

Chapter 2

Introduction to Financial Statement Analysis :IFRS

Qinwen Zeng

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Chapter Outline

- 2.1 Firms' Disclosure of Financial Information
- 2.2 The Balance Sheet
- 2.3 The Income Statement
- 2.4 The Statement of Cash Flows
- 2.5 Financial Statement Analysis

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2.1 Firms' Disclosure of Financial Information

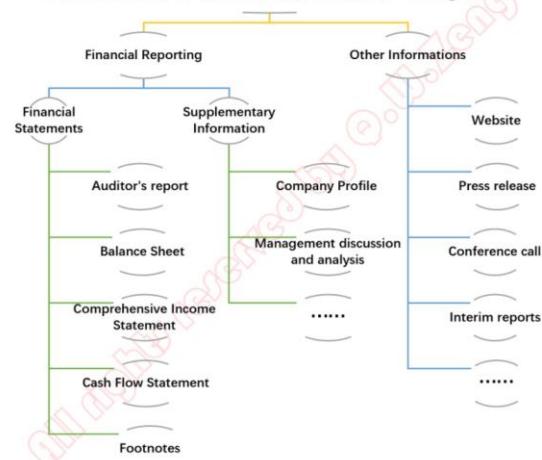
The role of financial statement analysis

- Use the **financial report**, along with **other information**, to evaluate a company's **financial performance** and **financial position** for the purpose of making economic decisions.

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Framework of financial statement analysis



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2.1 Firms' Disclosure of Financial Information (cont'd)

- **Footnotes:**

- Discuss the basis of presentation such as the fiscal period covered by the statements and the inclusion of consolidated entities.
- Provide information about **accounting assumptions, policy, methods, and estimates** used by management.
- Provide additional information on items such as business acquisitions or disposals, legal actions, employee benefit plans, contingencies and commitments, significant customers, sales to related parties, and segments of the firm.

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2.1 Firms' Disclosure of Financial Information (cont'd)

- **Preparation of Financial Statements**

- Generally Accepted Accounting Principles (**GAAP**) together with the International Financial Reporting Standards (**IFRS**, issued by the IASB) provide a common set of rules and a standard format for public companies to use when they prepare their reports.
- Auditor
 - Neutral third party that checks a firm's financial statements
 - Unqualified opinion, Qualified opinion, Adverse opinion, Disclaimer of opinion

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2.1 Firms' Disclosure of Financial Information (cont'd)

- **Preparation of Financial Statements**

- General requirements for financial statements under IFRS:
 - **Comparative information. (historical cost model to fair value model-retrospectively; change in residual value of a depreciation asset-prospectively)**
 - Accrual basis of accounting is used to prepare the financial statements other than the statement of cash flows.
 - Aggregation of similar items and separation of dissimilar items.
 - No offsetting of assets against liabilities or income against expenses unless a specific standard permits or requires it.

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2.1 Firms' Disclosure of Financial Information (cont'd)

- **Types of Financial Statements**

- Balance Sheet
- Income Statement
- Statement of Cash Flows
- Statement of Stockholders' Equity

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Table 2.1 Global Conglomerate Corporation Balance Sheet

Assets	GLOBAL CONGLOMERATE CORPORATION		Consolidated Balance Sheet	
	2015	2014	Year Ended December 31 (in \$ million)	2014
Current Assets			Current Liabilities	
Cash	21.2	19.5	Accounts payable	29.2 42.5
Accounts receivable	18.5	13.2	Notes payable/short-term debt	3.5 3.2
Inventories	15.3	14.3	Current maturities of long-term debt	13.3 12.3
Other current assets	2.0	1.0	Other current liabilities	2.0 4.0
Total current assets	57.0	48.0	Total current liabilities	48.0 44.0
Long-Term Assets			Long-Term Liabilities	
Land	22.2	20.7	Long-term debt	99.9 76.3
Buildings	36.5	30.5	Capital lease obligations	— —
Equipment	39.7	33.2	Total debt	99.9 76.3
Less accumulated depreciation	(18.7)	(17.5)	Deferred taxes	7.6 7.4
Net property, plant, and equipment	79.7	66.9	Other long-term liabilities	— —
Goodwill and intangible assets	20.0	20.0	Total long-term liabilities	107.5 83.7
Other long-term assets	21.0	14.0	Total Liabilities	155.5 127.7
Total long-term assets	120.7	100.9	Stockholders' Equity	22.2 21.2
Total Assets	177.7	148.9	Total Liabilities and Stockholders' Equity	177.7 148.9

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2.2 Balance Sheet

- The balance sheet reports the firm's financial position at a point in time.
- **The Balance Sheet Identity:**

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

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2.2 Balance Sheet (cont'd)

- **Assets**
 - Resources controlled as a result of past transactions that are expected to provide future economic benefits. What the company owns.
- **Liabilities**
 - Obligations as a result of past events that are expected to require an outflow of economic resources. What the company owes.
- **Stockholder's Equity**
 - The owners' residual interest in the assets after deducting the liabilities.

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2.2 Balance Sheet (cont'd)

- **Assets**

- Current Assets: Cash and other assets that will likely be converted into cash or used up within one year or one **operating cycle**, whichever is greater.

- **Cash and Cash Equivalents:**

- Highly liquid, short-term investments that are so close to maturity. Examples of cash equivalents are US Treasury bills, commercial paper...

- **Short-term Marketable Securities**

- Examples of marketable securities include notes, bonds, and equity securities, such as common stocks and mutual fund shares, and derivatives..

2.2 Balance Sheet (cont'd)

- **Marketable Securities :**

1. **Held-to-maturity securities** are debt securities acquired with the intent to be held to maturity.
2. **Trading securities** (also known as held-for-trading securities) are debt and equity securities acquired with the intent to profit over the near term.
3. **Available-for-sale securities** are debt and equity securities that are not expected to be held to maturity or traded in the near term. Financial assets, in general, are measured and reported at either amortised cost or fair value.

2.2 Balance Sheet (cont'd)

- **Assets**

- Current Assets:

- **Accounts Receivable**(Trade receivables) :

- They are typically reported at net realizable value, an approximation of fair value, based on estimates of collectability. Allowance for bad debt reflects the company's estimate of the amount of receivables that will ultimately be uncollectible.

- **Inventories(...)**

- Other Current Assets

- **Pre-paid expenses:** Operating expenses that have been paid in advance. Expenses are recognized in the period in which they are incurred—and not necessarily the period in which the payment is made

2.2 Balance Sheet (cont'd)

- **Assets**

- Long-Term Assets

- **Net Property, Plant, & Equipment**

- Depreciation
- Impairment

- **Historical cost model :**

- Carrying Value = Original cost – Accumulated depreciation/Amortization-Impairment

- **Intangible assets:**

- Amortization
- Impairment

2.2 Balance Sheet (cont'd)

- **Depreciation(Tangible assets)**

- Straight-line depreciation

$$\text{SL depreciation expense} = \frac{\text{cost} - \text{residual value}}{\text{useful life}}$$

- **EXAMPLE:** Littlefield Company recently purchased a machine at a cost of \$12,000. The machine is expected to have a residual value of \$2,000 at the end of its useful life in five years. Calculate depreciation expense using the straight-line method

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A company purchases equipment for \$200,000 with a five-year useful life and salvage value of zero. It uses the double-declining balance method of depreciation for two years, then shifts to straight-line depreciation at the beginning of Year 3. Compared with annual depreciation expense under the double-declining balance method, the resulting annual depreciation expense in Year 4 is:

- A smaller
- B the same
- C greater

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2.2 Balance Sheet (cont'd)

- **Depreciation(Tangible assets)**

- Double-declining balance depreciation

DDB depreciation

$$= \left(\frac{2}{\text{useful life}} \right) (\text{cost} - \text{accumulated depreciation})$$

- **EXAMPLE:** Littlefield Company recently purchased a machine at a cost of \$12,000. The machine is expected to have a residual value of \$2,000 at the end of its useful life in five years. Calculate depreciation expense for all five years using the double-declining balance method.

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2.2 Balance Sheet (cont'd)

- **Depreciation**

- **Notice:**

- An asset's **accumulated depreciation** is the total amount deducted over its life.
- Depreciation is not an actual cash expense that the firm pays. Amortization and impairment loss are also non-cash items.

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2.2 Balance Sheet (cont'd)

- **Amortization(Intangible assets)**

- Intangible assets with **finite lives** are amortized over their useful lives.
- Intangible assets with **infinite lives**(e.g., Capitalized R&D...) are not amortized.
- Amortization is identical to the depreciation of tangible assets.

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2.2 Balance Sheet (cont'd)

- **Impairment**

- Impairment charges reflect an unanticipated decline in the value of an asset.
- The impairment loss can be reversed under IFRS(except for goodwill),but is limited to the previous impairment loss.
- Different treatment for different assets.

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2.2 Balance Sheet (cont'd)

- **Inventory Impairment Under IFRS**

- Inventory is reported on the B/S at the lower of cost or net realizable value(NRV).
- NRV = estimated selling price - estimated costs to sell
- If cost>NRV, the inventory is written down to NRV, and the loss is recognized as COGS in the I/S.

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2.2 Balance Sheet (cont'd)

- **Inventory Impairment Under IFRS**

- **EXAMPLE:** Zoom, Inc. sells digital cameras. Per-unit cost information pertaining to Zoom's inventory is as follows:

Original cost	\$210
Estimated selling price	\$225
Estimated selling costs	\$22

- What are the per-unit carrying values of Zoom's inventory using lower of cost or NRV ?
- Assume that in the year after the write-down, net realizable value increases by \$10. What is the impact of the recovery under IFRS

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2.2 Balance Sheet (cont'd)

- **Inventory Impairment Under IFRS**

- **Exercise:**

- Eric's Used Book Store prepares its financial statements in accordance with IFRS. Inventory was purchased for £1 million and later marked down to £550,000. One of the books, however, was later discovered to be a rare collectible item, and the inventory is now worth an estimated £3 million. The inventory is most likely reported on the balance sheet at:
- A £550,000.
 - B £1,000,000.
 - C £3,000,000.

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2.2 Balance Sheet (cont'd)

- **Impairment of long-term assets (held-for use) under IFRS**

- An asset is considered to be impaired when its **carrying amount** exceeds its **recoverable amount**.

Recoverable amount = the higher of	
Fair value - Costs to sell	Value in use (PV of expected future cash flows)

- **Impairment losses** are recognized when the asset's carrying amount is not recoverable.

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2.2 Balance Sheet (cont'd)

- **Impairment of long-term assets (held-for use) under IFRS**

- **EXAMPLE:** Sussex has a machine it uses to produce a single product. The demand for the product has declined substantially since the introduction of a competing product. The company has assembled the following information with respect to the machine:

• Carrying amount	£18,000
• Undiscounted expected future cash flows	£19,000
• Present value of expected future cash flows	£16,000
• Fair value if sold	£17,000
• Costs to sell	£2,000

- Under IFRS, what would the company report for the machine?

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2.2 Balance Sheet (cont'd)

- **Assets**

- Long-Term Assets
- **Goodwill(Unidentifiable)**
- **Goodwill** = Purchase price - Fair value of the acquiree's net identifiable assets
- **Net identifiable assets** = Fair value of identifiable assets - Fair value of liabilities and contingent liabilities
- **Accounting goodwill** arising from acquisitions is capitalized. Gain from a **bargain purchase** is recognized in profit

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2.2 Balance Sheet (cont'd)

- EXAMPLE:** A purchased 100% shares of B for a consideration of \$2.2 billion at the beginning of 2019. On the acquisition date, B's financial data gathered are as follows:

Item	Book value	Fair value
Total assets	\$2 billion	Same as book value except for \$500 million appreciation of PPE
Total liabilities	\$600 million	Same as book value

- B had \$50 million contingent liability disclosed in footnotes. What goodwill is for this acquisition?

2.2 Balance Sheet (cont'd)

- Assets**
 - Long-Term Assets
 - Other long-term assets
 - Investment Property** (Fair value, Cost model...)
 - Investments in Long-term Securities** (Fair value, Amortized cost)

2.2 Balance Sheet (cont'd)

- Assets**

- Long-Term Assets
 - Other long-term assets
 - Deferred Tax Assets:** Deferred tax assets may result when the actual **income tax payable** based on income for tax purposes in a period exceeds the amount of **income tax expense** based on the reported financial statement income due to **temporary timing differences**.

2.2 Balance Sheet (cont'd)

- **Assets**

- **Pension assets**(Fair value...):
- **Defined contribution pension plans**
- **Defined benefit pension plans**
 - Company makes payments into the pension fund, and retirees are paid from the fund. The payments that a company makes into the fund are invested until they are needed to pay the retirees.
 - If the **fair value** of the fund's assets is higher than the **present value of the estimated pension obligation**, the plan has a surplus and the company's balance sheet will reflect a net pension asset. Conversely, the plan has a deficit and the company's balance sheet will reflect a net pension liability.

2.2 Balance Sheet (cont'd)

- **Assets**

- **Measurement base** : The amounts at which items are reported in the financial statement elements depend on their **measurement base**. Measurement bases include **historical cost, amortized cost** (historical cost adjusted for depreciation, amortization, and impairment), and **fair value** (the price at which an asset could be sold, or a liability transferred, in an orderly transaction between willing parties).
- **Non-Financial (long-term) asset**
 - **Historical cost model**
 - **Fair value model** (no depreciation & impairment)
 - **Revaluation model**

2.2 Balance Sheet (cont'd)

- **Measurement base**

- **Revaluation model**
- **Carrying amounts** of long-term assets are the **fair values** at the date of revaluation, should consider depreciation or amortization.
- If a revaluation initially decreases the carrying amount of the asset class, the decrease is recognized as **loss** in I/S.
- If a revaluation initially increases the carrying amount of the asset class, the increase in the carrying amount of the asset class bypasses the income statement and goes directly to equity under the heading of **revaluation surplus as O.C.I.**

2.2 Balance Sheet (cont'd)

- **Revaluation model**

- Any subsequent decrease in the asset's value first decreases the revaluation surplus and then goes to income.
- When an asset is retired or disposed of, any related amount of revaluation surplus included in equity is **transferred directly to retained earnings**.
- **G/L_t** = Fair value_t - Carrying amount_t
- **Carrying amount_t** = Fair value_{t-1} - depreciation/amortization.

2.2 Balance Sheet (cont'd)

- **Revaluation model**

- A company purchased a machine for \$100 million. The estimated useful life is 10 years and estimated residual value is 0. Using the revaluation model to record the PPE.

Carrying amount before revaluation	Fair value at revaluation day	I/S		Revaluation surplus in OCI
		Dep. Exp.	G/L	
Y1	81m			
Y2	88m			
Y3	63m			

2.2 Balance Sheet (cont'd)

- **Revaluation model**

- **Exercise:** MARU S.A. de C.V., a Mexican corporation that follows IFRS, has elected to use the revaluation model for its property, plant, and equipment. One of MARU's machines was purchased for 2,500,000 Mexican pesos (MXN) at the beginning of the fiscal year ended 31 March 2010. As of 31 March 2010, the machine has a fair value of MXN 3,000,000. Should MARU show a profit for the revaluation of the machine?
 - A Yes.
 - B No, because this revaluation is recorded directly in equity.
 - C No, because value increases resulting from revaluation can never be recognized as a profit.

2.2 Balance Sheet (cont'd)

- **Assets**

- **Financial asset**
 - **Amortized cost model**
 - **Fair value model**

2.2 Balance Sheet (cont'd)

- **Measurement base**

- Financial asset-Amortized cost

Held-to-maturity	
Recognition	Amortized cost
Unrealized G/L	Not reported
Realized G/L	I/S

- Triple D Corporation purchased a bond with 2 years' maturity, coupon rate 10% and par value \$1,000, market yield 8%. Interest rates have recently decreased and the market value of the bond increased to \$1,030. Determine the bond's effect on Triple D's financial statements if the bond is classified as a held-to-maturity security.

2.2 Balance Sheet (cont'd)

- **Measurement base**

- Financial asset-Fair value(1)

Trading-security	
Recognition	Fair value
Unrealized G/L	I/S
Realized G/L	I/S

- Triple D Corporation purchased a bond with 2 years' maturity, coupon rate 10% and par value \$1,000, market yield 8%. Interest rates have recently decreased and the market value of the bond increased to \$1,030. Determine the bond's effect on Triple D's financial statements if the bond is classified as a trading security.

2.2 Balance Sheet (cont'd)

• Measurement base

- Financial asset-Fair value(2)

Available-for-sale	
Recognition	Fair value
Unrealized G/L	OCI
Realized G/L	I/S

- Triple D Corporation purchased a bond with 2 years' maturity, coupon rate 10% and par value \$1,000, market yield 8%. Interest rates have recently decreased and the market value of the bond increased to \$1,030. Determine the bond's effect on Triple D's financial statements if the bond is classified as a Available-for-sale security.

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单选题 1分

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For financial assets classified as held to maturity, how are unrealized gains and losses reflected in shareholders' equity?

- A They are not recognized
- B They flow through retained earnings
- C They are a component of accumulated other comprehensive income



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投票 最多可选1项



For financial assets classified as trading securities, how are unrealized gains and losses reflected in shareholders' equity?

- A They are not recognized
- B They flow through retained earnings
- C They are a component of accumulated other comprehensive income

投票 最多可选1项



For financial assets classified as available for sale, how are unrealized gains and losses reflected in shareholders' equity?

- A They are not recognized
- B They flow through retained earnings
- C They are a component of accumulated other comprehensive income



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2.2 Balance Sheet (cont'd)

- **Liabilities**

- Current Liabilities: Obligations that will be satisfied within one year or one operating cycle, whichever is greater.
 - **Accounts Payable**(Trade payables)
 - Short-Term Debt/Notes Payable
 - Current Maturities of Long-Term Debt
 - **Unearned revenue**(Deferred income预收收入)
 - **Accrued liabilities**(Accrued expenses应计负债)
 - Taxes Payable、Wages Payable、Accrued warranty costs

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单选题 1分

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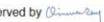


Money received from customers for products to be delivered in the future is recorded as:

- A revenue and an asset
- B an asset and a liability
- C revenue and a liability



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2.2 Balance Sheet (cont'd)

- **Net Working Capital**

- Current Assets – Current Liabilities

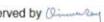
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2.2 Balance Sheet (cont'd)

- **Liabilities**

- Long-Term Liabilities
 - **Capital Leases**(...)
 - **Deferred Taxes Liability**
 - **Long-Term Debt**
 - Companies have the option to report the bonds at their current fair values. Most companies maintain the historical cost of the bonds after issuance, and they amortise any discount or premium over the life of the bond. The amount reported on the balance sheet for bonds is thus the **historical cost plus or minus the cumulative amortisation**, which is referred to as **amortised cost**.

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2.2 Balance Sheet (cont'd)

• Accounting for Bond Amortisation

- For bonds issued at a premium to face value : As the premium is amortised, the carrying amount of the bonds will decrease to the face value. The reported interest expense will be less than the coupon payment.
- For bonds issued at a discount to face value : As the discount is amortised, the carrying amount of the bonds will increase to the face value. The reported interest expense will be higher than the coupon payment.

1. Carrying amount_t = Carrying amount_{t-1} + Amortisation

2. Amortisation = Int. exp. – Int. payment

3. Int. exp.=Effective int. rate × Carrying amount_{t-1}

4. Int. payment= Coupon rate × Face value

Accounting for Bond Amortisation

• Amortising a Bond Discount

- **Example:** Debond Corp. issues £1,000,000 face value of five-year bonds, dated 1 January 2017, when the market interest rate is 6 percent. The sales proceeds are £957,876. The bonds pay 5 percent interest annually on 31 December.

1. What is the interest payment on the bonds each year?

2. What amount of interest expense on the bonds would be reported in 2017 and 2018 using the effective interest rate method?

3. Determine the reported value of the bonds (i.e., the carrying amount) at 31 December 2017 and 2018, assuming the effective interest rate method is used to amortise the discount.

Accounting for Bond Amortisation

• Amortising a Bond Premium(homework)

- Prembond Corp. issues £1,000,000 face value of five-year bonds, dated 1 January 2017, when the market interest rate is 4 percent. The sales proceeds are £1,044,518. The bonds pay 5 percent interest annually on 31 December.

1. What is the interest payment on the bonds each year?
2. What amount of interest expense on the bonds would be reported in 2017 and 2018 using the effective interest rate method?
3. Determine the reported value of the bonds (i.e., the carrying amount) at 31 December 2017 and 2018, assuming the effective interest rate method is used to amortise the premium.

Table 2.1 (cont'd)
Global Conglomerate Corporation Balance Sheet

GLOBAL CONGLOMERATE CORPORATION		
Consolidated Balance Sheet		
Year Ended December 31 (in \$ million)		
Liabilities and Stockholders' Equity	2015	2014
Current Liabilities		
Accounts payable	29.2	24.5
Notes payable/short-term debt	3.5	3.2
Current maturities of long-term debt	13.3	12.3
Other current liabilities	2.0	4.0
Total current liabilities	48.0	44.0
Long-Term Liabilities		
Long-term debt	99.9	76.3
Capital lease obligations	—	—
Total debt	99.9	76.3
Deferred taxes	7.6	7.4
Other long-term liabilities	—	—
Total long-term liabilities	107.5	83.7
Total Liabilities	155.5	127.7
Stockholders' Equity	22.2	21.2
Total Liabilities and Stockholders' Equity	177.7	148.9

2.2 Balance Sheet (cont'd)

- **Stockholder's Equity**

- **Contributed capital** (实缴资本、股本) : The **par value** of common stock is a stated or legal value.
- **Additional paid-in capital** (资本公积)
 - **Treasury stock** (库存股) : Stock that has been reacquired by the issuing firm but not yet retired. Treasury stock has no voting rights and does not receive dividends.
 - **Retained earnings** : The undistributed earnings (net income) of the firm since inception. (中国：未分配利润+盈余公积)

2.2 Balance Sheet (cont'd)

- **Relationship between financial statements-1:**

- Where does retained earning come from?
- **BASE rule:**
 - Beginning RE + Net income - Dividend declared = Ending RE

2.2 Balance Sheet (cont'd)

- **Stockholder's Equity**

- **Accumulated other comprehensive income:** Changes in stockholders' equity except for transactions recognized in the income statement and transactions with shareholders.
 - **Unrealized gains/losses from available-for-sale security.**
 - Unrealized gains/losses from cash flow hedging derivatives.
 - **Revaluation surplus from long-lived asset.**
 - Foreign currency translation gains /losses.
 - Adjustments for minimum pension liability.(DB)

2.2 Balance Sheet (cont'd)

- **Relationship between financial statements-2:**

- B/S, I/S, CI/S

2.2 Balance Sheet (cont'd)

• Stockholder's Equity

- Could possibly be negative.
- Many of the firm's valuable assets may not be captured on the balance sheet.
- Some assets are measured at historical cost.

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2.2 Balance Sheet (cont'd)

• Market Value Versus Book Value

- Book value of equity is an inaccurate assessment of the actual value of the firm's equity.
- Market Value of Equity (Market Capitalization)
 - Market Price per Share x Number of Shares Outstanding
 - Cannot be negative
 - Often differs substantially from book value

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2.2 Balance Sheet (cont'd)

• Market Value Versus Book Value

- Market-to-Book Ratio(Price-to-Book)

$$\text{Market-to-Book Ratio} = \frac{\text{Market Value of Equity}}{\text{Book Value of Equity}}$$
- Analysts often classify firms with low market-to-book ratios as value stocks, and those with high market-to-book ratios as growth stocks.

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2.3 Income Statement

- Income statement can be combined with "other comprehensive income" and presented as a single statement of comprehensive income.
- The income statement reports the revenues and expenses of the firm over a period of time.
- Revenues are the amounts reported from the sale of goods and services in the normal course of business. Revenue less adjustments for estimated returns is known as net revenue.

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2.3 Income Statement

- Expenses are the amounts incurred to generate revenue and include cost of goods sold, operating expenses, interest, and taxes.**
- Expenses are grouped together by their nature or function.**
 - Presenting all **depreciation expense** from manufacturing and administration together in one line of the income statement is an example of grouping **by nature** of the expense.
 - Combining all costs associated with manufacturing (e.g., raw materials, depreciation, labor, etc.) as **cost of goods sold** is an example of grouping **by function**.

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2.3 Income Statement (cont'd)

Net income= revenues – ordinary expenses +
 other income – other expense +
 gains – losses

- Gains/losses:**
 - Ordinary activities & non-ordinary activities
 - Continuing activities & discontinued activities

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2.3 Income Statement (cont'd)

Income Statement

Revenue
COGS

Gross profit

SG&A(Selling, General, and Administrative expenses)

Operating Income

Other Income/Other Expense
 +/-Gains / losses from ordinary activities
 +/-Gains / losses from unusual or infrequent activities

EBIT

Interest Income/Interest Expense
 -Tax expense

NI from continuing operations

+/-Gain / loss from discontinued operation(**Net of tax**)

NI

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单选题 1分

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Under IFRS, a loss from the destruction of property in a fire would most likely be classified as:

- A continuing operations
- B discontinued operations
- C other comprehensive income

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All rights reserved by **2.3 Income Statement (cont'd)**

- **Recognition of revenue and expenses :**
 - Revenue is recognized when **earned** and expenses are recognized when **incurred**.
 - It does not necessarily coincide with the **receipt** or **payment** of cash.
 - Consequently, firms can manipulate net income by recognizing revenue earlier or later or by delaying or accelerating the recognition of expenses.

2-70

2.3 Income Statement (cont'd)• **General principles of revenue recognition :**– **Five steps in recognizing revenue:**

1. Identify the contract(s) with a customer
2. Identify the separate or distinct performance obligations in the contract
3. Determine the transaction price
4. Allocate the transaction price to the performance obligations in the contract
5. Recognize revenue when (or as) the entity satisfies a performance obligation

2-71

All rights reserved by **2.3 Income Statement (cont'd)**• **Revenue recognition :**

- **EXAMPLE: Performance obligation and progress towards completion**
 - Builder Co.'s contract with Customer Co. to construct the commercial building specifies consideration of \$1 million. Builder Co.'s expected total costs are \$700,000. The Builder incurs \$420,000 in costs in the first year. Assuming that costs incurred provide an appropriate measure of progress toward completing the contract, how much revenue should Builder Co. recognize for the first year?

2-72

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2.3 Income Statement (cont'd)

- **Revenue recognition :**

- EXAMPLE: Variable consideration—performance bonus (I)
 - A contractor agrees to build a warehouse for a price of \$10 million and estimates the total costs of construction at \$8 million. During the first year of construction, the builder incurs \$4 million of costs. Consider this construction contract with the addition of a promised bonus payment of \$1 million if the building is completed in three years. At the end of the first year, the contractor has some uncertainty about whether he can complete building by the end of the third year. How much revenue should Builder recognize for the first year?

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2.3 Income Statement (cont'd)

- **Revenue recognition :**

- EXAMPLE: Variable consideration—performance bonus (II)
 - During the second year of construction, the contractor incurred an additional \$2 million in costs and the environmental concerns have been resolved. The contractor has no doubt that the building will be finished in time to receive the bonus payment. How much revenue should Builder recognize for the second year?

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2.3 Income Statement (cont'd)

- **Revenue recognition :**

- EXAMPLE: Contract revisions
 - Assume all facts from previous example. A contract revision requires installation of refrigeration to provide cold storage in part of the warehouse. The contractor agrees to the revisions during the second year of construction and believes they will increase his costs by \$2 million, to \$10 million. The transaction value is increased by \$3 million, to \$14 million, including the bonus. As before, the contractor has incurred \$6 million in costs through the end of the second year. How much revenue should Builder recognize for the second year?

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2.3 Income Statement (cont'd)

- **Expense recognition :**

- A general principle of expense recognition is the **matching principle**. Under matching, a company recognizes some expenses when associated revenues are recognized and thus, expenses and revenues are matched.
 - e.g., cost of goods sold.

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2.3 Income Statement (cont'd)

- Relationship between financial statements-3:**

- COGS & Inventory
 - COGS(Cost of goods sold)
 - Once inventory is sold, inventory cost becomes COGS.
 - $\text{COGS} = \text{Beginning inventory} + \text{Purchases} - \text{Ending inventory}$

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2.3 Income Statement (cont'd)

- Costs included in inventories:(Step 1)**

- Purchase cost less trade discounts and rebates.
- Conversion (manufacturing) costs including labor and overhead.
- Other costs necessary to bring the inventory to its present location and condition.

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2.3 Income Statement (cont'd)

- Costs recognised as expenses:**

- Abnormal waste of materials, labor, or overhead.
- Storage costs (unless required as part of production).
- Administrative overhead.
- Selling costs.

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2.3 Income Statement (cont'd)

- EXAMPLE :** Acme Enterprises prepares its financial statements in accordance with IFRS, manufactures tables. In 2019, the factory produced 900,000 finished tables and scrapped 1,000 tables. For the finished tables, raw material costs were €9 million, direct labour conversion costs were €18 million, and production overhead costs were €1.8 million. The 1,000 scrapped tables (attributable to abnormal waste) had a total production cost of €30,000 (€10,000 raw material costs and €20,000 conversion costs; these costs are not included in the €9 million raw material and €19.8 million total conversion costs of the finished tables). During the year, Acme spent €1 million for freight delivery charges on raw materials and €500,000 for storing finished goods inventory. Acme does not have any work-in-progress inventory at the end of the year.

1. What costs should be included in inventory in 2019?
2. What costs should be expensed in 2019?

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2.3 Income Statement (cont'd)

- Solution:

- Total inventory costs for 2009 are as follows:

Raw materials	€9,000,000
Direct labour	18,000,000
Production overhead	1,800,000
Transportation for raw materials	1,000,000
Total inventory costs	€29,800,000

- Total costs that should be expensed are as follows:

Abnormal waste	€30,000
Storage of finished goods inventory	500,000
Total	€530,000

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2.3 Income Statement (cont'd)

- Inventory valuation methods:(Step 2)

- Under IFRS, the permissible methods are:

- Specific identification
- Weighted average cost

- First-in, first-out. (FIFO):

- The first item purchased is assumed to be the first item sold.
- The advantage of FIFO is that **ending inventory** is valued based on the most recent purchases, arguably the **best approximation of current cost**. Conversely, FIFO **COGS** is based on the earliest purchase costs. In an inflationary environment, COGS will be **understated** compared to current cost. As a result, earnings will be overstated.

2-82

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LIFO→FIFO

2.3 Income Statement (cont'd)

- Inventory system:(Step 3)

- Periodic inventory system(实地盘存制):

- Inventory values and COGS are determined at the end of the accounting period. To calculate COGS, ending inventory is subtracted from **goods available for sale**.

- Perpetual inventory system (永续盘存制):

- Inventory values and COGS are updated continuously.

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2.3 Income Statement (cont'd)

- EXAMPLE :** Below is GSI's record of the purchases, sales, and quantity of inventory on hand in 2018.

Date	Purchased	Sold	Inventory on Hand
5 January	100,000 kg at 110 AED/kg		100,000 kg
1 February		80,000 kg at 240 AED/kg	20,000 kg
8 March	200,000 kg at 100 AED/kg		220,000 kg
6 April		100,000 kg at 240 AED/kg	120,000 kg
23 May		60,000 kg at 240 AED/kg	60,000 kg
7 July		40,000 kg at 240 AED/kg	20,000 kg
2 August	300,000 kg at 90 AED/kg		320,000 kg
5 September		70,000 kg at 240 AED/kg	250,000 kg
17 November		90,000 kg at 240 AED/kg	160,000 kg
8 December		80,000 kg at 240 AED/kg	80,000 kg
Total goods available for sale =		Total sales = 124,800,000 AED	
		58,000,000 AED	

- What are the ending inventory, cost of sales using the perpetual system and the FIFO method? How do these compare with the amounts using the periodic system?

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Zimt AG started business in 2017 and uses the FIFO method. During 2017, it purchased 45,000 units of inventory at €10 each and sold 40,000 units for €20 each. In 2018, it purchased another 50,000 units at €11 each and sold 45,000 units for €22 each. Its 2018 ending inventory balance (€ thousands) was closest to:

A €105

B €109

C €110

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2-86

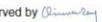
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Table 2.2 Global Conglomerate Corporation Income Statement Sheet

GLOBAL CONGLOMERATE CORPORATION		
Income Statement		
	Year Ended December 31 (in \$ million)	
	2015	2014
Total sales	186.7	176.1
Cost of sales	(153.4)	(147.3)
Gross Profit	33.3	28.8
Selling, general, and administrative expenses	(13.5)	(13.0)
Research and development	(8.2)	(7.6)
Depreciation and amortization	(1.2)	(1.1)
Operating Income	10.4	7.1
Other income	—	—
Earnings Before Interest and Taxes (EBIT)	10.4	7.1
Interest income (expense)	(7.7)	(4.6)
Pretax Income	2.7	2.5
Taxes	(0.7)	(0.6)
Net Income	2.0	1.9
Earnings per share:	\$0.556	\$0.528
Diluted earnings per share:	\$0.526	\$0.500

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2.3 Income Statement (cont'd)

• Basic EPS:

- Earnings per share (EPS) is one of the most commonly used corporate profitability performance measures
- All firms with complex capital structures must report both basic and diluted EPS. A complex capital structure contains potentially dilutive securities such as options, warrants, or convertible securities.

2-88

2.3 Income Statement (cont'd)

- **Basic EPS:**

$$\text{basic EPS} = \frac{\text{net income} - \text{preferred dividends}}{\text{weighted average number of common shares outstanding}}$$

- The weighted average number of common shares is the number of shares **outstanding** during the year, weighted by the portion of the year they were outstanding.

1. New issue is weighted by time.

2. A **stock split** or **stock dividend** is applied to all shares outstanding prior to the split or dividend and to the beginning-of-period weighted average shares.
- A 2-for-1 split means 1 share split to 2 shares.

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2.3 Income Statement (cont'd)

- **EXAMPLE:**

1. Johnson Company has 10,000 shares outstanding at the beginning of the year. On April 1, Johnson issues 4,000 new shares. On July 1, Johnson distributes a 10% stock dividend. On September 1, Johnson repurchases 3,000 shares. Calculate Johnson's weighted average number of shares outstanding for the year, for its reporting of basic earnings per share.
2. Johnson Company has net income of \$10,000, paid \$1,000 cash dividends to its preferred shareholders, and paid \$1,750 cash dividends to its common shareholders. Calculate Johnson's basic EPS using the weighted average number of shares from the previous example.

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2.3 Income Statement (cont'd)

- Dilutive securities are stock options, warrants, convertible debt, or convertible preferred stock that would decrease EPS if exercised or converted to common stock.

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EPS with convertible preferred stock

- **Example:** During 2019, ZZZ reported net income of \$4,350,000 and had 2,000,000 shares of common stock outstanding for the entire year. ZZZ's 7%, \$5,000,000 par value preferred stock is convertible into common stock at a conversion rate of 1.1 shares for every \$10 of par value. Compute basic and diluted EPS.

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2-92

EPS with convertible debt

- Example:** During 2019, YYY Corp. had earnings available to common shareholders of \$2,500,000 and had 1,000,000 shares of common stock outstanding for the entire year, for basic EPS of \$2.50. During 2018, YYY issued 2,000, \$1,000 par, 5% bonds for \$2,000,000 (issued at par). Each of these bonds is convertible to 120 shares of common stock. The tax rate is 30%. Compute the diluted EPS.

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EPS with stock options

- Stock options and warrants are dilutive only when their exercise prices are less than the average market price of the stock over the year. If the options or warrants are dilutive, use the treasury stock method to calculate the number of shares used in the denominator.
 - The treasury stock method assumes that the funds received by the company from the exercise of the options would be used to hypothetically purchase shares of the company's common stock in the market at the **average market price**.
 - The **net increase** in the number of shares outstanding (the adjustment to the denominator) is the number of shares created by exercising the options less the number of shares hypothetically repurchased with the proceeds of exercise.

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EPS with stock options

- Example:** During 2019, C reported earnings available to common shareholders of \$1,200,000 and had 500,000 shares of common stock outstanding for the entire year. C has 100,000 stock options (or warrants) outstanding the entire year. Each option allows its holder to purchase one share of common stock at \$15 per share. The average market price of C's common stock during 2016 is \$20 per share. Compute diluted EPS.

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EPS with stock options

Number of common shares created if the options are exercised:	100,000 shares
Cash inflow if the options are exercised:	$(\$15/\text{share})(100,000) = \$1,500,000$
Number of shares that can be purchased with these funds is:	$\$1,500,000 / \$20 = 75,000 \text{ shares}$
Net increase in common shares outstanding from the exercise of the stock options:	$(100,000 - 75,000)$ 25,000 shares

- diluted EPS = $\$1,200,000 / (500,000 + 25,000)$
- = \$2.29

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单选题 1分

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When calculating diluted EPS, which of the following securities in the capital structure increases the weighted average number of common shares outstanding without affecting net income available to common shareholders?

- A Stock options
- B Convertible debt that is dilutive
- C Convertible preferred stock that is dilutive

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单选题 2分

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Cell Services Inc. (CSI) had 1,000,000 average shares outstanding during all of 2009. During 2009, CSI also had 10,000 options outstanding with exercise prices of \$10 each. The average stock price of CSI during 2009 was \$15. For purposes of computing diluted earnings per share, how many shares would be used in the denominator?

- A 1,003,333
- B 1,006,667
- C 1,010,000

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2-98

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单选题 3分

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Laurelli Builders (LB) reported the following financial data for year-end 31 December:

Common shares outstanding, 1 January	2,020,000
Common shares issued as stock dividend, 1 June	380,000
Warrants outstanding, 1 January	500,000
Net income	\$3,350,000
Preferred stock dividends paid	\$430,000
Common stock dividends paid	\$240,000

Which statement about the calculation of LB's EPS is most accurate?

- A LB's basic EPS is \$1.12
- B LB's diluted EPS is equal to or less than its basic EPS
- C The weighted average number of shares outstanding is 2,210,000

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2.4 Statement of Cash Flows**• Three Sections**

- Operating Activity
- Investing Activity
- Financing Activity

2-100

2.4 Statement of Cash Flows (cont'd)

Cash Flows from operating activity	
Inflow	Outflow
Cash received from customers	Cash paid to suppliers(employee...)
Sale proceeds from trading securities	Acquisition of trading securities

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2.4 Statement of Cash Flows (cont'd)

Cash Flows from investing activity	
Inflow	Outflow
Sale proceeds from PP&E (intangible assets...)	Acquisition of PP&E (intangible assets...)
Sale proceeds from non-trading securities	Acquisition of non-trading securities
Principal received from loans made to others	Loans made to others

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2.4 Statement of Cash Flows (cont'd)

Cash Flows from financing activity	
Inflow	Outflow
Cash receipts from borrowing (leases)	Principal paid on debt or leases
Cash receipts from issuing stock (bonds...)	Payments to repurchase stock

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2.4 Statement of Cash Flows (cont'd)

Topic	IFRS	US GAAP
Classification of cash flows:		
■ Interest received	Operating or investing	Operating
■ Interest paid	Operating or financing	Operating
■ Dividends received	Operating or investing	Operating
■ Dividends paid	Operating or financing	Financing
■ Bank overdrafts	Considered part of cash equivalents	Not considered part of cash and cash equivalents and classified as financing
■ Taxes paid	Generally operating, but a portion can be allocated to investing or financing if it can be specifically identified with these categories	Operating

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2.4 Statement of Cash Flows (cont'd)

- EXAMPLE:**
- A company recorded the following in Year 1:

Proceeds from issuance of long-term debt	€300,000
Purchase of equipment	€200,000
Loss on sale of equipment	€70,000
Proceeds from sale of equipment	€120,000
Equity in earnings of affiliate	€10,000
- On the Year 1 statement of cash flows, the company would report net cash flow from investing activities closest to:
 - A (€150,000).
 - B (€80,000).
 - C €200,000.

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2.4 Statement of Cash Flows (cont'd)

- Relationship between financial statements-4:**
 - $\text{CFO} + \text{CFI} + \text{CFF} = \text{Changes in cash balance}$
 - $= \text{End. Cash} - \text{Beg. Cash}$
- Information on Statement of Cash Flow come from two sources:
 - Income statement items
 - Changes in current balance sheet accounts

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Table 2.3 Global Conglomerate Corporation Statement of Cash Flows

GLOBAL CONGLOMERATE CORPORATION		
Statement of Cash Flows		
Year Ended December 31 (in \$ million)		
	2015	2014
Operating activities		
Net income	2.0	1.9
Depreciation and amortization	1.2	1.1
Other non-cash items	(2.8)	(1.0)
Cash effect of changes in		
Accounts receivable	(5.3)	(0.3)
Accounts payable	4.7	(0.5)
Inventory	(1.0)	(1.0)
Cash from operating activities	(1.2)	0.2
Investment activities		
Capital expenditures	(14.0)	(4.0)
Acquisitions and other investing activity	(7.0)	(2.0)
Cash from investing activities	(21.0)	(6.0)
Financing activities		
Dividends paid	(1.0)	(1.0)
Sale (or purchase) of stock	—	—
Increase in borrowing	24.9	5.5
Cash from financing activities	23.9	4.5
Change in cash and cash equivalents	1.7	(1.3)

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2.4 Statement of Cash Flows (cont'd)

- Noncash investing and financing activities**
 - Noncash investing and financing activities** are not reported in the cash flow statement since they do not result in inflows or outflows of cash. For example,
 - If a firm acquires real estate with financing provided by the seller, the firm has made an investing and financing decision. This transaction is the equivalent of borrowing the purchase price.
 - Exchange of debt for equity. Such an exchange results in a reduction of debt and an increase in equity.

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2.4 Statement of Cash Flows (cont'd)

- Methods to calculate cash flow
 - Direct Method
 - CFO、CFI、CFF
 - Indirect Method
 - CFO

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2.4 Statement of Cash Flows (CFO-Direct Method)

- Assumption: Interest paid and tax paid are classified as CFO.
- **CFO = Cash received from customers**
 - Beginning AR + Revenue – Cash received = Ending AR
- **– Cash paid to suppliers**
 - Beginning AP + Purchase – Cash paid = Ending AP
 - Beginning Inventory + Purchase – COGS = Ending Inventory
- **– Cash paid to employees**
 - Beginning wage payable + Wage expense – Cash paid = Ending wage payable
- **– Interest paid**
 - Beginning interest payable + Interest expense – Cash paid = Ending interest payable
- **– Taxes paid**
 - Beginning tax payable + Current tax payable – Cash paid = Ending tax payable

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2.4 Statement of Cash Flows (CFO-Direct Method)

- **EXAMPLE:** In 2018, a company using US GAAP made cash payments of \$6 million for salaries, \$2 million for interest expense, and \$4 million for income taxes. Additional information for the company is provided in the table:

(\$ millions)	2017	2018
Revenue	42	37
Cost of goods sold	18	16
Inventory	36	40
Accounts receivable	22	19
Accounts payable	14	12

- Based on the information given, calculate the company's operating cash flow in 2018.

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2.4 Statement of Cash Flows (CFO-Direct Method)

• Cash Paid for Other Operating Expenses

- Other operating expenses
- Plus: Increase in prepaid expenses
- Minus: Increase in other accrued liabilities
- = Cash paid for other operating expenses

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2.4 Statement of Cash Flows (CFO-Direct Method)

- **EXAMPLE:** Black Ice, a fictitious sportswear manufacturer, reported other operating expenses of \$30 million. Prepaid insurance expense increased by \$4 million, and accrued utilities payable decreased by \$7 million. Insurance and utilities are the only two components of other operating expenses. How much cash did the company pay in other operating expenses?
 - A \$19 million.
 - B \$33 million.
 - C \$41 million.

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单选题 2分

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Green Glory Corp., a garden supply wholesaler, reported cost of goods sold for the year of \$80 million. Total assets increased by \$55 million, including an increase of \$5 million in inventory. Total liabilities increased by \$45 million, including an increase of \$2 million in accounts payable. The cash paid by the company to its suppliers is most likely closest to:

- A \$73 million
- B \$77 million
- C \$83 million

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单选题 2分

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White Flag, a women's clothing manufacturer, reported salaries expense of \$20 million. The beginning balance of salaries payable was \$3 million, and the ending balance of salaries payable was \$1 million. How much cash did the company pay in salaries?

- A \$18 million
- B \$21 million
- C \$22 million

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

- Begin with net income.
- 1. **Subtract gains or add losses that resulted from non-operating activity cash flows.**
 - Investing activities
 - Gains/Losses on sale of assets(**CFI**)
 - Income /Loss on investments accounted for under the equity method(**CFI**)
 - Financing activities
 - Gains/Losses on retirement of debt(**CFF**,性质类似于Gains/losses on sale of financial assets)

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

- 2. **Subtract gains or add losses that resulted from unrealized gains/losses from operating activity.**
 - Sale proceeds from trading securities → CFO
 - Unrealized gains/Losses of trading securities should be adjusted.

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

- 3. Add back all **noncash expenses** to income.
 - Non-cash items :
 - Depreciation expense of tangible assets
 - Amortisation expense of intangible assets
 - Write-down of assets
 - Amortisation of bond (Assumption: Treat bond as liability and int. payment as CFO. Discount,+,(性质类似AP; Premium,-,(性质类似Prepaid expenses.))
 - Is amortisation of bond treated as a liability a CFO or CFF? Is amortisation of bond treated as an asset a CFO or CFI?

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Example

The Impact of Depreciation on Cash Flow

Problem

Suppose Global had an additional \$1 million depreciation expense in 2015. If Global's tax rate on pretax income is 26%, what would be the impact of this expense on Global's earnings? How would it impact Global's cash balance at the end of the year?

Solution

Depreciation is an operating expense, so Global's operating income, EBIT, and pretax income would fall by \$1 million. This decrease in pretax income would reduce Global's tax bill by $26\% \times \$1 \text{ million} = \0.26 million . Therefore, net income would fall by $1 - 0.26 = \$0.74 \text{ million}$.

On the statement of cash flows, net income would fall by \$0.74 million, but we would add back the additional depreciation of \$1 million because it is not a cash expense. Thus, cash from operating activities would rise by $-0.74 + 1 = \$0.26 \text{ million}$. Thus, Global's cash balance at the end of the year would increase by \$0.26 million, the amount of the tax savings that resulted from the additional depreciation expense.

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

4. Increase in DTL is added and decrease in DTL is subtracted.

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

5. Add or subtract **changes** to balance sheet current operating accounts as follows:
 - Increases in the current operating asset accounts are subtracted, while decreases are added. (e.g., accounts receivable, inventory, and prepaid expenses)
 - Increases in the current operating liability accounts are added, while decreases are subtracted. (e.g., accounts payable and accrued expense liabilities.)

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2.4 Statement of Cash Flows

- **CFO-Indirect Method**

- **EXAMPLE:** An analyst gathered the following information from a company's 2018 financial statements (in \$ millions):

Balances as of Year Ended 31 December	2017	2018
Retained earnings	120	145
Accounts receivable	38	43
Inventory	45	48
Accounts payable	36	29

- In 2018, the company declared and paid cash dividends of \$10 million and recorded depreciation expense in the amount of \$25 million. The company considers dividends paid a financing activity, calculate the company's CFO in 2018.

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2.4 Statement of Cash Flows

- **CFI**

- Loan made to others or principal received from loan(BASE)
- Non-trading securities(BASE)
 1. Int. received → CFO or CFI
 2. Amortization → CFO
 3. Gains/Losses → CFI
 4. Principal → CFI

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2.4 Statement of Cash Flows

- CFI

- Long-lived assets(Amortization and impairment not considered)

- Inflow:

$$\text{Selling}_{\text{Disposal}} = \text{BV}_{\text{Disposal}} + \text{Gains/Losses}_{\text{Disposal}}$$

$$\text{I. } \text{BV}_{\text{Disposal}} = \text{GV}_{\text{Disposal}} - \text{Acc.Dep.}_{\text{Disposal}}$$

$$\text{Beg. GV}_{\text{Total}} + \text{Purchase}_{\text{New}} - \text{GV}_{\text{Disposal}} = \text{End. GV}_{\text{Total}}$$

$$\text{Beg. Acc.Dep.}_{\text{Total}} + \text{Dep.} - \text{Acc.Dep.}_{\text{Disposal}} = \text{End. Acc.Dep.}_{\text{Total}}$$

$$\text{II. Beg. BV}_{\text{Total}} + \text{Purchase}_{\text{New}} - (\text{BV}_{\text{Disposal}} + \text{Dep.}) = \text{End. BV}_{\text{Total}}$$

2.4 Statement of Cash Flows

- CFI

- Long-lived assets

- Outflow:

$$\text{I. Beg.GV}_{\text{Total}} + \text{Purchase}_{\text{New}} - \text{GV}_{\text{Disposal}} = \text{End. GV}_{\text{Total}}$$

$$\text{II. Beg. BV}_{\text{Total}} + \text{Purchase}_{\text{New}} - (\text{BV}_{\text{Disposal}} + \text{Dep.}) = \text{End. BV}_{\text{Total}}$$

2.4 Statement of Cash Flows

- EXAMPLE:

Income Statement (2017)		
	2017	2016
Depreciation	7,000	
Gain from sale of land	10,000	
Balance Sheet		
	2017	2016
Land	35,000	40,000
Gross plant and equipment	85,000	60,000
Accumulated depreciation	(16,000)	(9,000)
Net plant and equipment	69,000	51,000
Goodwill	1,000	1,000

- Based on the information given, calculate the company's CFI in 2017.

2.4 Statement of Cash Flows

- Exercise:** Copper, Inc., a fictitious brewery and restaurant chain, reported a gain on the sale of equipment of \$12 million. In addition, the company's income statement shows depreciation expense of \$8 million and the cash flow statement shows capital expenditure of \$15 million, all of which was for the purchase of new equipment.

Balance sheet item	2017	2018
Equipment	\$100 million	\$109 million
Accumulated depreciation—equipment	\$30 million	\$36 million

- Using the above information from the comparative balance sheets, how much cash did the company receive from the equipment sale?
- A \$12 million. B \$16 million. C \$18 million.

单选题 2分

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Green Glory Corp. sold a shipment of machines. Its income statement shows 0.5 million gain from selling old machines and 4 million depreciation cost. The balance sheet shows:

	2019	2018
Gross machine	18	15
Accumulated depreciation-machine	(9)	(7)

- A -\$6.5 million
- B -\$4.5 million
- C -\$2.5million

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All rights reserved by **2.4 Statement of Cash Flows**

- **CFF:**
 - Stock:
 - Beg. common stock + **Stock issued - Cash paid to reacquire stock** = End. common stock
 - Bond:
 - Beg. bonds payable + **Bond issued - Bonds repaid** = End. bonds payable (Carrying value)
 1. Int. payment → CFO or CFF
 2. Amortization → CFO
 3. Gains/Losses → CFF
 4. Principal → CFF

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All rights reserved by **2.4 Statement of Cash Flows**

- **CFF:**
 - Dividend paid:
 - Assumption: Dividend is classified as CFF.
 - Beg. Div. payable + **Div. declared - Div. paid** = End. Div. payable
 - Beg. RE + Net income - **Div. declared** = End. RE

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2.4 Statement of Cash Flows

- **EXAMPLE:**

Income Statement (2017)		
Balance Sheet		
	2017	2016
Net income	37,000	
Dividends payable	6,000	1,000
Bonds	15,000	10,000
Common stock	40,000	50,000
Retained earnings	59,000	30,500

- Based on the information given, calculate the company's CFF in 2017.

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单选题 3分

此题未设置答案, 请点击右侧设置按钮



Jaderong Plinkett Stores reported net income of \$25 million. Change in dividend payable is 0 and there's no outstanding debt. Using the following information from the comparative balance sheets (in millions), what should the company report in the financing section of the statement of cash flows in 2018?

Balance Sheet Item	12/31/2017	12/31/2018	Change
Common stock	\$100	\$102	\$2
Additional paid-in capital common stock	\$100	\$140	\$40
Retained earnings	\$100	\$115	\$15
Total stockholders' equity	\$300	\$357	\$57

- A Issuance of common stock of \$42 million; dividends paid of \$10 million.
- B Issuance of common stock of \$38 million; dividends paid of \$10 million.
- C Issuance of common stock of \$42 million; dividends paid of \$40 million.

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2.5 Financial Statement Analysis

1. Common ratios used in financial analysis

- Activity ratios
- Liquidity ratios
- Solvency ratios
- Profitability ratios

2. Equity analysis

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2.5 Financial Statement Analysis

• Common ratios :

- **Activity ratios.** Give indications of how well a firm utilizes various assets.
- **Liquidity ratios.** Liquidity here refers to the ability to pay short-term obligations as they come due.
- **Solvency ratios.** Give the information on the firm's financial leverage and ability to meet its longer-term obligations.
- **Profitability ratios.** Provide information on how well the company generates operating profits and net profits.

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2.5 Financial Statement Analysis (cont'd)

• Activity ratios

Activity Ratios	Numerator	Denominator
Inventory turnover	Cost of sales or cost of goods sold	Average inventory
Days of inventory on hand (DOH)	Number of days in period	Inventory turnover
Receivables turnover	Revenue	Average receivables
Days of sales outstanding (DSO)	Number of days in period	Receivables turnover
Payables turnover	Purchases	Average trade payables
Number of days of payables	Number of days in period	Payables turnover
Fixed asset turnover	Revenue	Average net fixed assets
Total asset turnover	Revenue	Average total assets

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2.5 Financial Statement Analysis (cont'd)

- **Activity ratios**

- **Inventory Turnover and DOH**

- Inventory turnover lies at the heart of operations for many entities. It indicates the resources tied up in inventory (i.e., the carrying costs) and can, therefore, be used to indicate inventory management effectiveness.
- A higher inventory turnover ratio implies a shorter period that inventory is held, and thus a lower DOH. In general, inventory turnover and DOH should be benchmarked against industry norms.

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2.6 Financial Statement Analysis (cont'd)

- **Activity ratios**

- **Receivables Turnover and DSO**

- The number of DSO represents the elapsed time between a sale and cash collection, reflecting how fast the company collects cash from customers to whom it offers credit.
- Although limiting the numerator to **sales made on credit** in the receivables turnover would be more appropriate, credit sales information is not always available to analysts; therefore, revenue as reported in the income statement is generally used as an approximation.

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2.5 Financial Statement Analysis (cont'd)

- **Activity ratios**

- **Payables Turnover and the Number of Days of Payables**

- The number of days of payables reflects the average number of days the company takes to pay its suppliers, and the payables turnover ratio measures how many times per year the company theoretically pays off all its creditors. For purposes of calculating these ratios, an implicit assumption is that the company makes all its purchases using credit.

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2.5 Financial Statement Analysis (cont'd)

- **Example:** An analyst would like to evaluate Lenovo Group's efficiency in collecting its trade accounts receivable during the fiscal year ended 31 March 2010 (FY2009). The analyst gathers the following information from Lenovo's annual and interim reports:

US\$ in Thousands	
Trade receivables as of 31 March 2009	482,086
Trade receivables as of 31 March 2010	1,021,062
Revenue for year ended 31 March 2010	16,604,815

- Calculate Lenovo's receivables turnover and number of days of sales outstanding (DSO) for the fiscal year ended 31 March 2010.

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2.5 Financial Statement Analysis (cont'd)

- Exercise:** Brown Corporation had average days of sales outstanding of 19 days in the most recent fiscal year. Brown wants to improve its credit policies and collection practices and decrease its collection period in the next fiscal year to match the industry average of 15 days. Credit sales in the most recent fiscal year were \$300 million, and Brown expects credit sales to increase to \$390 million in the next fiscal year. To achieve Brown's goal of decreasing the collection period, the change in the average accounts receivable balance that must occur is closest to:
 - A +\$0.41 million.
 - B -\$0.41 million.
 - C -\$1.22 million.

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2.5 Financial Statement Analysis (cont'd)

- Liquidity ratios**

Liquidity ratios	Numerator	Denominator
Current ratio	Current assets	Current liabilities
Quick ratio	Cash + Short-term marketable investments + Receivables	Current liabilities
Cash ratio	Cash + Short-term marketable investments	Current liabilities
Defensive interval ratio	Cash + Short-term marketable investments + Receivables	Daily cash expenditures
Additional Liquidity Measure		
Cash conversion cycle	DOH + DSO – Number of days of payables	

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2.5 Financial Statement Analysis (cont'd)

- Liquidity ratios**

- Current Ratio**

- This ratio expresses current assets in relation to current liabilities. A higher ratio indicates a higher level of liquidity (i.e., a greater ability to meet short- term obligations).

- Quick Ratio**

- The quick ratio is more conservative than the current ratio because it includes only the more liquid current assets (sometimes referred to as "quick assets") in relation to current liabilities. Like the current ratio, a higher quick ratio indicates greater liquidity.

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2.5 Financial Statement Analysis (cont'd)

- Liquidity ratios**

- Cash Ratio**

- The cash ratio normally represents a reliable measure of an entity's liquidity in a crisis situation. Only highly marketable short- term investments and cash are included. In a general market crisis, the fair value of marketable securities could decrease significantly as a result of market factors, in which case even this ratio might not provide reliable information.

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2.5 Financial Statement Analysis (cont'd)

- Liquidity ratios**

- Defensive Interval Ratio**

This ratio measures how long the company can continue to pay its expenses from its existing liquid assets without receiving any additional cash inflow. A defensive interval ratio of 50 would indicate that the company can continue to pay its operating expenses for 50 days before running out of quick assets, assuming no additional cash inflows. A higher defensive interval ratio indicates greater liquidity. If a company's defensive interval ratio is very low relative to peer companies or to the company's own history, the analyst would want to ascertain whether there is sufficient cash inflow expected to mitigate the low defensive interval ratio.

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2.5 Financial Statement Analysis (cont'd)

- Liquidity ratios**

- Cash Conversion Cycle (Net Operating Cycle)**

This metric indicates the amount of time that elapses from the point when a company invests in working capital until the point at which the company collects cash. In the typical course of events, a merchandising company acquires inventory on credit, incurring accounts payable. The company then sells that inventory on credit, increasing accounts receivable. Afterwards, it pays out cash to settle its accounts payable, and it collects cash in settlement of its accounts receivable. The time between the outlay of cash and the collection of cash is called the "cash conversion cycle."

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2.5 Financial Statement Analysis (cont'd)

- Example:** An analyst is evaluating the liquidity of Dell and finds that Dell's 10-K provides a computation of the number of days of receivables, inventory, and accounts payable, as well as the overall cash conversion cycle, as follows:

Fiscal Year Ended	29 Jan 2010	30 Jan 2009	1 Feb 2008
DSO	38	35	36
DOH	8	7	8
Less: Number of days of payables	82	67	80
Equals: Cash conversion cycle	(36)	(25)	(36)

- What does it mean according to the negative cash cycle?

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2.5 Financial Statement Analysis (cont'd)

- Example(Solutions):**

- The negative cash cycle might suggest an inability to pay suppliers; however, in Dell's case, the balance sheet indicates that the company has more than \$10 billion of cash and short-term investments, which would be more than enough to pay suppliers sooner if Dell chose to do so. Instead, Dell takes advantage of the favorable credit terms granted by its suppliers. The overall effect is a negative cash cycle, a somewhat unusual result. Instead of requiring additional capital to fund working capital as is the case for most companies, Dell has excess cash to invest on which it is earning, rather than paying, interest.

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2.5 Financial Statement Analysis (cont'd)

• Solvency Ratios

- Solvency ratios are primarily of two types. **Debt ratios**, the first type, focus on the balance sheet and measure the amount of debt capital relative to equity capital. **Coverage ratios**, the second type, focus on the income statement and measure the ability of a company to cover its debt payments.

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2.5 Financial Statement Analysis (cont'd)

• Solvency Ratios

Solvency Ratios	Numerator	Denominator
Debt-to-assets ratio	Total debt	Total assets
Debt-to-capital ratio	Total debt	Total debt + Total shareholders' equity
Debt- to-equity ratio	Total debt	Total shareholders' equity
Financial leverage ratio	Average total assets	Average total equity
Interest coverage ratio	EBIT	Interest payments
Fixed charge coverage ratio	EBIT + Lease payments	Interest payments + Lease payments

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2.5 Financial Statement Analysis (cont'd)

• Solvency Ratios

– Debt-to-Assets Ratio

- This ratio measures the percentage of total assets financed with debt. For example, a debt- to- assets ratio of 0.40 or 40 percent indicates that 40 percent of the company's assets are financed with debt. Generally, higher debt means higher financial risk and thus weaker solvency.

– Debt-to-Capital Ratio

- The debt-to-capital ratio measures the percentage of a company's capital (debt plus equity) represented by debt. As with the previous ratio, a higher ratio generally means higher financial risk and thus indicates weaker solvency.

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2.5 Financial Statement Analysis (cont'd)

• Solvency Ratios

– Debt-to-Equity Ratio

- The debt-to-equity ratio measures the amount of debt capital relative to equity capital. Interpretation is similar to the preceding two ratios (i.e., a higher ratio indicates weaker solvency). A ratio of 1.0 would indicate equal amounts of debt and equity, which is equivalent to a debt-to-capital ratio of 50 percent. Alternative definitions of this ratio use the market value of stockholders' equity rather than its book value (or use the market values of both stockholders' equity and debt).

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2.5 Financial Statement Analysis (cont'd)

- Solvency Ratios**

- Financial Leverage Ratio**

- This ratio (often called simply the “leverage ratio”) measures the amount of total assets supported for each one money unit of equity. For example, a value of 3 for this ratio means that each €1 of equity supports €3 of total assets. The higher the financial leverage ratio, the more leveraged the company is in the sense of using debt and other liabilities to finance assets. This ratio is often defined in terms of average total assets and average total equity and plays an important role in the DuPont decomposition of return on equity.

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2.5 Financial Statement Analysis (cont'd)

- Solvency Ratios**

- Interest Coverage ratio**

- This ratio measures the number of times a company’s EBIT could cover its interest payments. A higher interest coverage ratio indicates stronger solvency, offering greater assurance that the company can service its debt (i.e., bank debt, bonds, notes) from operating earnings.

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2.5 Financial Statement Analysis (cont'd)

- Solvency Ratios**

- Fixed Charge Coverage ratio**

- This ratio measures the number of times a company’s earnings (before interest, taxes, and lease payments) can cover the company’s interest and lease payments. Similar to the interest coverage ratio, a higher fixed charge coverage ratio implies stronger solvency, offering greater assurance that the company can service its debt (i.e., bank debt, bonds, notes, and leases) from normal earnings.

- Significant lease obligations will reduce this ratio significantly compared to the interest coverage ratio. Fixed charge coverage is the more meaningful measure for companies that lease a large portion of their assets, such as some airlines.

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2.5 Financial Statement Analysis

- Example:** A credit analyst is evaluating the solvency of Alcatel- Lucent as of the beginning of 2010. The following data are gathered from the company’s 2009 annual report (in € millions):

	2009	2008
Total equity	4,309	5,224
Accrued pension	5,043	4,807
Long-term debt	4,179	3,998
Other long term liabilities*	1,267	1,595
Current liabilities*	9,050	11,687
Total equity + Liabilities (equals Total assets)	23,848	27,311

* For purposes of this example, assume that these items are non-interest bearing, and that long-term debt equals total debt. In practice, an analyst could refer to Alcatel’s footnotes to confirm details, rather than making an assumption.

- Calculate the company’s financial leverage ratio for 2009 and interpret the financial leverage ratio calculated.
- What are the company’s debt-to-assets, debt-to-capital, and debt-to-equity ratios for the two years?
- Is there any discernible trend over the two years?

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2.5 Financial Statement Analysis

- Solutions to 1:**
- Average total assets was $(27,311 + 23,848)/2 = 25,580$ and average total equity was $(5,224 + 4,309)/2 = 4,767$. Thus, financial leverage was $25,580/4,767 = 5.37$.
- For 2009, every €1 in total equity supported €5.37 in total assets, on average.
- Solutions to 2:**
- Debt-to-assets for 2008 = $3,998/27,311 = 14.64\%$
- Debt-to-assets for 2009 = $4,179/23,848 = 17.52\%$
- Debt-to-capital for 2008 = $3,998/(3,998 + 5,224) = 43.35\%$
- Debt-to-capital for 2009 = $4,179/(4,179 + 4,309) = 49.23\%$
- Debt-to-equity for 2008 = $3,998/5,224 = 0.77$
- Debt-to-equity for 2009 = $4,179/4,309 = 0.97$
- Solutions to 3:**
- On all three metrics, the company's leverage has increased. The increase in debt as part of the company's capital structure indicates that the company's solvency has weakened. From a creditor's perspective, lower solvency (higher debt) indicates higher risk of default on obligations.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios**

- **Return-on-sales** profitability ratios express various subtotals on the income statement (e.g., gross profit, operating profit, net profit) as a percentage of revenue. **Return on investment** profitability ratios measure income relative to assets, equity, or total capital employed by the company.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios**

Profitability Ratios	Numerator	Denominator
Gross profit margin	Gross profit	Revenue
Operating profit margin	Operating income	Revenue
Pretax margin	EBT	Revenue
Net profit margin	Net income	Revenue
ROA	Net income	Average total assets
Operating ROA	Operating income or EBIT	Average total assets
ROE	Net income	Average total equity

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios**

- **Gross profit margin**

- Higher gross profit margin indicates some combination of higher product pricing and lower product costs. The ability to charge a higher price is constrained by competition, so gross profits are affected by competition. If a product has a competitive advantage (e.g., superior branding, better quality, or exclusive technology), the company is better able to charge more for it. On the cost side, higher gross profit margin can also indicate that a company has a competitive advantage in product costs.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- Operating Profit Margin

- Operating profit is calculated as gross profit minus operating costs.
 - An operating profit margin increasing faster than the gross profit margin can indicate improvements in controlling operating costs, such as administrative overheads. In contrast, a declining operating profit margin could be an indicator of deteriorating control over operating costs.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- Pretax Margin

- Pretax income is calculated as operating profit minus interest, and the pretax margin is the ratio of pretax income to revenue.
 - The pretax margin reflects the effects on profitability of leverage and other (non-operating) income and expenses. If a company's pretax margin is increasing primarily as a result of increasing amounts of non-operating income, the analyst should evaluate whether this increase reflects a deliberate change in a company's business focus and, therefore, the likelihood that the increase will continue.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- Net Profit Margin

- Net profit, or net income, is calculated as revenue minus all expenses. Net income includes both recurring and non-recurring components. Generally, the net income used in calculating the net profit margin is adjusted for non-recurring items to offer a better view of a company's potential future profitability.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- ROA (Operating ROA)

- ROA measures the return earned by a company on its assets. The higher the ratio, the more income is generated by a given level of assets. Most databases compute this ratio as:
 - $\text{Net income} / \text{Average total assets}$

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- ROA (Operating ROA)

- An issue with this computation is that net income is the return to equity holders, whereas assets are financed by both equity holders and creditors. Interest expense has already been subtracted in the numerator. Some analysts, therefore, prefer to add back interest expense in the numerator. With this adjustment, the ratio would be computed as:

- Operating income or EBIT/ Average total assets

- Whichever form of ROA is chosen, the analyst must use it consistently in comparisons to other companies or time periods.

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2.5 Financial Statement Analysis (cont'd)

- Profitability Ratios

- ROE

- ROE measures the return earned by a company on its equity capital, including minority equity, preferred equity, and common equity. As noted, return is measured as net income.
 - A variation of ROE is return on common equity, which measures the return earned by a company only on its common equity.

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2.5 Financial Statement Analysis (cont'd)

- DuPont Analysis: The Decomposition of ROE

- To understand what drives a company's ROE, a useful technique is to decompose ROE into its component parts. Decomposing ROE involves expressing the basic ratio as the product of component ratios.
 - This decomposition will show why a company's overall profitability, measured by ROE, is a function of its efficiency, operating profitability, taxes, and use of financial leverage. The information gained can be used to determine which areas they should focus on to improve ROE.

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2.5 Financial Statement Analysis (cont'd)

- The DuPont Identity

- $\text{ROE} = \text{ROA} \times \text{Leverage}$

$$-\frac{\text{Net income}}{\text{Average total equity}} = \frac{\text{Net income}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Average total equity}}$$

- $\text{ROE} = \text{Net profit margin} \times \text{Total asset turnover} \times \text{Leverage}$

$$-\frac{\text{Net income}}{\text{Average total equity}} = \frac{\text{Net income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Average total equity}}$$

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2.5 Financial Statement Analysis (cont'd)

• The DuPont Identity

– ROE = Tax burden × Interest burden × EBIT margin × Total asset turnover × Leverage

$$-\frac{\text{Net income}}{\text{Average total equity}} = \frac{\text{Net income}}{\text{EBT}} \times \frac{\text{EBT}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Revenue}} \\ \times \frac{\text{Revenue}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Average total equity}}$$

– Tax burden measures the effect of taxes on ROE.
Interest burden captures the effect of interest on ROE.

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2.5 Financial Statement Analysis (cont'd)

- **Example:** An analyst compiles the following data for a company:

	FY13	FY14	FY15
ROE	19.8%	20.0%	22.0%
Return on total assets	8.1%	8.0%	7.9%
Total asset turnover	2.0	2.0	2.1

- Based only on the information above, the most appropriate conclusion is that, over the period FY13 to FY15, the company's:
 - A net profit margin and financial leverage have decreased.
 - B net profit margin and financial leverage have increased.
 - C net profit margin has decreased but its financial leverage has increased.

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2.5 Financial Statement Analysis (cont'd)

– **Example:** An analyst examining Royal Dutch Shell PLC wishes to understand the factors driving the trend in ROE over a four-year period. The analyst obtains and calculates the following data from Shell's annual reports:

	2009	2008	2007	2006
ROE	9.53%	20.78%	26.50%	24.72%
Tax burden	60.50%	52.10%	63.12%	58.96%
Interest burden	97.49%	97.73%	97.86%	97.49%
EBIT margin ^a	7.56%	11.04%	13.98%	13.98%
Asset turnover	0.99	1.71	1.47	1.44
Leverage	2.15	2.17	2.10	2.14

^a Shell's income statement does not present a separate subtotal for operating income. EBIT was calculated as Earnings before taxes plus interest.

– What might the analyst conclude?

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2.5 Financial Statement Analysis (cont'd)

• Equity analysis:

– Analysts use a variety of methods to value a company's equity, including valuation ratios, discounted cash flow approaches, and residual income approaches (ROE compared with the cost of capital), among others.

• Valuation Ratios

Valuation Ratios	Numerator	Denominator
P/E	Price per share	Earnings per share
P/CF	Price per share	Cash flow per share
P/S	Price per share	Sales per share
P/BV	Price per share	Book value per share

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2.5 Financial Statement Analysis (cont'd)

- **Valuation Ratios**

- **P/E ratio**

- The **P/E ratio** expresses the relationship between the price per share and the amount of earnings attributable to a single share. But earnings quality may be an issue.

1. P/E ratios are calculated using net income, the ratios can be sensitive to non-recurring earnings or one-time earnings events.
2. In addition, net income is generally considered to be more susceptible to manipulation than are cash flows.

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2.5 Financial Statement Analysis (cont'd)

- **Valuation Ratios**

- **Price to cash flow**

- Cash flow per share = $\frac{\text{Cash flow from operations}}{\text{Weighted average number of shares outstanding}}$

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2.5 Financial Statement Analysis (cont'd)

- **Valuation Ratios**

- **Price to sales** is calculated in a similar manner and is sometimes used as a comparative price metric when a company does not have positive net income.
 - **price to book value**, or P/B, which is the ratio of price to book value per share.

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2.5 Financial Statement Analysis (cont'd)

- **Exercise:**

- What does the P/E ratio measure?
 - A The “multiple” that the stock market places on a company’s EPS.
 - B The relationship between dividends and market prices.
 - C The earnings for one common share of stock.

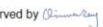
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2.5 Financial Statement Analysis (cont'd)

• Related Measures

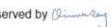
Per-Share Measures	Numerator	Denominator
Basic EPS		
Diluted EPS		
Cash flow per share		
Dividends per share		
Dividend- Related Measures		
Dividend payout ratio	Common share dividends	Net income attributable to common shares
Retention rate (b)	Net income attributable to common shares – Common share dividends	Net income attributable to common shares
Sustainable growth rate	$b \times ROE$	

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Reference:

1. CFA® Program Curriculum 2019 • Level I • Volume 3
2. Corporate finance. Fourth Edition. Jonathan Berk. Peter DeMarzo

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