
Current liabilities	30,000,000
Noncurrent liabilities	35,000,000
Total liabilities	**65,000,000**
Shareholders' equity	95,000,000
Total liabilities and shareholders' equity	**160,000,000**

Selected financial ratios

Current ratio = 4.17

Long-term debt-to-equity ratio = 0.37

Equity to total assets = 0.59

Prepare Violet's balance sheet as it would appear after it raises the required amount under either alternative.

Solution

Option 1: Borrow directly against the receivables

Violet's cash and noncurrent liabilities will increase by $75 million.

Cash	115,000,000
Accounts receivable	85,000,000
Other assets	35,000,000
Total assets	**235,000,000**
Current liabilities	30,000,000
Noncurrent liabilities	110,000,000
Total liabilities	**140,000,000**
Shareholders' equity	95,000,000
Total liabilities and shareholders' equity	**235,000,000**

Selected financial ratios

Current ratio = 6.67

Long-term debt-to-equity ratio = 1.16

Equity-to-total assets ratio = 0.40

Relative to its original balance sheet, if Violet borrows directly against the receivables:

- It reports higher total assets and higher total liabilities. Therefore, the equity-to-total assets ratio is lower (worse).
- Profitability ratios (eg, return on assets, return on total capital) are lower (worse).
- The long-term debt-to-equity ratio is higher (worse).
- The current ratio is higher (better).

Option 2: Establish a SPE

Violet's accounts receivable will decrease by $85 million, and cash will increase by $75 million (calculated as proceeds from the sale of receivables, $85 million, minus the amount invested in the SPE, $10 million). The investment in the SPE is listed under assets on the balance sheet.

Cash	115,000,000
Accounts receivable	0
Investment in SPE	10,000,000
Other assets	35,000,000
Total assets	**160,000,000**
Current liabilities	30,000,000
Noncurrent liabilities	35,000,000
Total liabilities	**65,000,000**
Shareholders' equity	95,000,000
Total liabilities and shareholders' equity	**160,000,000**

Selected financial ratios

Current ratio = 3.83

Long-term debt-to-equity ratio = 0.37

Equity-to-total assets ratio = 0.59

Relative to its original balance sheet, if Violet establishes a SPE to raise funds **and does not consolidate the SPE's financial statements with its own**:

- Total assets and liabilities remain unchanged. Therefore, the company's long-term debt-to-equity ratio and its equity-to-total assets ratio are unaffected.
- The increase in cash ($75 million) is lower than the decrease in accounts receivable ($85 million), which reduces current assets. Therefore, the current ratio is lower (worse).

If Violet consolidates the financial statements of the SPE, its balance sheet will look like this:

Cash	115,000,000
Accounts receivable	85,000,000
Other assets	35,000,000
Total assets	**235,000,000**
Current liabilities	30,000,000
Noncurrent liabilities (= 35 million + 75 million)	110,000,000
Total liabilities	**140,000,000**
Shareholders' equity	95,000,000
Total liabilities and shareholders' equity	**235,000,000**

Selected financial ratios

Current ratio = 0.67

Long-term debt-to-equity ratio = 1.16

Equity-to-total assets ratio = 0.40

If Violet were required by accounting standards to consolidate the SPE's financial statements with its own, its financial ratios would be the same as those calculated under Option 1.

The table below summarizes financial statement ratios based on reported financials under the different options:

			With SPE	
Selected ratios	**Original**	**Direct borrowing**	**Unconsolidated**	**Consolidated**
Current ratio	4.17	6.67	3.83	6.67
Long-term debt to equity	0.37	1.16	0.37	1.16
Equity to total assets	0.59	0.40	0.59	0.40

Note: If Violet were able to raise funds by establishing a SPE without a requirement to present consolidated financial statements, it would report a lower (better) debt-to-equity ratio (0.37) and higher (better) equity-to-total assets ratio (0.59), compared with direct borrowing (1.16 and 0.40, respectively). However, if accounting standards were to require consolidation of SPEs, Violet's presented financial position would be the same regardless of whether it raised the funds through a SPE or by borrowing directly (D/E = 1.16; E/A = 0.40)

Additional Issues in Business Combinations That Impair Comparability

LOS: Describe the classification, measurement, and disclosure under International Financial Reporting Standards (IFRS) for 1) investments in financial assets, 2) investments in associates, 3) joint ventures, 4) business combinations, and 5) special purpose and variable interest entities.

LOS: Compare and contrast IFRS and US GAAP in their classification, measurement, and disclosure of investments in financial assets, investment in associates, joint ventures, business combinations, and special purpose and variable interest entities.

Contingent Assets and Liabilities

IFRS and US GAAP differ regarding the treatment of contingent assets and liabilities.

Under **IFRS**, contingent assets are not recognized. Contingent liabilities are recognized separately during the cost allocation process, given that their fair values can be reliably measured.

Under **US GAAP**, contractual contingent assets and liabilities are recognized at their fair values at the time of acquisition. Noncontractual contingent assets and liabilities may also be recognized if it is probable (ie, more likely than not) that they meet the definition of an asset or liability at the acquisition date.

Contingent Consideration

Contingent consideration is created when a parent agrees to pay additional amounts to the subsidiary's shareholders if the combined entity achieves certain performance targets. Under both IFRS and US GAAP, contingent consideration should be measured initially at fair value and classified as a financial liability or equity. Subsequent changes in the fair value of such liabilities (and assets, in the case of US GAAP) are recognized in the consolidated income statement. Contingent consideration classified as equity is not remeasured under IFRS or US GAAP. Any settlements are accounted for within equity.

In-process R&D

Under both IFRS and US GAAP, in-process research and development (R&D) acquired in a business combination is recognized as a separate intangible asset at fair value. In subsequent periods, in-process R&D is amortized.

Restructuring Costs

Under both IFRS and US GAAP, restructuring costs associated with a business combination are expensed in the period in which they are incurred. These costs are not included in the acquisition price.

Learning Module 2
Employee Compensation: Post-Employment and Share-Based

LOS: Contrast types of employee compensation.

LOS: Explain how share-based compensation affects the financial statements.

LOS: Explain how to forecast share-based compensation expense and shares outstanding in a financial statement model and their use in valuation.

LOS: Explain how post-employment benefits affect the financial statements.

LOS: Explain financial modeling and valuation considerations for post-employment benefits.

Types of Employee Compensation

LOS: Contrast types of employee compensation.

Companies can offer several types of benefits to their employees (eg, pension plans, health care plans, medical insurance). The main differences between forms of compensation relate to when the benefits are paid and how they are paid. Exhibit 1 provides examples of compensation types:

Exhibit 1 Forms of compensation

Type of compensation	Examples
Short-term	Salaries, bonuses, retirement contributions, health insurance
Long-term	Long-term paid leave, long-term disability
Termination	Severance pay, career counseling
Share-based	Restricted stock, stock options
Post-employment	Pensions, life & health insurance

If a company reports under IFRS, all the compensation forms listed in Exhibit 1 are expensed at fair value when the compensation vests in the employee. Vesting is defined as the employee's having an unconditional right to receive the compensation, even if actual receipt will not occur until some time in the future.

For cash (ie, short-term) compensation, the:

- income statement shows an expense for the amount of compensation.
- balance sheet shows a liability for deferred compensation (until cash payment).
- statement of cash flows shows an entry for cash from operations (CFO) for the period when the compensation is paid.

Share-Based Compensation

As indicated in Exhibit 1, employees may have a portion of their compensation paid in shares of the company's common stock. Such compensation is typically offered to align the employees' interests with those of highly compensated management and non-employee shareholders or to improve employee retention. It may prove ineffective or even backfire if the recipients have limited opportunities to affect share price or cannot do so without modifying their risks. However, an advantage of share-based compensation is that no immediate cash outlay is required; compensation is provided as shares of stock or options/ warrants on shares.

Exhibit 2 Advantages and disadvantages of share-based compensation

Advantages	Disadvantages
• Employee motivation with the possibility of higher earnings	• Limited influence over firm value or stock price may weaken motivation
• Incentive to align interests of shareholders and employees	• Stock ownership may increase risk aversion, leading to less profitable projects • Asymmetrical payout of options may increase risk appetite, leading to riskier projects
• Potentially no cash disbursements required	• Equity-settled compensation can cause dilution of shares

Financial Reporting for Share-Based Compensation

LOS: Explain how share-based compensation affects the financial statements.

Under IFRS, compensation paid in shares is provided over a timeline of events: shares are granted, followed by a period of vesting that ends on a settlement date. The fair value of the shares at the time of the grant is apportioned over the vesting period, impacting both the income statement and balance sheet each year of that period. This is the case even if the employee is not vested in any of the shares until the vesting period has been completed.