CFA一级培训项目

Financial Reporting and Analysis

Topic Weightings in CFA Level I

Session NO.	Content	Weightings
Study Session 1	Ethics & Professional Standards	15
Study Session 2-3	Quantitative Analysis	12
Study Session 4-6	Economics	10
Study Session 7-10	Financial Reporting and Analysis	20
Study Session 11	Corporate Finance	7
Study Session 12	Portfolio Management	7
Study Session 13-14	Equity Investment	10
Study Session 15-16	Fixed Income	10
Study Session 17	Derivatives	5
Study Session 18	Alternative Investments	4

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

The Framework of FRS

Generally Accepted Accounting Principle

Two systems worldwide

- The Financial Accounting Standards Board (FASB)
  - The Statement of Financial Accounting Standards **(SFAS)** → **U.S. GAAP**
- The International Accounting Standards Board (IASB)
  - The International Accounting Standards **(IAS)**
  - The International Financial Reporting Standards **(IFRS)**

→ **IFRS**

Recognition → Measurement → Disclosure

↓

Financial analysis

Framework

1. **The role of financial reporting and financial statement analysis**
2. **The resources used for financial statement analysis**
   - Key financial statements
   - Other relevant information
3. **Auditing**
4. **Financial statement analysis framework**

Financial reporting & analysis

- **The role of financial reporting**
  - The **International Accounting Standards Board (IASB)** definition:
    - ✓ Financial reporting refers to the way companies show their financial performance to investors, creditors, and other interested parties by preparing and presenting financial statements.
    - ✓ The objective of financial statements is to provide information about the
      - **Financial position**
      - **Financial performance**
      - **Changes in financial position of an entity** that is useful to a wide range of users in **making economic decisions**.
- The role of financial reporting analysis **is to use the information in a company's** financial statements**, along with** other relevant information**, to make economic decisions.**

Financial statements

Financial position	Financial performance	Change in financial position
The balance sheet	The income statement	The cash flow statement
Assets = liabilities + owner's equity	**•Revenue •Expenses ⇩ Net income**	**•Operating cash flows •Investing cash flows •Financing cash flows ⇩ Net cash inflow or outflow for the financial year**

The statement of changes in owner's equity

Balance sheet

- **Key financial statements:**
  - **Balance sheet**
    - ✓ The balance sheet (also known as the statement of financial position or statement of financial condition) reports the firm's financial position at ***a point in time***.
    - ✓ The balance sheet consists of three elements:
      - Assets are the ***resources*** controlled by the firm.
      - Liabilities are amounts owed to lenders and other creditors.
      - Owners' equity is the residual interest in the net assets of an entity that remains after deducting its liabilities.
    - ✓ Transactions are measured so that the fundamental accounting equation holds:
      - assets = liabilities + owners' equity

Income statement

- **Income statement**
  - The income statement (also known as the statement of operations or the profit and loss statement) reports on the financial performance of the firm **over a period of time**.
  - The elements of the income statement include:
    - ✓ Revenues are inflows from delivering or producing goods, rendering services, or other activities that constitute the entity's ongoing major or central operations.
    - ✓ Expenses are outflows from delivering or producing goods or services that constitute the entity's ongoing major or central operations.
    - ✓ Other income includes gains that may or may not arise in the ordinary course of business.

Cash flow statement

- **Cash flow statement**
  - The statement of cash flows reports the company's cash receipts and payments.
  - These cash flows are classified as follows:
    - ✓ **Operating cash flows** include the cash effects of transactions that involve the normal business of the firm.
    - ✓ **Investing cash flows** are those resulting from the acquisition or sale of property, plant, and equipment; of a subsidiary or segment; of securities; and of investments in other firms.
    - ✓ **Financing cash flows** are those resulting from issuance or retirement of the firm's debt and equity securities and include dividends paid to stockholders.

Financial statements

- **Measurement of financial elements:**
  - **historical cost**
    - ✓ the amount originally paid for the asset,
  - **amortized cost**
    - ✓ historical cost adjusted for depreciation, amortization, depletion, and impairment
  - **current cost**
    - ✓ the amount the firm would have to pay today for the same asse
  - **realizable value**
    - ✓ the amount for which the firm could sell the asset
  - **present value**
    - ✓ the discounted value of the asset's expected future cash flows
  - **fair value**
    - ✓ the amount at which two parties in an arm's-length transaction would exchange the asset

Financial statements

- **The statement of comprehensive income**
  - The statement of comprehensive income reports all changes in equity ***expect for*** shareholder transactions (e.g., issuing stock, repurchasing stock, and paying dividends).
    - ✓ Under IFRS
      - the income statement can be combined with "other comprehensive income" and presented as a single statement of comprehensive income.
      - Alternatively, the income statement and the statement of comprehensive income can be presented separately.
    - ✓ Presentation is similar under U.S. GAAP except that firms can choose to report comprehensive income in the statement of shareholders' equity.
- **The statement of changes in equity**
  - The statement of changes in equity reports the amounts and sources of changes in equity investors' investment in the firm ***over a period of time***.

Other relevant information

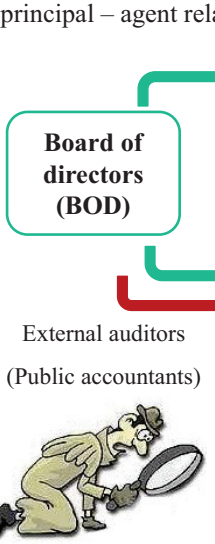
★ **Financial statement notes (Footnotes)**	•Providing information about accounting methods, assumptions, and estimates •Providing additional information about business acquisitions or disposal, legal actions, employee benefit plans, significant customers, sales to related parties, and segments of the firm •Are audited
Supplementary schedules	•Operating income or sales by region or business segment •Reserves for an oil and gas company •Information about hedging activities and financial instruments
★ **Management's Discussion and Analysis (MD&A)**	Providing an assessment of the financial performance and condition of a company from the perspective of its management •Results from operations, with a discussion of trends in sales and expense •Capital resource and liquidity, with a discussion of trends in cash flow •A general business overview based on known trends •Material events and uncertainties that may affect the future

Other relevant information

Quarterly or semiannual reports	•The most updated information on the major financial statements and footnotes
Securities and Exchange Commission (SEC) filings	•**Form 8-K** •Acquisitions or disposals of major assets •Changes in its management •Changes in corporate governance •**Form 10-K** •Annual financial statements •**Form 10-Q** •Quarterly financial statements
Proxy statements	•Issued to shareholders when there are matters that require a shareholder vote •Providing information about the board members, managements, compensation and the issuance of stock options.
Corporate reports and press releases	•Public relations
Other necessary information	•Information on economic conditions, industry and competitors.

Auditing

➢ A principal – agent relationship



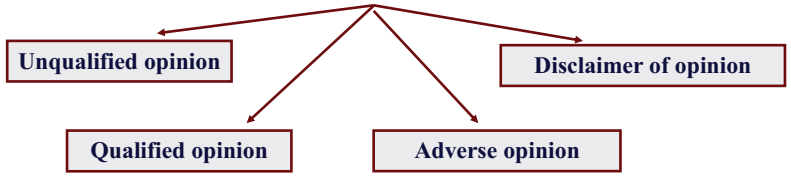
- ✓ Examines the company's accounting and internal control systems,
- ✓ Generally tries to determine that there are no material errors in the financial statements
- ✓ Under U.S. Generally Accepted Accounting Principles(GAAP), the auditor must state its opinion on the company's internal control

Auditing

- **Audit**
  - **Definition:** Audit is independent review of an entity's financial statements by an independent accounting firm.
  - **The audit process** provides a basis for the independent auditor to express an audit opinion on the fairness of the financial statements that were audited.
  - **Objective:** auditor provides reasonable assurance that the financial statements are fairly presented.

Auditing

The standard auditor's opinion	
1	Whereas the financial statements are prepared by management and are its responsibility , the auditor has performed an **independent review**.
2	**Generally accepted auditing standards were followed, thus providing** reasonable assurance **the financial statements contain no material errors.**
3	The auditor is **satisfied** that the statements were prepared in accordance with accepted accounting principles and that the principles chosen and estimates made are reasonable.
Results	



Auditing

- **The standard auditor's opinion**
  - Unqualified (clean) opinion: free from material errors, fraud, or illegal acts
  - Qualified opinion: if statements make any exceptions to the accounting principles, can issue qualified opinion and explain the exceptions
  - Adverse opinion: if not presented fairly or not materially conforming with accounting standards.
  - Disclaimer of opinion: If the auditor is unable to express an opinion (e.g., in the case of a scope limitation), a *disclaimer of opinion* is issued.
- **Internal control system**
  - the processes by which the company ensures that it presents accurate financial statements.
  - Internal controls are the responsibility of management.
  - Under U.S. Generally Accepted Accounting Principles (GAAP), the auditor must express an opinion on the firm's internal controls.
    - ✓ The auditor can provide this opinion separately or as the fourth element of the standard opinion.

Financial statement analysis framework

Phase	Sources of info	Output
1. Articulate the purpose and context of the analysis	•Nature •Needs & concern •Guidelines	•Statement of purposes and objectives •A list of specific questions •Timetable & budgeted resources
2.Collect data	•Financial data •Discussion •Visits	•Organized F/S •Financial data table •Complete questionnaires
3.Process data	•Data from previous phase	•Adjusted F/S •Common – size statements •Ratios & Forecasts
4.Analyze/interpret the processed data	•Input data •Processed data	•Analytical results
5.Conclusions & recommendations	•Analytical results	•Analytical reports •recommendation
6.Follow up	•Periodically repeating	•Updated reports & recommendations

Basic concepts: Example 1

- **Example 1**

  A company's current financial position would best be evaluated using the

  A. balance sheet.

  B. income statement.

  C. cash flow statement

- **Answer:**

  A is correct.

  - ✓ The balance sheet portrays the current financial position.
  - ✓ The income statement and cash flow statement present different aspects of performance.

Basic concepts: Example 2

- **Example 2**

  A company's profitability for a period would best be evaluated using the

  A. balance sheet.

  B. income statement.

  C. cash flow statement.

- **Answer:**

  B is correct.

  - ✓ Profitability is the performance aspect measured by the income statement.
  - ✓ The balance sheet portrays the current financial position.
  - ✓ The cash flow statement presents a different aspect of performance.

Basic concepts: Example 3

- **Example 3**

  Accounting methods, estimates, and assumptions used in preparing financial statements are found

  A. in footnotes.

  B. management s discussion and analysis

  C. in the proxy statement.

- **Answer:**

  A is correct.

  ✓ The footnotes disclose choices in accounting methods, estimates, and assumptions.

Basic concepts: Example 4

- **Example 4**

  Information about material events and uncertainties would best be found in

  A. footnotes.

  B. the proxy statement.

  C. management s discussion and analysis

- **Answer:**

  C is correct.

  ✓ This is a component of management's discussion and analysis.

Financial statement analysis framework: Example 5

- **Example 5**

  Ratios are an input into which step in the financial analysis framework?

  A. Process data.

  B. Collect input data.

  C. Analyze/interpret the processed data.

- **Answer:**

  C is correct.

  ✓ Ratios are an output of the process data step but are an input into the analyze/interpret data step.

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Financial Statement elements**
2. **Flow of information in an accounting system**
3. **Double Entry Theory**
4. **Accounting equation**
   - Financial statement elements and relationships
   - Accrual accounting
5. **Cash accounting & cash flow statements**

Classification of business activities

- **Operating activities**
  - Activities that are part of the day-to-day business functioning of an entity.
  - Examples: the sale of meals by a restaurant, the sale of services of a consulting firm, etc
- **Investing activities**
  - Activities associated with acquisition and disposal of long-term assets.
  - Examples: the purchase of equipment or sale of surplus equipment by a restaurant, and the purchase or sale of an office building, a retail store, or a factory.
- **Financing activities**
  - Activities related to obtaining or repaying capital.
  - Two primary sources for funds are owners(shareholder) or creditors.
  - Examples: issuing common shares, and issuing bonds

Financial Statement elements

- **Financial statement elements** are the major classifications of assets, liabilities, owners' equity, revenues, and expenses.
- **Accounts** are the specific records within each element where various transactions are entered.
  - On the financial statements, accounts are typically presented in groups such as "inventory" or "accounts payable."
- A company's **chart of accounts** is ***a detailed list of the accounts*** that make up the five financial statement elements and the line items presented in the financial statements.
- **Contra accounts** are used for entries that offset some part of the value of another account.

Financial Statement elements

- **Classifying Accounts Into the Financial Statement Elements**
  - Assets
  - Liability
  - Owners' equity
  - Revenue
  - Expenses

Financial Statement elements - Assets

- **Assets** are the firm's economic resources. Examples of assets include:
  - **Cash and cash equivalents.** Liquid securities with maturities of 90 days or less are considered cash equivalents.
  - **Accounts receivable.** Accounts receivable often have an "allowance for bad debt expense" or "allowance for doubtful accounts" as a contra account.
  - **Inventory.**
  - **Financial assets** such as marketable securities.
  - **Prepaid expenses.** Items that will be expenses on future income statements.
  - **Property, plant, and equipment.** Includes a contra-asset account for accumulated depreciation.
  - **Investment in affiliates** accounted for using the equity method.
  - **Deferred tax assets.**
  - **Intangible assets.** Economic resources of the firm that do not have a physical form, such as patents, trademarks, licenses, and goodwill. Except for goodwill, these values may be reduced by "accumulated amortization."

Financial Statement elements - Liabilities

- **Liabilities** are creditor claims on the company's resources. **Examples of liabilities include:**
  - **Accounts payable** and trade payables.
  - **Financial liabilities** such as short-term notes payable.
  - **Unearned revenue.** Items that will show up on future income statements as revenues.
  - **Income taxes payable.** The taxes accrued during the past year but not yet paid.
  - **Long-term debt** such as bonds payable.
  - **Deferred tax liabilities**.

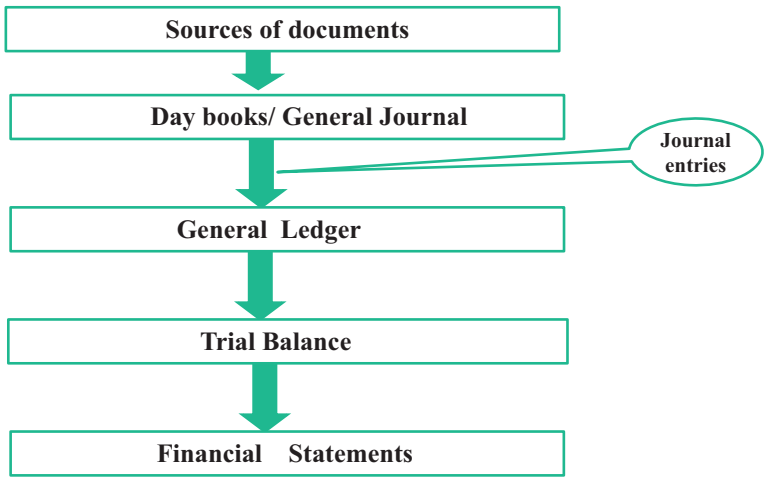
Financial Statement elements - Owner's equity

- **Owners' equity** is the owners' residual claim on a firm's resources, which is the amount by which assets exceed liabilities. Owners' equity includes:
  - **Capital.** Par value of common stock.
  - **Additional paid-in capital.** Proceeds from common stock sales in excess of par value. (Share repurchases that the company has made are represented in the contra account treasury stock.)
  - **Retained earnings.** Cumulative net income that has not been distributed as dividends.
  - **Other comprehensive income.** Changes resulting from foreign currency translation, minimum pension liability adjustments, unrealized gains and losses from cash flow hedging derivatives, or unrealized gains and losses from available - for - sale.

Financial Statement elements - Expenses

- **Expenses** are outflows of economic resources and include:
  - **Cost of goods sold.**
  - Selling, general, and administrative expenses. These include such expenses as advertising, management salaries, rent, and utilities.
  - **Depreciation and amortization.** To reflect the "using up" of tangible and intangible assets.
  - **Tax expense.**
  - **Interest expense.**
  - **Losses.** Decreases in assets from transactions incidental to the firm's day-to-day activities.

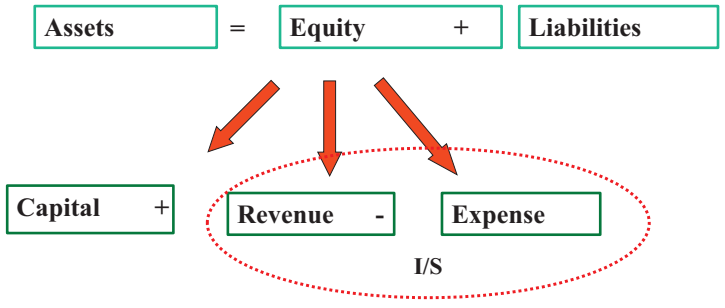
Flow of information in an accounting system



Flow of information in an accounting system

- **Information flows through an accounting system in four steps:**
  - **Journal entries** record every transaction, showing which accounts are changed and by what amounts. A listing of all the journal entries in order of their dates is called the **general journal**.(日记账)
  - **The general ledger** sorts the entries in the general journal ***by account.*** (分类账)
  - At the end of the accounting period, an **initial trial balance** is prepared that ***shows the balances*** in each account. If any adjusting entries are needed, they will be recorded and reflected in **an adjusted trial balance.**
  - The account balances from the adjusted trial balance are presented in the financial statements.

Accounting equation



$$Asset + Expense = Capital + Revenue + Liablility$$

Dr ↑	Dr ↓
Cr ↓	Cr ↑

Accounting equation

- **Accounting equation**
  - The **basic accounting equation** is the relationship among the three balance sheet elements:
    - ✓ assets = liabilities + owners' equity
  - **Expanded accounting equation**
    - ✓ Owners' equity consists of capital contributed by the firm's owners and the cumulative earnings the firm has retained.
      - Owners' Equity = Contributed Capital + **Retained earnings**

Assets = Liabilities
+ Contributed capital
+ Ending retained earnings

Accounting equation

- **Accounting equation**
  - **Ending retained earnings** for an accounting period are the result of adding that period's retained earnings (revenues minus expenses minus dividends) to beginning retained earnings.
    - ✓ **Ending retained earnings** = Beginning retained earnings
      + Net income
      – Dividend
      - Net income = Revenue – Expense

Assets = Liabilities
+Contributed capital
+Beginning retained earnings
+ Revenue
- Expenses
- Dividend

Accounting equation: Example 1

- **An analyst has compiled the following information regarding Rubsam, Inc.**

Liabilities at year-end €1,000
Contributed capital at year-end €500
Beginning retained earnings €600
Revenue during the year €5,000
Expenses during the year €4,300

There have been no distributions to owners. The analyst's most likely estimate of total assets at year-end should be closest to

A. €2,100.
B. €2,300.
C. €2,800.

Accounting equation: Example 1

- **Answer:**

  C is correct.

  Assets = Liabilities + Contributed capital + Beginning retained earnings - Distributions to owners + Revenues - Expenses

Liabilities	$1,000
+Contributed capital	500
+Beginning retained earnings	600
-Distributions to owners	(0)
+revenues	5,000
-expenses	(4,300)
=Assets	$2,800

Accounting equation: Example 2

- **If a company reported fictitious revenue, it could try to cover up its fraud by**

  A. decreasing assets.

  B. increasing liabilities.

  C. creating a fictitious asset.

- **Answer:**

  C is correct.

  - In order to balance the accounting equation, the company would either need to increase assets or decrease liabilities. Creating a fictitious asset would be one way of attempting to cover up the fraud.

Double Entry Theory

- **Double-entry accounting**
  - Keeping the accounting equation in balance requires
  - in which a transaction has to be recorded in at least two accounts.
  - An increase in an asset account must be balanced by a decrease in another asset account or by an increase in a liability or owners' equity account.

Double Entry Theory: Example 1

- **Example 1: Day book**

Date	Description	$
Jan .1	Capital	10,000
Jan .2	Purchase 500 units goods to sell @ $2 each	1,000
Jan .3	Sales 2 units goods on cash @$5	10
Jan .4	Sales 3 units goods on credit @ $5	15

Double Entry Theory: Example 1-General ledger

Capital

Dr	Cr
	10,000

Cash

Dr	Cr
10,000	1,000
10	
9,010	

Purchase

Dr	Cr
1,000	

Revenue

Dr	Cr
	10
	15
	25

Accounts receivable

Dr	Cr
15	

Double Entry Theory: Example 1-Trial balance

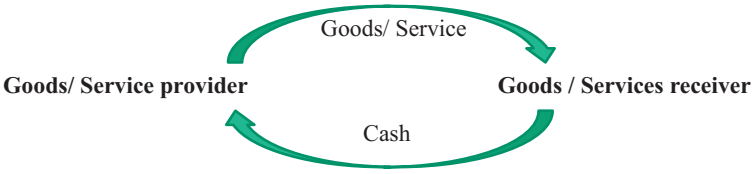
	Dr $	Cr $
Capital		**10,000**
Cash	**9,010**	
Purchase	**1,000**	
Revenue		**25**
Accounts receivable	**15**	
	10,025	**10,025**

Double Entry Theory: Example 1-Financial statements

Income statement		
	$	$
Revenue		**25**
Cost of goods sold (COGS)		
Purchase	**1,000**	
Closing inventories (495 @$2)	**(990)**	
		(10)
Net income		15

Balance sheet	
	$
Cash	**9,010**
Inventories	**990**
Accounts receivable	**15**
Total assets	10,015
Capital	**10,000**
Retained earnings	**15**
Total equity and liabilities	10,015

Accrual accounting



Cash received in advance	⇔	Cash paid in advance
Unearned revenue		Prepaid expense

Cash received in arrears	⇔	Cash paid in arrears
Accrued revenue		Accrued expense

Accrual accounting

		Assets	Liabilities	Revenue	Expense	Equity
Unearned revenue	•No revenue recognized •A liability	↑	↑			
Accrued revenue	•Revenue recognition •An asset	↑		↑		↑
Prepaid expenses	•No expense recognized •An asset	↓ ↑				
Accrued expenses	•Expenses recognition •A liability		↑		↑	↓

Accrual accounting: Other Adjustment

- **Valuation adjustments:** Accounting entries that update these assets' values are called valuation adjustments.
  - Most assets are recorded on the financial statements at their historical costs.
  - However, accounting standards require balance sheet values of certain assets to ***reflect their current market values***.
  - To keep the accounting equation in balance, changes in asset values also change ***owners' equity***, through gains or losses ***recorded on*** the income statement or in "other comprehensive income."

Accrual accounting: Example

- **On 30 April 2006, Pinto Products received a cash payment of $30,000 as a deposit on production of a custom machine to be delivered in August 2006 This transaction would most likely result in which of the following on 30 April 2006?**

A. No effect on liabilities.

B. A decrease in assets of $30,000.

C. An increase in liabilities of $30,000

Answer:

C is correct.

- The receipt of cash in advance of delivering goods or services results in unearned revenue, which is a liability. The company has an obligation to deliver $30,000 in goods in the future. This balances the increase in cash (an asset) of $30,000.

Relationships among the I/S, B/S, CF/S, and statement of owners' equity

Elements	Definition		Relationship
Assets	•Current assets •Non – current assets (Long-lived assets)	The Balance sheet	Assets = liabilities + owner's equity ↓ Owner's equity = Contributed capital +Beginning retained earning +Net income (current year) - Dividend (current year) +Other comprehensive income
Liabilities	•Current liabilities •Non – current liabilities (Long-term liabilities)		
Owner's equity	•Capital •Additional paid-in capital •Retained earnings •Other comprehensive income		
Revenue	•Sales •Investment income •Gains	The income statement	Revenue – expenses = net income (current year)
Expenses	•Cost of good sold •Other expense •losses		

Cash accounting and Cash flow statement

Cash flow from operations CFO	**the firm's primary activities of production and trade** •Cash revenue •Cash expense
Cash flow from investments CFI	**transaction to acquire or dispose of long-term assets** •Cash paid for purchase of plant and equipment •Cash from sale of plant and equipment
Cash flow from financing CFF	**transactions through which the firm raises or repays capital** •Cash received from share issue •Cash received from bond issue •Cash dividend paid

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Standard – setting bodies & Regulatory authorities**
2. **IASB & FASB convergence**
3. **Awareness of an analyst**

Objective of financial statements and the importance of financial reporting standards

- **Objective of financial reporting**
  - According to the IASB *Conceptual Framework for Financial Reporting 2010,* the objective of financial reporting is to provide information about the firm to current and potential investors and creditors that is useful for ***making their decisions about*** investing in or lending to the firm.
- **Conceptual framework**
  - The conceptual framework ***is used in the development*** of accounting standards. Given the variety and complexity of possible transactions and the estimates and assumptions a firm must make when presenting its performance, financial statements could potentially take any form if reporting standards did not exist. Thus, financial reporting standards are needed to provide ***consistency*** by narrowing the range of acceptable responses.
- Reporting standards ensure that transactions ***are reported by firms*** similarly. However, standards must remain flexible and allow discretion to management to properly describe the economics of the firm.
- Financial reporting is ***not designed solely*** for valuation purposes; however, it does provide important ***inputs for valuation purposes.***

Financial reporting standards: Standard-setting bodies

- **Standard-setting bodies**
  - Professional organizations of accountants and auditors that establish financial reporting standards
    - ✓ **Financial Accounting Standards Board (FASB)**
      - Sets U.S. GAAP (SFAS)
    - ✓ **International Accounting Standards Board (IASB)**
      - Sets International GAAP (IAS & IFRS)
  - **Desirable attributes of standard-setters:**
    - ✓ Observe high professional standards.
    - ✓ Have **adequate authority,** resources, and competencies to accomplish its mission.
    - ✓ Have clear and **consistent standard-setting** processes.
    - ✓ Guided by **a well-articulated** framework.
    - ✓ Operate **independently** while still seeking input from stakeholders.
    - ✓ Should not be **compromised by special** interests.
    - ✓ Decisions **are made in** the public interest.

Financial reporting standards: Regularly authorities

- **Regularly authorities**
  - Government agencies that have legal authority to enforce compliance with financial reporting standards.
    - ✓ The **Securities and Exchange Commission (SEC)** in the U.S.
    - ✓ The **Financial Service Authority (FSA)** in the U.K.
  - Most national authorities belong to the **International Organization of Securities Commissions (IOSCO).** The three objectives of financial market regulation according to IOSCO1 are to:
    - ✓ (1) protect investors;
    - ✓ (2) ensure the fairness, efficiency, and transparency of markets; and
    - ✓ (3) reduce systemic risk. Because of the increasing globalization of securities markets, IOSCO has a goal of uniform financial regulations across countries.

SEC filings required

- **SEC filing requirements for publicly traded companies in the U.S.**
  - Form S-1
    - ✓ Registration statement filed prior to the sale of new securities to the public
  - Form 10-K
    - ✓ Annual financial statements
  - Form 10-Q
    - ✓ Quarterly financial statements
  - Form DEF-14A
    - ✓ Proxy statements
  - Form 8-K
    - ✓ Material events relating to
      - Significant assets acquisition and disposal
      - Changes in management or corporate governance
  - Form 144
    - ✓ Issue securities to certain qualified buyers without registering with SEC but notifying
  - Forms 3,4,5
    - ✓ The beneficial ownership of securities by a company's officers and directors

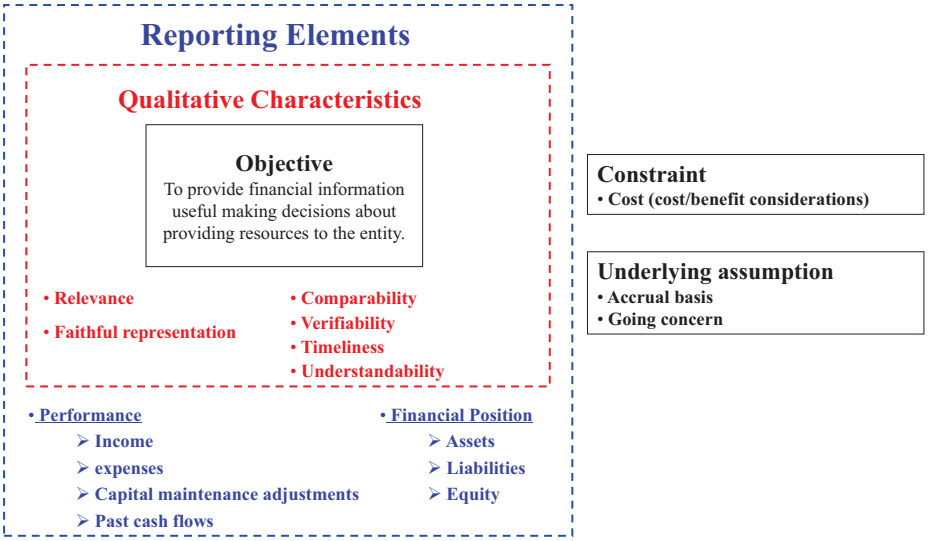
Barriers to developing one universally accept set of financial reporting standard

- **Barriers to developing one universally accept set of financial reporting standard**
  - One barrier to developing one universally accepted set of accounting standards (referred to as *convergence)* is simply that different standard-setting bodies and the regulatory authorities of different countries can and do disagree on the best treatment of a particular item or issue.
  - Other barriers result from the political pressures that regulatory bodies face from business groups and others who will be affected by changes in reporting standards.

IASB conceptual framework

- **International Accounting Standards Board's conceptual framework**
  - The ideas on which the IASB bases its standards are expressed in the ***"Conceptual Framework for Financial Reporting"*** that the organization adopted in 2010. The IASB framework details the ***qualitative characteristics of financial statements*** and specifies the required reporting elements. The framework also notes certain constraints and assumptions that are involved in financial statement preparation.
  - **Objectives**
    - ✓ The objective to provide financial information that is useful in making decisions about providing resources to an entity. The resource providers include investors, lenders, and other creditors. Users of financial statements need information about the firm's performance, financial position, and cash flow.

IASB conceptual framework



IASB conceptual framework

- **Qualitative Characteristics:** two fundamental characteristics
  - **Relevance.** Information is relevant if it would potentially affect or make a difference in user's decisions. Relevant information helps users of financial information to evaluate past, present, and future events, or to confirm or correct their past evaluations in a decision-making context. If omission or misstatement of information could influence decisions, it is considered relevant. Materiality is an aspect of relevance.
  - **Faithful representation.** Information that **is faithfully** representative is complete (all information necessary is depicted), neutral (without bias), and free from error (no errors of commission or omission in the description of the economic phenomenon). Faithful representation maximizes the qualities of complete, neutral, and free from error to the extent possible.

IASB conceptual framework

- **International Accounting Standards Board's conceptual framework**
  - **Four characteristics that enhance relevance and faithful representation:**
    - ✓ ***Comparability.*** Financial statement presentation should be consistent among firms and across time periods.
    - ✓ ***Verifiability.*** Independent observers, using the same methods, obtain similar results.
    - ✓ ***Timeliness.*** Information is available to decision makers before the information is stale.
    - ✓ ***Understandability.*** Users with a basic knowledge of business and accounting and who make a reasonable effort to study the financial statements should be able to readily understand the information the statements present. Useful information should not be omitted just because it is complicated.

IASB reporting elements

- **Required Reporting Elements**
  - **The Conceptual Framework describes each of these elements:**
    - ✓ **Assets.** Resources controlled as a result of past transactions that are expected to provide future economic benefits.
    - ✓ **Liabilities.** Obligations as a result of past events that are expected to require an outflow of economic resources.
    - ✓ **Equity.** The owners' residual interest in the assets after deducting the liabilities.
    - ✓ **Income.** An increase in economic benefits, either increasing assets or decreasing liabilities in a way that increases owners' equity (but not including contributions by owners). Income includes revenues and gains.
    - ✓ **Expenses.** Decreases in economic benefits, either decreasing assets or increasing liabilities in a way that decreases owners' equity (but not including distributions to owners). Losses are included in expenses.

IASB general requirements for financial statements

Required Financial Statements
- Statement of financial position (B/S)
- Statement of comprehensive income (Single statement or income statement + Statement of comprehensive income)
- Statement of changes in equity
- Statement of cash flows
- Notes, summarizing accounting policies and disclosing other items
- In certain cases, Statement of financial position from earliest comparative period

General Features
- Fair presentation
- Going concern
- Accrual basis
- Materiality and aggregation
- No offsetting
- Frequency of reporting
- Comparative information
- Consistency of presentation

Structure and Content
- Classified balance sheet
- Minimum specified information on face
- Minimum specified note disclosure
- Comparative information

IAS No.1 : four major F/S

- **IAS No. 1**
  - **Four major F/S**
    - ✓ Balance sheet
    - ✓ Statement of comprehensive income*
    - ✓ Cash flow statement
    - ✓ Statement of changes in owner's equity

IAS No.1 : fundamental principles for preparing F/S

- **General features for preparing financial statements**
  - **Going concern basis**
    - ✓ Going concern basis meaning the financial statements are based on the assumption that the firm will continue to exist unless its management intends to (or must) liquidate it.
  - **Accrual basis of accounting**
    - ✓ Accrual basis of accounting is used to prepare the financial statements other than the statement of cash flows.

IAS No.1 : fundamental principles for preparing F/S

- **General features for preparing financial statements**
  - **Fair presentation**
    - ✓ Fair presentation defined as faithfully representing the effects of the entity's transactions and events according to the standards for recognizing assets, liabilities, revenues, and expenses.
  - **Consistency**
    - ✓ Consistency between periods in how items are presented and classified, with prior-period amounts disclosed for comparison.
  - **Materiality**
    - ✓ Materiality meaning the financial statements should be free of misstatements or omissions that could influence the decisions of users of financial statements.
  - **Comparative information**
    - ✓ Comparative information for prior periods should be included unless a specific standard states otherwise.

IAS No.1 : fundamental principles for preparing F/S

- **General features for preparing financial statements**
  - **Aggregation**
    - ✓ Aggregation of similar items and separation of dissimilar items.
  - **No offsetting**
    - ✓ No offsetting of assets against liabilities or income against expenses unless a specific standard permits or requires it.
  - **Reporting frequency**
    - ✓ Reporting frequency must be at least annually.

IAS No.1 : structure and contents of F/S

- **The structure and content of financial statements**
  - **Classified balance sheet**
    - ✓Most entities should present a **classified balance sheet** showing current and non-current assets and liabilities.
  - **Minimum information**
    - ✓Minimum information is required on the face of each financial statement and in the notes. For example, the face of the balance sheet must show specific items such as cash and cash equivalents, plant, property and equipment, and inventories. Items listed on the face of the comprehensive income statement must include revenue, profit or loss, tax expense, and finance costs, among others.
  - **Comparative information**
    - ✓Comparative information for prior periods should be included unless a specific standard states otherwise.

Differences between IFRS and US GAAP

- Like the IASB, the FASB has a framework for preparing and presenting financial statements. The two organizations are working toward a common framework, but at present the two frameworks differ in several respects.
  - The IASB framework lists ***income and expenses*** as elements related to performance, while the FASB framework includes ***revenues, expenses, gains, losses, and comprehensive income.***
  - The FASB defines an asset as a ***future economic benefit***, whereas the IASB defines it as ***a resource from which a future economic benefit is expected to flow***. Also, the FASB uses the word *probable* in its definition of assets and liabilities.
  - The FASB does not **allow the upward** valuation of most assets.

Differences between IFRS and US GAAP

- **A reconciliation statement**: In many cases, however, a company will present **a reconciliation statement** showing what its financial results would have been under an alternative reporting system.
- Even when a unified framework emerges, special reporting standards that apply to particular industries (e.g., **insurance and banking**) will continue to exist.

Coherent financial reporting framework

- A coherent financial reporting framework **should exhibit** transparency, comprehensiveness, and consistency.
  - **Transparency**

    Full disclosure and fair presentation create transparent.
  - **Comprehensiveness**

    An effective financial reporting framework is based on principles that are universal enough to provide guidance for recording both existing and newly developed transactions.
  - **Consistency**

    Similar transactions should be accounted for in a similar manner regardless of industry company size, geography, or other characteristics.

Barriers to Coherent financial reporting framework

- **Barriers to creating a coherent financial reporting framework include issues related to valuation, standard setting, and measurement.**
  - **Valuation**
    - ✓ Measurement bases for valuation that require little judgment, such as historical cost, may be less relevant than a basis like fair value that requires more judgment.
  - **Standard setting**
    - ✓ Three approaches to standard setting are a "principles-based" approach that relies on a broad framework, a "rules-based" approach that gives specific guidance about how to classify transactions, and an "objectives-oriented" approach that blends the other two approaches. IFRS is largely a principles-based approach. U.S. GAAP has traditionally been more rules-based, but the common conceptual framework is moving toward an objectives-oriented approach.
  - **Measurement**
    - ✓ Another trade-off in financial reporting is between properly valuing the elements at one point in time (as on the balance sheet) and properly valuing the changes between points in time (as on the income statement). An "asset/liability" approach, which standard setters have largely used, focuses on balance sheet valuation. A "revenue/expense" approach would tend to place more significance on the income statement.

Disclosures of significant accounting policies

- Companies that prepare financial statements under IFRS or U.S. GAAP must disclose their accounting policies and estimates in the footnotes.
- Significant policies and estimates that require management judgment are also addressed in Management's Discussion and Analysis.
- Another disclosure that is required for public companies is the likely impact of implementing recently issued accounting standards.
- Management can discuss the impact of adopting a new standard, conclude that the standard does not apply or will not affect the financial statements materially, or state that they are still evaluating the effects of the new standards.

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

The income statement	Comprehensive income	The statement of changes in equity	The balance sheet
1. Format and components	1. Format and components	1. Format and components	1. Format and components
	Relationship		
2. Common – size I/S ratio			2. Common – size B/S ratio
3. Accrual accounting & Revenue recognition			3. Measurement bases
4. Earnings per share			4. Basic accounting for Financial instruments

Income Statement Format and Components

- **Net income = revenues - ordinary expenses + other income - other expense + gains - losses**
  - **Revenues** are the amounts reported from the sale of goods and services in the normal course of business.
    - ✓ Revenue less adjustments for estimated returns and allowances is known as **net revenue**.
  - **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.

Expenses grouped by nature or function

- **By nature:**
  - Presenting all depreciation expense from manufacturing and administration together in one line of the income statement.
- **By function:**
  - Combining all costs associated with manufacturing (raw materials, depreciation, labor, etc.) as cost of goods sold.

Income Statement Format and Components

- **Net income = (revenues - ordinary expenses) + (other income - other expense) + (gains – losses)**
  - **Gain or loss:** The difference between the sales price and book value is reported as a gain or loss on the income statement.
    - ✓ Gains and losses result in an increase (gains) or decrease (losses) of economic benefits.
    - ✓ Gains and losses may or may not result from ordinary business activities. Summarizing, net income is equal to income (revenues + gains) minus expenses (including losses). Thus, the components can be rearranged as follows:
  - **Non controlling interest.** If a firm has a controlling interest in a subsidiary, the pro rata share of the subsidiary's income not owned by the parent is reported in parent's income statement as the non controlling interest (also known as minority interest or minority owners' interest).
    - ✓ The non controlling interest is subtracted in arriving at net income because the parent is reporting all of the subsidiary's revenue and expense.

Income Statement Format and Components

- **Presentation Formats**
  - A firm can present its income statement using a single-step or multi-step format.
    - ✓ In a single-step statement, all revenues are grouped together and all expenses are grouped together.
    - ✓ A multi-step format includes *gross profit,* revenues minus cost of goods sold.
- **Gross profit** is the amount that remains after the direct costs of producing a product or service are subtracted from revenue.
- **Operating profit or operating income:**
  - Subtracting operating expenses, such as selling, general, and administrative expenses, from gross profit results in another subtotal known as **operating profit or operating income.**
  - For nonfinancial firms, operating profit is profit before financing costs, income taxes, and non-operating items are considered. Subtracting interest expense and income taxes from operating profit results in the firm's net income, sometimes referred to as **"earnings" or the "bottom line."**

Income Statement format and components

Net revenues **from Sales of goods and services**
– Cost of goods sold/Cost of service provided
Gross profit
– Other operating Expenses (SG&A)
Operating income from continuing operations
+ Other Income and Revenues
Recurring income before interest and taxes from continuing operations
– Financing Costs
Recurring (pretax) income from continuing operations
+/ – Unusual or Infrequent Items
Pretax income from Continuing Operations
– Income Tax Expense
Net Income from Continuing Operations
+/ – Income from Discontinued Operations (net of tax)
+/ – Extraordinary Items (net of tax)
Net Income

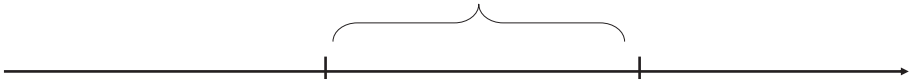
Income Statement — Format

- **Unusual or infrequent items (nonrecurring items)**
  - reported "above the line" and presented on a pretax basis
    - ✓G/L from the sale of assets or part of a business
    - ✓Impairments, write-offs, write-downs, and restructuring costs.
- **Extraordinary items (presented on net of tax)**
  - Loss from expropriation of assets;
  - Gains or losses from early retirement of debt;
  - Uninsured losses from natural disasters.
- **Discontinued operations (presented on net of tax)**
  - See next page.
- **Accounting changes (notes)**
  - Change in accounting principle (might be retrospective);
  - Change in accounting estimate (prospective and not a below line item).

Income Statement - Discontinued operations

Any income or loss from discontinued operations is reported separately in the income statement, net of tax, after income from continuing operations.

Phaseout period



Any past income statements presented must be restated, separating the income and loss from the discontinued operations.

Measurement date
The date when the company develops a formal plan for disposing of an operation.

Actual disposal date

On the measurement date, the company will accrue any estimated loss during the phaseout period and any estimated loss on the sale of the business. Any expected gain on the disposal cannot be reported until after the sale is completed.

Income Statement Format and Components

- **Above the line**
  - Unusual or infrequent items (nonrecurring items)
    - ✓Either unusual or infrequent but not both
    - ✓Presented on a pretax basis
- **Below the line (presented on net of tax)**

Extraordinary items	Discontinued operations	Accounting changes
•Both unusual and infrequent •Examples : •Losses from an expropriation assets •Gains or losses from early retirement of debt; •Uninsured losses from natural disasters.	•The time between Measurement date and Disposal date → phase out period	•Change in accounting principle →retrospective application •Change in accounting estimate →prospective application (and not a below line item). •Errors →restate financial statement →Notes disclosure

Income Statement format and components

- **Fairplay had the following information related to the sale of its products during 2006, which was its first year of business:**

Revenue	**$1,000,000**
Returns of goods sold	**$100,000**
Cash collected	**$800,000**
Cost of goods sold	**$700,000**

Under the accrual basis of accounting, how much net revenue would be reported on Fairplay's 2006 income statement?
A. $200,000.
B. $800,000.
C. $900,000.

- **Answer：C is correct.**
  - Net revenue is revenue for goods sold during the period less any returns and allowances, or $1,000,000 minus $100,000 — $900,000.
  - A is incorrect; this represents gross profit.
  - B is incorrect; this is the cash collected that is not used under the accrual basis.

Income Statement format and components

- **Denali Limited, a manufacturing company, had the following income statement information:**

Revenue	$4,000,000
Cost of goods sold	$3,000,000
Other operating expenses	$500,000
Interest expense	$100,000
Tax expense	$120,000

Denali's gross profit is equal to
A. $280,000.
B. $500,000.
C. $1,000,000.

Answer： C is correct.

- Gross margin is revenue minus cost of goods sold. A represents net income and B represents operating income.

Income Statement format and components

- Income statement can use **a single-step or multi-step format**.
  - From Question 2

Multi – step I/S	$'000
Revenue	**4,000**
Cost of goods sold	**(3,000)**
Gross profit	1,000
Other operating expenses	**(500)**
Operating profit (EBIT)	500
Interest expense	**(100)**
Earning before tax (EBT)	400
Tax expense	**(120)**
Net income (NI)	280

Single – step I/S	$'000
Revenue	**4,000**
Cost of goods sold	**(3,000)**
Other operating expenses	**(500)**
Operating profit (EBIT)	500
Interest expense	**(100)**
Earning before tax (EBT)	400
Tax expense	**(120)**
Net income (NI)	280

Income Statement format and components

- **Expenses can be grouped either by nature or function**
  - From Question 2

Multi – step I/S	$'000
Revenue	**4,000**
Cost of goods sold	**(3,000)**
Gross profit	1,000
Other operating expenses	**(500)**
Operating profit (EBIT)	500
Interest expense	**(100)**
Earning before tax (EBT)	400
Tax expense	**(120)**
Net income (NI)	280

✓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.*** Grouping expenses by function is sometimes referred to as the ***cost of sales method.***

Common – size I/S

Item in the income statement account /revenues

Example :

	I/S $	Common – size I/S
Revenue	**1,000**	**100%**
COGS	**(200)**	**(20%)**
Gross profit	**800**	**80%**
Other Operating expense	**(150)**	**(15%)**
Operating profit (EBIT)	**650**	**65%**
Interest expense	**(50)**	**(5%)**
Earning before tax (EBT)	**600**	**60%**
Tax expense	**(180)**	**(18%)**
Net income (NI)	**420**	**42%**

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Revenue}}$$

$$\text{Net profit margin} = \frac{\text{Net income}}{\text{Revenue}}$$

Accrual accounting & revenue recognition

- **Under the accrual method of accounting**
  - revenue is recognized when earned and expenses are recognized when incurred.
  - Accrual accounting 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.
- **According to the International** Accounting Standards Board (IASB)**,**
  - For sale of goods, revenue is recognized when:
    - ✓ The risk and reward of ownership is transferred.
    - ✓ There is no continuing control or management over the goods sold.
    - ✓ Revenue can be reliably measured.
    - ✓ There is a probable flow of economic benefits.
    - ✓ The cost can be reliably measured.
  - For services rendered, revenue is recognized when:
    - ✓ The amount of revenue can be reliably measured.
    - ✓ There is a probable flow of economic benefits.
    - ✓ The stage of completion can be measured.
    - ✓ The cost incurred and cost of completion can be reliably measured.

Accrual accounting & revenue recognition

- **According to the Financial** Accounting Standards Board (FASB), **revenue is recognized in the income statement when**
  - realized or realizable and
  - earned.
- **The Securities and Exchange Commission (SEC) provides additional guidance by listing four criteria to determine whether revenue should be recognized:**
  - There is evidence of an arrangement between the buyer and seller.
  - The product has been delivered or the service has been rendered.
  - The price is determined or determinable.
  - The seller is reasonably sure of collecting money.

Accrual accounting & revenue recognition

- Matching principle **.**
  - Revenue is recognized when **earned** } **Accrual accounting**
  - Expenses are recognized when **incurred**
  - Expenses the directly related to revenue generation are recognized in **the same period as** the revenue

Firms can manipulate Net income by

recognizing revenue earlier or **delaying the expenses recognition**

Revenue recognition

	Condition	Methods		Descriptions
LT contract 计算	✓ Projects of long-term contract. ✓ **Reliable estimates of the revenues, costs and completion time.**	GAAP IFRS	**Percentage-of-completion method**	✓ Revenue, expense, and profit recognized as the work is performed. ✓ Percentage of completion measured by the total cost incurred to date divided by the total expected cost of the project
	✓ Projects of long-term projects. ✓ Outcome of the project **cannot be reliably estimated.**	GAAP	**Completed contract method**	Revenue, expense and profit are recognized only when the contract is complete.
		IFRS	✓ Revenue is recognized to the extent of contract costs. ✓ Costs are expenses when incurred ✓ Profits are recognized only at completion	

POC and CC: Example 1

➢ **Assume that AAA construction corporation has a contract to build a ship for $1,000 and a reliable estimate of the contract's total cost is $800. project costs incurred by AAA are as follows:**

Year	2005	2006	2007	Total
Cost incurred	$400	$300	$100	$800

Determine AAA's net income from this project for each year using the percentage – of – completion and completed contract methods

Example 1

➢ **Answer：**

- Percentage – of – completion

Year	2005	2006	2007	Total
Revenue	$500	$375	$125	$1,000
Expense	($400)	($300)	($100)	($800)
net income	$100	$75	$25	$200

- Completed contract method

Year	2005	2006	2007	Total
Revenue	-	-	$1,000	$1,000
Expense	-	-	($800)	($800)
net income	-	-	$200	$200

Revenue recognition

POC vs. Completed-contract: Impact on F/S during one fiscal year

F/S	Items	POC	Completed Contract
CFS	Cash flows	Same	Same
I/S	Income Volatility	Less	Reverse
	Net Income	Greater	

Revenue recognition

Installment contract (a firm finances a sale and payments are expected to be received over an extended period)	**GAAP**	Collectability cannot be reasonably estimated.	**Installment sales method** (Similar to percentage of completion method)	✓ Profit is recognized as cash is collected ✓ Profit is equal to cash collected during the period multiplied by the total expected profit as a percentage of sales ✓ Used in limited circumstances, eg. sale of estate or other firm assets
		Collectability is highly uncertain.	**Cost recovery method** (Similar to the completed contract method)	✓ Sales are recognized when cash is received ✓ Profit is recognized only when cash collected exceeds costs incurred.
	IFRS	Outcome can be reliably estimated	✓ The discounted present value of the installment payments is recognized at the time of sale. ✓ The difference between the installment payments and the discounted present value is recognized as interest over time	
		Outcome cannot be reliably estimated	Revenue recognition under IFRS is similar to cost recovery method	

Example 2

- **Assume BBB property corporation sells a piece of land for $1,000. the original cost of the land was $800. collection s received by BBB for the sale are as follows:**

Year	2005	2006	2007	Total
Collection	$400	$400	$200	$1,000

Determine BBB's profit under the installment and cost recovery methods.

Example 2

- **Answer:**
  - **Installment method**

Year	2005	2006	2007	Total
Revenue	**$400**	**$400**	**$200**	**$1,000**
Expense	**($320)**	**($320)**	**($160)**	**($800)**
net income	**$80**	**$80**	**$40**	**$200**

  - **Cost recovery method**

Year	2005	2006	2007	Total
Revenue	**$400**	**$400**	**$200**	**$1,000**
Expense	**($400)**	**($400)**	-	**($800)**
net income	**-**	**-**	$200	**$200**

Revenue recognition – Difference between IFRS and US.GAAP

- **For long- term contracts**
  - When the outcome of a long-term contract can be reliably estimated
    - ✓ the percentage of-completion method is used under both IFRS and U.S. GAAP.
      - Accordingly, revenue, expense, and therefore profit, are recognized as the work is performed.
      - The percentage of completion is measured by the total cost incurred to date divided by the total expected cost of the project.
  - If the firm cannot reliably measure the outcome of the project
    - ✓ Under International Financial Reporting Standards (IFRS),
      - revenue is recognized to the extent of contract costs, costs are expensed
      - profit is recognized only at completion.
    - ✓ Under U.S. GAAP, the ***completed-contract method*** is used when the outcome of the project cannot be reliably estimated.
      - Accordingly, revenue, expense, and profit are recognized only when the contract is complete.
  - **If a loss is expected, the loss must be recognized immediately under IFRS and U.S. GAAP.**

Revenue recognition – Difference between IFRS and US.GAAP

- **For Installment Sales**
  - Under IFRS, the discounted present value of the installment payments is recognized at the time of sale.
  - The difference between the installment payments and the discounted present value is recognized as interest over time.
  - If the outcome of the project cannot be reliably estimated, revenue recognition under IFRS is similar to the cost recovery method.

Revenue recognition: barter transaction

- **Barter Transactions**
  - In a **barter transaction**, two parties exchange goods or services without cash payment.
  - A **round-trip transaction** involves the sale of goods to one party with the simultaneous purchase of almost identical goods from the same party. The underlying issue with these transactions is whether revenue should be recognized.
- According to U.S. GAAP
  - revenue from a barter transaction can be recognized at fair value only if the firm has historically received cash payments for such goods and services and can use this historical experience to determine fair value.
  - Otherwise, the revenue is recorded at the carrying value of the asset surrendered.
- Under IFRS
  - revenue from barter transactions must be based on the fair value of revenue from similar nonbarter transactions with unrelated parties.

Gross vs. Net reporting of revenue

- **Gross and Net Reporting of Revenue**
  - Under **gross revenue reporting,** the selling firm reports sales revenue and cost of goods sold separately.
  - Under **net revenue reporting,** only the difference in sales and cost is reported. While profit is the same, sales are higher using gross revenue reporting.
- **The following criteria must be met in order to use gross revenue reporting under U.S. GAAP.7 The firm must:**
  - Be the primary obligor under the contract.
  - Bear the inventory risk and credit risk.
  - Be able to choose its supplier.
  - Have reasonable latitude to establish the price.

Implications for Financial Analysis of Revenue Reorganization

- **Users of financial information must consider two points when analyzing a firm's revenue:**
  - how conservative are the firm's revenue recognition policies (recognizing revenue sooner rather than later is more aggressive)
  - the extent to which the firm's policies rely on judgment and estimates.

Revenue recognition: Example

- **Example:** Consider a travel agent who arranges a first-class ticket for a customer flying to Singapore. The ticket price is $10,000, and the travel agent receives a $1,000 commission.
  - Using gross reporting, the travel agent would report $10,000 of revenue, $9,000 of expense, and $1,000 of profit.
  - Using net reporting, the travel agent would simply report $1,000 of revenue and no expense.

Earnings per share (EPS)

- **Earnings per share (EPS)**
  - is one of the most commonly used corporate profitability performance measures for publicly-traded firms (nonpublic companies are not required to report EPS data). EPS is reported only for shares of common stock (also known as ordinary stock).
    - ✓Basic EPS
    - ✓Dilutive EPS
      - Convertible debt
      - Convertible preferred stock
      - Stock option
      - Warrants

Basic EPS

- The **basic EPS** calculation does not consider the effects of any dilutive securities in the computation of EPS.

$$\text{basic EPS} = \frac{NI - div_{preferred\ stock}}{\text{weighted average number of common shares outstanding}}$$

- Weighted average number of common share outstanding
  - New issue, repurchase is **weighted by time (days or months);**
  - Stock dividend & stock split
    - ✓ A stock dividend is the distribution of additional shares to each shareholder in an amount proportional to their current number of shares. If a 10% stock dividend is paid, the holder of 100 shares of stock would receive 10 additional shares.
    - ✓ A stock split refers to the division of each "old" share into a specific number of "new" (post-split) shares. The holder of 100 shares will have 200 shares after a 2-for-1 split or 150 shares after a 3-for-2 split.
    - ✓ **stock dividend/split is not weighted by time, instead it should adjust the number of common share which exist before the stock dividend or split.**

Example 3

- Johnson company has net income of $10,000 and paid $1,000 cash dividend to its preferred shareholders and $1,750 cash dividend to its common shareholders. At the beginning of the year, there were 10,000 shares of common stock outstanding. 2,000 new shares were issued on July 1. what is johnson's basic EPS?
- **Answer:**
  - Weighted average shares = 10,000 × (12/12) + 2,000 ×(6/12) = 11,000
  - BEPS = ($10,000 - $1,000)/11,000 = $0.82

Diluted EPS

- Dilutive securities & Antidilutive securities
  - **Dilutive securities** are stock options, warrants, convertible debt, or convertible preferred stock that would decrease EPS if exercised or converted to common stock.
  - **Antidilutive securities** are stock options, warrants, convertible debt, or convertible preferred stock that would increase EPS if exercised or converted to common stock.
- **In the case of diluted EPS, if there are dilutive securities, then the numerator must be adjusted as follows:**
  - If convertible preferred stock is dilutive (meaning EPS will fall if it is converted to common stock), the convertible preferred dividends must be added to earnings available to common shareholders.
  - If convertible bonds are dilutive, then the bonds' after-tax interest expense is not considered an interest expense for diluted EPS. Hence, interest expense multiplied by (1 - the tax rate) must be added back to the numerator.

Diluted EPS

- **When the firm has dilutive securities outstanding**
  - the denominator is the basic EPS denominator adjusted for the equivalent number of common shares that would be created by the conversion of all dilutive securities outstanding (convertible bonds, convertible preferred shares, warrants, and options), with each one considered separately to determine if it is dilutive.
- **If a dilutive security was issued during the year,**
  - the increase in the weighted average number of shares for diluted EPS is based on only the portion of the year the dilutive security was outstanding.
- Dilutive stock options or warrants increase the number of common shares outstanding in the denominator for diluted EPS. There is no adjustment to the numerator.

Diluted EPS

- **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.

Diluted EPS

- **Example: Treasury stock method**
  - Baxter Company has 5,000 shares outstanding all year. Baxter had 2,000 outstanding warrants all year, convertible into one share each at $20 per share. The year-end price of Baxter stock was $40, and the average stock price was $30. What effect will these warrants have on the weighted average number of shares?
  - Answer:
    - ✓ If the warrants are exercised, the company will receive 2,000 x $20 = $40,000 and issue 2,000 new shares.
    - ✓ The treasury stock method assumes the company uses these funds to repurchase shares at the average market price of $30.
    - ✓ The company would repurchase $40,000 / $30 = 1,333 shares.
    - ✓ Net shares issued would be 2,000 - 1,333 = 667 shares.

Diluted EPS

$$\text{diluted EPS} = \frac{\text{adjusted income available for common shares}}{\text{weighted avg. common \& potential common shares out}}$$

$$= \frac{\begin{bmatrix}\text{NI}\\ -\,\text{div}_{\text{preferred}}\end{bmatrix} + \left[\text{div}_{\substack{\text{convertible}\\ \text{preferred}}}\right] + \left[\text{interest}_{\substack{\text{convertible}\\ \text{debt}}}\right](1-t)}{WACSO + \left[\text{shares}_{\substack{\text{conversion of}\\ \text{conv. pfd. shares}}}\right] + \left[\text{shares}_{\substack{\text{conversion of}\\ \text{conv. debt}}}\right] + \left[\text{shares}_{\substack{\text{issuable from}\\ \text{stock opt.}}}\right]}$$

Example 4

- **EPS with convertible debt**

During 2006 GF corp. reported net income of $115,600 and had 200,000 shares of common stock outstanding for the entire year. GF also had 1,000 shares of 10%, par $100 preferred stock outstanding during 2006. During 2005, GF issued 600, $1,000 par, 7% bonds for $600,000 (issued at par). Each of these bonds is convertible to 100 shares of common stock. The tax rate is 40%.

Compute the 2006 basic and diluted EPS.

- **Answer:**
  - BEPS = ($115,600 - $100 × 1000 × 10%)/ 200,000 = 52.8 Cents
  - Adjusted income available for common shares = $115,600 – pref div $10,000 + int saving $600,000 × 7% × (1-40%) = $130,800
  - Weighted average common shares and potential shares = 200,000 + 600 × 100 = 260,000
  - DEPS = $130,800 / 260,000 = 50.3 Cents

Example 5

- **EPS with convertible preferred stock**

During 2006, GF reported net income of $115,600, and had 200,000 shares of common and 1,000 shares of preferred stock outstanding for the entire year. GF's 10%, $100 par value preferred-stock are each convertible to 40 shares of common stock. The tax rate is 40%.

Compute diluted EPS

- **Answer:**
  - Adjusted income available for common shares = $115,600
  - Weighted average common shares and potential shares = 200,000 + 1000 × 40 = 240,000
  - DEPS = $115,600 / 240,000 = 48.2 Cents

Example 6

- **EPS with Warrants/ Stock options**

GF has 5000 shares outstanding all year. GF had 2000 outstanding warrants all year, convertible into one share each at $20 per share. The year-end price of GF stock was $40, and the average stock price was $30. If GF had net income of $10,000 of the year, what is GF basic and diluted EPS?

- **Answer:**
  - BEPS = $10,000/5,000 = $2.00
  - Adjusted income available for common shares = $10,000
  - Weighted average common shares and potential shares = 5,000 + 667 = 5,667
  - DEPS = $10,000 / 5,667 = $1.76

Shares outstanding	**5,000**
Warrants conversion	**2,000**
Treasury shares purchased	**(1,333)**
Denominator	**5,667**

Comprehensive income

- **Retained earnings**
  - At the end of each accounting period, the net income of the firm is added to stockholders' equity through an account known as retained earnings.
  - Therefore, any transaction that affects the income statement (net income) will also affect stockholders' equity.
- **Comprehensive income**
  - **Comprehensive income** is a more inclusive measure that includes all changes in equity except for owner contributions and distributions. That is, comprehensive income is the sum of net income and other comprehensive income. Other comprehensive income includes transactions that are not included in net income.
  - Other comprehensive Income for both GAAP and IFRS
    - ✓ 1.Foreign currency translation gains and losses.
    - ✓ 2.Certain costs of a company's defined benefit post-retirement plans that are not recognized in the current period.(actuarial gains/losses)
    - ✓ 3.Unrealized gains and losses from cash flow hedging derivatives.
    - ✓ 4.Unrealized gains and losses from available-for-sale securities.
  - **Under IFRS**, other comprehensive income includes certain changes in the value of long-lived assets that are measured using the revaluation model rather than the cost model

Comprehensive income

Comprehensive income	
	$
Net income	**X**
Other comprehensive income:	
Foreign currency translation gains and (losses)	**X/(X)**
Adjustment for minimum pension liabilities	**X/(X)**
Unrealized gains and (losses) form cash flow hedging derivatives	**X/(X)**
Unrealized gains and (losses) form available – for –sale securities	**X/(X)**
Comprehensive income	**X/(X)**

Comprehensive income

Comprehensive income	
	$
Net income	**50**
Other comprehensive income:	
Foreign currency translation gains and (losses)	**15**
Adjustment for minimum pension liabilities	**(10)**
Unrealized gains and (losses) form cash flow hedging derivatives	**3**
Unrealized gains and (losses) form available – for –sale securities	**2**
Comprehensive income	**60**

The statement of changes in equity

➢ **A** summary **of all transactions within the equity accounts**

	Capital *a*	Additional paid – in capital *b*	Retained earnings *c*	Other comprehensive income *d*	Total (explanation)
Beginning balance	**100**	**100**	**100**	**100**	**400 (=a+b+c+d)**
Net income			50		50(=c)
Other Comprehensive income				20	20(=d)
Comprehensive income					**70 (subtotal)**
Issuance of common stock	**25**	**5**			**30 (= a+b)**
Repurchased of common stock	**(20)**	**(4)**			**(24) (= a+b)**
Dividend			**(15)**		**(15) (= c)**
Ending balance	105	101	135	120	461(subtotal = a+b+c+d)

Equity in the B/S

F.R.A

➢ **SS7**
- R22: Financial Statement Analysis: An Introduction
- R23: Financial Reporting Mechanics
- R24: Financial Reporting Standards

➢ **SS8**
- R25: Understanding the I/S
- R26:Understanding the B/S
- R27: Understanding the C/F
- R28: Financial Analysis Techniques

➢ **SS9**
- ➢R29: Inventories
- ➢R30: Long-Lived Assets
- ➢R31: Income Taxes
- ➢R32: Long-Term Liabilities and Leases

➢ **SS10**
- ➢R33: Financial Reporting Quality
- ➢R34: Financial Statement Analysis: Applications

Balance Sheet format and components

➢ **Assets :**
- Provide **probable future economic benefits controlled** by an entity as a result of **previous transactions**.
- Current and Non – current assets (Long – lived assets)

➢ **Liabilities :**
- Are **obligations owed** by an entity **from previous transactions** that are expected to result in **an outflow of economic benefits in the future**.
- Current and Non – current liabilities (Long – term liabilities)

➢ **Stockholders' equity :**
- Is **the residual interest in assets** that remains after subtracting a firm's liabilities.

➢ A financial statement item should be recognized if a future economic benefit from the item (flowing to or from the firm) is ***probable*** and the item's value or cost can be measured reliably.

Balance Sheet - Limitations

- **Uses and limitations of the balance sheet in financial analysis.**
  - **The balance sheet can be used to assess a firm's liquidity, solvency, and ability to make distributions to shareholders.**
    - ✓ From the firm's perspective, liquidity is the ability to meet short-term obligations
    - ✓ Solvency is the ability to meet long-term obligations.

Alternative formats of balance sheet presentation

- **Classified balance sheet**
  - Both IFRS and U.S. GAAP require firms to separately report their current assets and noncurrent assets and current and noncurrent liabilities.
  - The current/noncurrent format is known as a classified balance sheet and is useful in evaluating liquidity.
- **Liquidity-based presentations**
  - Under IFRS, firms can choose to use a liquidity-based format if the presentation is more relevant and reliable.
  - Liquidity-based presentations, which are often used in the banking industry, present assets and liabilities in the order of liquidity.

Balance Sheet format and components

- **Account format**

The balance sheet

Assets	X	Equity	X
		Liabilities	X
Total assets	X	Total equity and liabilities	X

- **Report format - Classified balance sheet**

Assets	
Non – current assets	**X**
Current assets	**X**
Total assets	X
Equity & liabilities	
Equity	**X**
Non – current liabilities	**X**
Current liabilities	**X**
Total equity and liabilities	X

Balance Sheet format and components

➢ **Assets :**

Current assets	Cash and equivalents	**Presented in the** order of liquidity
	Accounts receivable	
	Inventory	
	Prepaid expenses	
	Short – term investments	
	Other current assets	
Non current assets	Property , plant and equipment (PP&E)	
	Intangible assets	
	Long – term investments	
	Deferred tax assets	
	Pension assets	

Balance Sheet format and components

➢ **Liabilities :**

Current liabilities	Bank overdraft	**In the order of** **•Maturity** **•Descending order by amount** **•In the event of liquidation**
	Accounts payable	
	Accrued expenses	
	Unearned revenue	
	The current portion of long – term debt	
	Current taxes payable	
long – term liabilities	Notes payable	
	Bonds payable	
	Capital / Financial lease obligations	
	Pension liabilities	
	Deferred tax liabilities	

Balance Sheet format and components

➢ **Stockholders' equity :**

Capital	Common stock , preferred stock
Additional paid-in-capital	Capital in excess of par i.e. premium
Treasury stock	*Stock has been reacquired by the issuing firm but not yet retired* *No voting rights, no dividend*
Retained earnings	Net Income – Dividend
Accumulated other comprehensive income	• Foreign currency translation gains and losses. • Adjustments for minimum pension liability. • Unrealized gains and losses from cash flow hedging derivatives. • Unrealized gains and losses from available-for-sale securities
Minority interest / Non-controlling interest	*Group accounting*

Common size B/S

- **Item in the balance sheet account** / total assets

Assets	$	Common - size
Non – current assets	**600**	**60%**
Current assets	**400**	**40%**
Total assets	1,000	100%
Equity & liabilities		
Equity	**450**	**45%**
Non – current liabilities	**300**	**30%**
Current liabilities	**250**	**25%**
Total equity and liabilities	1,000	100%

Financial instruments

Category	Measurement	Unrealized/Realized Gains or Losses
Held-to-maturity	Amortized cost	Unrealized: not reported Realized: reported in income statement
Trading	Fair value	Unrealized: reported in income statement Realized: reported in income statement
Available-for-sale	Fair value	Unrealized: reported in equity Realized: reported in income statement

Financial instruments: Example 1

- On 1 January 2001, Company GF purchased a 4 – year zero coupon bond for $441,018 with a redemption price of $600,000, which is the par value of the bond. The effective interest rates on I January 2001 and 31 December 2001 were 8% and 7 %, respectively.
  Show the accounting treatment at the year ended 31 December 2001 if this bond was recognized by GF under:
  a. Amortized cost
  b. Fair value

Financial instruments: Example 1

$$\frac{600,000}{1.08^4} = 441,018$$

$$\frac{600,000}{1.08^3} = 476,299$$

Answer

- **Amortized cost**

Year	Opening balance	Financing income 8%	Closing balance
2001	441,018	35,281	476,299
2002	476,299	38,104	514,403
2003	514,403	41,153	555,556
2004	555,556	44,444	600,000

- **Fair value**

Year	Opening balance	Financing income 8%	Closing balance
2001	441,018	35,281	476,299
Gain			13,480
Fair value			489,779

$$\frac{600,000}{1.07^3} = 489,779$$

Financial instruments: Example 2

- **Example 2:For financial assets classified as trading securities, how are unrealized gains and losses reflected in shareholders' equity?**

  A. They are not recognized.

  B. As an adjustment to paid-in capital.

  C. They flow through income into retained earnings.

- **Answer:**

  C is correct.

  - For financial assets classified as trading securities, unrealized gains and losses are reported on the income statement and flow to shareholders' equity as part of retained earnings.

Financial instruments: Example 3

- **Example 3: 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. As a separate line item (other comprehensive income)

- **Answer:**

  C is correct.

  - For financial assets classified as available for sale, unrealized gains and losses are not recorded on the income statement but do appear on the balance sheet. Shareholders' equity is adjusted through a separate line item for valuation gains and losses termed "other comprehensive income."

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Types of cash flows**
   - CFO, CFI,CFF
   - U.S. GAAP vs. IFRS
2. **Cash flow calculation**
   - CFO, CFI, CFF
3. **Analysis of Cash flow statement**
   - Common – size CFS
   - Other ratios
4. **Free cash flows**

The cash flow statement

- **The cash flow statement provides information beyond that available from the income statement, which is based on accrual, rather than cash, accounting. The cash flow statement provides the following:**
  - Information about a company's cash receipts and cash payments **during an accounting period.**
  - Information about a company's operating, investing, and financing activities.
  - An understanding of the impact of accrual accounting events on cash flows.
- Items on the cash flow statement come from two sources
  - Income statement items
  - Changes in balance sheet accounts

    Operating cash flow
    + Investing cash flow
    + Financing cash flow
    = Change in cash balance for the current year
    + Beginning cash balance
    = Ending cash balance

  Non cash activities are not reported in the cash flow statement

Types of cash flows

- Cash flow from operating activities (CFO)
  - sometimes referred to as "cash flow from operations" or "operating cash flow," consists of the inflows and outflows of cash resulting from transactions that affect a firm's net income.
- Cash flow from investing activities (CFI)
  - consists of the inflows and outflows of cash resulting from the acquisition or disposal of long-term assets and certain investments.
- Cash flow from financing activities (CFF)
  - consists of the inflows and outflows of cash resulting from transactions affecting a firm's capital structure.

Types of cash flows

U.S. GAAP Cash Flow Classification

Cash flows from Operating Activities *Cash flows resulting from transaction that affect a firm's net income*	
Inflows	**Outflows**
Cash collected from customers	Cash paid to employees and suppliers
Sale proceeds from trading securities	Acquisition of trading securities
Interest received	Interest paid
Dividend received	Taxes paid
	Cash paid for other expenses Purchase trading

Types of cash flows

U.S. GAAP Cash Flow Classification

Cash flows from Investing Activities *Cash flows resulting from the acquisition or disposal of long – term assets and certain investments*	
Inflows	**Outflows**
Sale proceeds from fixed assets	Acquisition of fixed assets
Sale proceeds from debt & equity investments	Acquisition of debt & equity investments
Principal received from loans made to others	Loans made to others

Type of cash flows

U.S. GAAP Cash Flow Classification

Cash flows from Financing Activities ***Cash flows resulting from transaction that affect a firm's capital structure***	
Inflows	**Outflows**
Principal amounts of debt issued	Principal paid on debt
Proceeds from issuing stocks	Payments to reacquire stock
	Dividends paid to shareholders

Types of cash flows

Items	U.S. GAAP	IFRS
Interest received	CFO	CFO or CFI
Interest paid	CFO	CFO or CFF
Dividends received	CFO	CFO or CFI
Dividends paid	CFF	CFO or CFF
Taxes paid	CFO	CFO, CFI or CFF
Bank overdrafts	CFF	Cash equivalents
Disclosure	Encourage ***direct method***, but allows indirect method. If direct method presented, footnotes must also be provided of the indirect method.	Encourage ***direct method,*** but permits either IFRS permits more flexibility in reporting

Direct method is encouraged

CFO calculation——Direct Method & Indirect Method

- The only difference between the indirect and direct methods of presentation is in the cash flow from operations (CFO).
  - Direct Method
  - Converts an accrual-basis income statement into a cash-basis income statement.
    - ✓CFO under the direct method can be computed using a combination of
    - ✓The income statement
  - A statement of cash flows prepared under the indirect method
    - ✓Two major sections in CFO under the direct method:
    - ✓cash inflows (receipts)
    - ✓cash outflows (payments).
  - Indirect Method (for CFO only)
  - Net income is converted to operating cash flow by making adjustments for transactions that affect net income but are not cash transactions.
  - The direct method gives the analyst more information than the indirect method. The analyst can see the actual amounts that went to each use of cash and that were received from each source of cash, which can help the analyst to better understand the firm's performance over time and to forecast future cash flows.

Cash Flow Statement — Memorizing Tips

Liability

- + Δ; Namely, + (ending – beginning)

Assets

- - Δ ; Namely, - (ending – beginning)

A basic setting: To an entity

- Cash inflow: +
- Cash outflow: -

CFO calculation——Direct Method & Indirect Method

Calculation of CFO by Indirect method	
Net income	
+ Non-cash expenses or losses	Income statement items
- Non-cash revenues or gains	
+/- Non-operating items	
-Increase in non-cash operating asset accounts (Inventory, A/R)	Balance sheet items (working capital)
+Increase in operating liability accounts (A/P)	
=CFO	

CFO calculation——Direct Method & Indirect Method

➢ **1. An analyst gathered the following information from a company's 2005 financial statements ($ millions):**

Balances as of year ended 31 December	**2004**	**2005**
Retained earnings	**120**	**145**
Accounts receivable	**38**	**43**
Inventory	**45**	**48**
Accounts payable	**36**	**29**

The company declared and paid cash dividends of $10 million in 2005 and recorded depreciation expense in the amount of $25 million for 2005. The company's 2005 cash flow from operations ($ millions) was closest to

A. 25.

B. 35.

C. 45.

CFO calculation——Direct Method & Indirect Method

➢ **Answer:**

C is correct.

- Net income (NI) for 2005 can be computed as the change in retained earnings, $25, plus the dividends paid in 2005, $10.
- NI can also be calculated from the formula: beginning retained earnings + NI—dividends paid = ending retained earnings.
  - ✓Depreciation of $25 would be added back to net income
  - ✓while the increases in accounts receivable, $5, and in inventory, $3, would be subtracted from net income because they are uses of cash. The decrease in accounts payable is also a use of cash and, therefore, a subtraction from net income.
  - ✓Thus, cash flow from operations for 2005 is $25 + $10 + $25 - $5 - $3 - $7 = $45 ($ millions).

CFO calculation——Direct Method & Indirect Method

Calculation of CFO by Direct method	
Cash received from customers	Opening A/R + net sales – Closing A/R=Net sales-ΔA/R
- Cash paid to suppliers	Opening A/P + COGS – Closing A/P = - COGS +ΔA/P+Depreciation included in COGS (COGS = Opening Inventory + purchase – Closing Inventory)
- Cash paid to employees	Opening wage payables + wage expense – Closing wage payables =-wage expense+Δwage payables
- Interests paid	Opening interest payables + interest expense – Closing interest payables=- interest expense +ΔInterest payables
- Tax paid	Opening tax payables + income tax expense – Closing tax payables = - income tax expense +Δtax payables
= CFO	

CFO calculation——Direct Method & Indirect Method

➢ **2. An analyst gathered the following information from a company's 2004 financial statements ($ millions):**

year ended 31 December	2003	2004
net sales	245.80	254.60
Cost of goods sold	168.30	175.90
Accounts receivable	73.20	68.30
Inventory	39.00	47.80
Accounts payable	20.30	22.90

CFO calculation——Direct Method & Indirect Method

- **3. Based only on the information above, the company's 2004 statement of cash flows prepared using the direct method would include amounts ($ millions) for cash received from customers and cash paid to suppliers, respectively, that are *closest* to:**

	Cash received from customers	Cash paid to suppliers
A	249.7	182.1
B	259.5	169.7
C	259.5	182.1

- **Answer:**

  C is correct.
  - Cash received from customers = Sales + The decrease in accounts receivable = 254.6 + 4.9 = 259.5.
  - Cash paid to suppliers = Cost of goods sold + The increase in inventory - Increase in accounts payable = 175.9 + 8.8 – 2.6 = 182.1

Cash Flow Statement — Calculation

Cash collection = net sales
Cash inputs = — COGS
Cash expenses = —operating expenses
Cash interest = —interest expenses
Cash taxes = —income tax expenses

—ΔA/R + Δunearned revenue
—Δinventories + ΔA/P+ Dep
+ ΔO/P + Δaccruals
+ ΔI/P+ payable+(-) Amortization of bond discount(premium)
+ ΔT/P + ΔDTL — ΔDTA

Net income
+ Depreciation
+/- L/G not relating to operating activities

— Δ working capital (excluding cash, loan, dividend payables and N/P)
Note:Δhere means increase.

<u>Calculation of CFO</u> — Direct method

CFI Calculation

- **Cash used in purchase of fixed assets:**
  - Pay attention to the movement of fixed assets.
  - Book Value = Carrying value = Purchase cost – AD – Impairment
  - $BV_{end} = BV_{Begin}$ + Purchase – Disposal BV – Depreciation
- **Proceeds received from sale of fixed assets**
  - Gain or loss = proceeds received – disposal NBV
  - Gain or loss resulting from disposal of PP&E or other long term assets are **NOT** presented in the CFI; instead, cash generated should be calculated based on the gain or loss.
- **Review other non-current assets: an increase in these items using cash, and vice versa.**

CFI Calculation

➢ **4. Silverago Incorporated, an international metals company, reported a loss on the sale of equipment of $2 million. In addition, the company's income statement shows depreciation expense of $8 million and the cash flow statement shows capital expenditure of $10 million, all of which was for the purchase of new equipment. Using the following information from the comparative balance sheets, how much cash did the company receive from the equipment sale?**

Balances sheet item	12-31-2005	12-31-2006	change
Equipment	$100million	$105million	$5million
Accumulated depreciation equipment	$40million	$46million	$6million

A. $6 million.

B. $5 million.

C. $1 million.

CFI Calculation

➢ **Answer:**

C is correct.

- Selling price (cash inflow) minus book value equals gain or loss on sale; therefore, gain or loss on sale plus book value equals selling price (cash inflow). The amount of loss is given, $2 million. To calculate the book value of the equipment sold, find the historical cost of the equipment and the accumulated depreciation on the equipment.
  - Beginning balance of equipment of $100 million plus equipment purchased of $10 million minus ending balance of equipment of $105 million equals the historical cost of equipment sold, or $5 million.
  - Beginning accumulated depreciation of $40 million plus depreciation expense for the year of $8 million minus ending balance of accumulated depreciation of $46 million equals accumulated depreciation on the equipment sold, or $2 million.
  - Therefore, the book value of the equipment sold was $5 million minus $2 million, or $3 million.
  - Because the loss on the sale of equipment was $2 million, the amount of cash received must have been $1 million.

CFF Calculations

➢ **All events that could have increased or decreased cash must be reconstructed.**

➢ **Review long-term debt and stock**

- Increases supply cash and decreases use cash.

➢ **Dividend paid**

- Dividend paid = - Dividend declared + Δdividend payables
- Opening R/E + Net Income – Dividend declared = Ending R/E

CFF Calculation

- 5.Jaderong Plinkett Stores reported net income of $25 million, which equals the company's comprehensive income. The company has 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?

Balances sheet item			change
Common stock	$100	$102	$2
Additional paid-in capital common stock	$100	$140	$40
Retained earnings	$100	$115	$15
Total stockholders' equity	$100	$357	$57

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

- **Answer:**

A is correct.

- The increase of $42 million in common stock and additional paid-in capital indicates that the company issued stock during the year.
- The increase in retained earnings of $15 million indicates that the company paid $10 million in cash dividends during the year, determined as beginning retained earnings of $100 million plus net income of $25 million, minus ending retained earnings of $115, which equals $10 million in cash dividends.

Analysis of CFS

- Examine the major sources and uses of cash
- Evaluating individual cash flow items
  - **Operating Cash Flow**
    A check of the quality of a firm's earnings.
  - **Investing Cash Flow**
    Increasing capital expenditures, a use of cash, is usually an indication of growth.
  - **Financing Cash Flow**
    Whether the firm is generating cash flow by issuing debt or equity.
    Whether the firm is using cash to repay debt, reacquire stock, or pay dividends.
- Common – size analysis

$$\frac{\text{cash flow statement account}}{\text{revenues}}$$

$$\frac{\text{cash outflow}}{\textit{total}\ \text{cash outflows}} \qquad \frac{\text{cash inflow}}{\textit{total}\ \text{cash inflows}}$$

Analysis of CFS

- **6. Which is an appropriate method of preparing a common-size cash flow statement?**

A. Begin with net income and show the items that reconcile net income and operating cash flows.
B. Show each line item on the cash flow statement as a percentage of net revenue.
C. Show each line item on the cash flow statement as a percentage of total cash outflows.

- **Answer:**

B is correct.

- Dividing each line item on the cash flow statement by net revenue is one of two acceptable approaches for preparing a common-size cash flow statement. The other acceptable approach involves expressing each line item of cash inflow (outflow) as a percentage of total inflows (outflows) of cash. Answer A is a description of the indirect method of determining cash flow from operations. Answer C is incorrect because in describing an alternative way to prepare a common-size cash flow statement it fails to distinguish between the divisor appropriate for cash outflows and cash inflows.

Analysis of CFO

Other cash flow ratios	
Performance ratios	**Coverage ratio**
CFO/ Revenue	CFO / Total debt
CFO/ Average total assets	CFO / Cash paid for long - term assets
CFO / Average total equity	CFO / Cash long – term debt repayment
CFO/ Operating income	CFO/ dividend paid
(CFO – Preferred dividends) / Weighted average number of common shares	CFO / Cash outflows from investing and financing activities
	(CFO + interest paid + taxes paid)/ Interest paid

Free Cash Flow

- Free cash flow **attempts to measure the cash available for discretionary purposes.**
- **Two common measure:**
  - **Free cash flow to the firm (FCFF)**
    - ✓ Cash available to all investors, both equity owners and debt holders
  - **Free cash flow to equity (FCFE)**
    - ✓ Cash available to equity owners

Free Cash Flow

- FCFF = NI + NCC – WC Inv – FC Inv +[Int * (1 - tax rate)]
  FCFF = CFO – FC Inv +[Int * (1 - tax rate)]
- FCFE = CFO – FC Inv + Net borrowing

  Where:
  - NI = net income
  - NCC = noncash charges (depreciation and amortization)
  - Int = interest expense
  - FCInv = fixed capital investment (net capital expenditure)
  - WCInv = working capital investment
  - Net borrowing = debt issued – debt repaid

***For firms follow IFRS that treat Dividend paid as part of CFO, the dividend paid must be added back for free cash flow calculation**

Cash Flow Statement — Free Cash Flow

- FCFF **is calculated from** *Net Income*:

  FCFF = NI + NCC + [Int * (1 - tax rate)] – FCInv – WCInv

  = EBIT*(1-tax rate) + NCC – FCInv - WCInv

- FCFF **is calculated from** *CFO*:

  FCFF = CFO + [Int * (1 - tax rate)] – FCInv

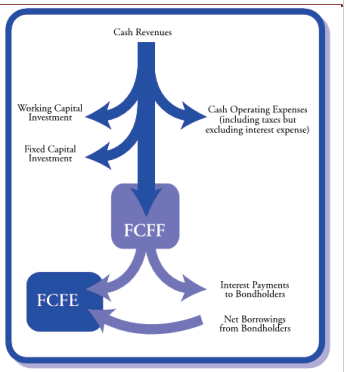
- FCFE **is calculated as follows:**

  FCFE = CFO – FCInv + Net borrowing

Free Cash Flow

Free cash flow

- Free cash flow attempts to measure the cash available for discretionary purposes.
- Two common measure:
  - **Free cash flow to firm (FCFF)**
  - **Free cash flow to equity (FCFE)**
- US GAAP :
  - **FCFF = NI + NCC +[Int * (1 - tax rate)] – FC Inv – WC Inv**
  - **FCFE = CFO – FC Inv + Net borrowing**



F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Common – size analysis**
2. **Ratios and Ratio analysis**
3. **DuPont system of analysis**
4. **Equity analysis, credit analysis and segment analysis**

Common – size analysis

- Common – size I/S $\frac{\text{income statement account}}{\text{revenues}}$
- Common – size B/S $\frac{\text{balance sheet account}}{\text{total assets}}$
- Common – size CFS $\frac{\text{cash flow statement account}}{\text{revenues}}$

$$\frac{\text{cash outflow}}{\textit{total}\ \text{cash outflows}} \qquad \frac{\text{cash inflow}}{\text{total cash inflows}}$$

Ratio and Ratio analysis

- **Categories of ratios**
  - **Profitability** ratio – ability to generate profit
  - **Activity** ratio – efficiency in using assets to generate revenue
  - **Liquidity** ratio – ability to pay short – term debt
  - **Solvency** ratio – ability to pay long – tem debt
  - **Valuation** ratio – analysis for investment in common equity

Profitability Ratios

- **A firm's ability to generate profits**

net revenue
less: COGS
gross profit
less: operating expense
operating profit(EBIT)
less: interest
earnings before tax
less: tax
earnings after tax
plus/less: below the line items adjusted for tax
net income
less: preference dividend
income available to common shareholders

Total capital
= Total assets
=
Short – term debt +
Long - term debt +
Common equity +
Preferred equity

Profitability Ratios

- **Profit / Net revenue**

Gross profit margin = *Gross profits* / net revenue
Operating profit margin = *EBIT* / net revenue
Pretax margin = *EBT* / net revenue
Net profit margin = *NI* / net revenue

- **Profit / Capital**

Return on assets (ROA) = [NI + interest (1-t)] / average total assets
Operating return on assets = *EBIT* / average total assets
[*Return on total capital (ROTC) = EBIT / average total capital*]
Return on equity (ROE) = *NI* / average total equity
Return on common equity = *(NI*- Preferred Dividend*)* / average common equity

Activity Ratios

- A firm's efficiency in using assets to generate revenue
  - Turnover = Net revenue/ assets

Total asset turnover = net revenue/ average total assets
Fixed asset turnover = net revenue / average net fixed assets
Working capital turnover = net revenue / average WC
Where:
Working capital = current assets – current liabilities

Activity Ratios

Inventory	A/R	A/P
Inventory turnover = COGS / average inventory	**Receivables turnover = Net revenue / average A/R**	**Payables turnover = Purchase / average A/P**
Average inventory processing period = 365 / inventory turnover	**Average receivables collection period = 365 / receivables turnover**	**Average payment period = 365 / payables turnover**
Operating cycle = collection period + inventory period		
Cash conversion cycle = collection period + inventory period - payment period.		

Corporate finance

Liquidity Ratios

- A firm's ability to pay short – term debt

Current ratio = Current assets / Current liabilities

Quick ratio = [cash + marketable securities + receivable] / Current liabilities

= [current asset - inventories] / Current liabilities

Cash ratio = [cash + marketable securities] / Current liabilities

Defensive interval = (cash + marketable securities + receivables) / average daily expenditures

Solvency Ratios

- A firm's ability to pay long – term debt
- **Leverage**

Debt-to-equity ratio = D / E

Debt-to-capital= D/(D+ E)

Debt-to-assets = D / A

Financial leverage = A / E

- **Coverage**

Interest coverage = EBIT / Interest

Fixed charge coverage = (EBIT + lease payments) / (Interest + lease payments)

Valuation Ratios

	Numerator	Denominator
P / E	**Price per share**	**Earnings Per share**
P / CF		**Cash flow per share**
P / S		**Sales per share**
P / BV		**Book Value per share**

	Numerator	Denominator
BEPS & DEPS		
Cash flow per share	**Cash flow from operations**	**Weighted average number of ordinary shares outstanding**
EBITDA per share	**EBITDA**	
Dividends per share	**Common dividends declared**	

Sustainable growth rate

$$g = ROE \times RR = ROE \times \left(1 - \frac{div \text{ declared}}{\text{operating income after taxes}}\right)$$

	Company A	Company B
EPS	**3**	**4**
DPS	**1.5**	**1**
ROE	**14%**	**12%**

14% * 50% = 7% **12% * 75% = 9%**

DuPont system of analysis

➢ 1.The three-part approach

$$ROE = \left(\frac{\text{net income}}{\text{sales}}\right)\left(\frac{\text{sales}}{\text{assets}}\right)\left(\frac{\text{assets}}{\text{equity}}\right)$$

$$= \begin{pmatrix}\text{net profit}\\ \text{margin}\end{pmatrix}\begin{pmatrix}\text{asset}\\ \text{trunover}\end{pmatrix}\begin{pmatrix}\text{leverage}\\ \text{ratio}\end{pmatrix}$$

It is not for the purpose of computing ROE, but for the purpose of decomposing the known ROE.

Example 1

- **Start Inc has maintained a stable and relatively high ROE of approximately 18% over the last three years. Use traditional DuPont analysis to decompose this ROE into its three components and comment on trends in company performance ($'million).**

	2003	2004	2005
Net income	21.5	22.3	21.9
Sales	305	350	410
Equity	119	124	126
Assets	230	290	350

Example 1

- **Answer:**
  - ROE

	2003	2004	2005
Net income	21.5	22.3	21.9
Equity	119	124	126
ROE	18.1%	18.0%	17.4%

  - DuPont (Some rounding in values)

	2003	2004	2005
Net income/sales	7.0%	6.4%	5.3%
Sales / assets	1.33	1.21	1.17
Assets / equity	1.93	2.34	2.78

DuPont system of analysis

- 2. The five-part analysis

$$ROE = \left(\frac{\text{net income}}{\text{EBT}}\right)\left(\frac{\text{EBT}}{\text{EBIT}}\right)\left(\frac{\text{EBIT}}{\text{revenue}}\right)\left(\frac{\text{revenue}}{\text{assets}}\right)\left(\frac{\text{assets}}{\text{equity}}\right)$$

$$= \begin{pmatrix}\text{tax}\\ \text{burden}\end{pmatrix}\begin{pmatrix}\text{interest}\\ \text{burden}\end{pmatrix}\begin{pmatrix}\text{EBIT}\\ \text{margin}\end{pmatrix}\begin{pmatrix}\text{asset}\\ \text{trunover}\end{pmatrix}\begin{pmatrix}\text{leverage}\\ \text{ratio}\end{pmatrix}$$

  - Tax burden = 1 – tax rate
  - Interest burden = 1 – interest rate

Example 2

- An analyst has gathered data from two companies in the same industry. Calculate the ROE for both companies and use the extended DuPont analysis to explain the critical factors that account for the differences in the two companies' ROEs.

	A	B
Revenue	$500	$900
EBIT	35	100
Interest expense	(5)	(0)
EBT	30	100
Tax	(10)	(40)
Net income	20	60
Total assets	250	300
Total debt	100	50
Owners' equity	150	250

Example 2

- Answer:

	A	B
Tax burden	66.7%	60.0%
Interest burden	85.7%	1
EBIT margin	7.0%	11.1%
Asset turnover	2.0	3.0
Financial leverage	1.67	1.20
ROE	13.4%	24.0%

Equity analysis, Credit analysis and Segments analysis

- **Equity analysis – Valuation ratios**
  - **Valuation ratios** are used in analysis for investment in common equity.
    - ✓ The most widely used valuation ratio is the *price-to-earnings* (P/E) ratio, the ratio of the current market price of a share of stock divided by the company's earnings per share.
    - ✓ Related measures based on price per share are the *price-to-cash flow,* the *price-to-sales,* and the *price-to-book value* ratios.

Equity analysis, Credit analysis and Segments analysis

- **Credit analysis – A firm's ability to service and repay its debt (Credit risk)**
  - The analysis of a company's financial reports
  - A broad assessment of a company's operations
    - ✓ Meeting with management
    - ✓ Tours of major facilities.
    - ✓ Meeting of a ratings committee after considering factors that include :
      - Business risk
      - Financial risk - Interest coverage ratio, Return on capital, Debt - to - asset ratio and Ratios of cash flow to total debt, **Z- score**.

Credit Analysis

- Z – score

  Z = 1.2 A + 1.4 B + 3.3 C + 0.6 D + 1.0 E

  Where:

  A = WC / TA

  B = RE / TA

  C = EBIT / TA

  D = MV of Equity / BV of Debt

  E = Revenue / TA

  ✓ If Z<1.8 → Bankruptcy

F.R.A

SS7
- R22: Financial Statement Analysis: An Introduction
- R23: Financial Reporting Mechanics
- R24: Financial Reporting Standards

SS8
- R25: Understanding the I/S
- R26:Understanding the B/S
- R27: Understanding the C/F
- R28: Financial Analysis Techniques

SS9
- R29: Inventories
- R30: Long-Lived Assets
- R31: Income Taxes
- R32: Long-Term Liabilities and Leases

SS10
- R33: Financial Reporting Quality
- R34: Financial Statement Analysis: Applications

Framework

1. **Inventory accounting/ The cost flow method**
   - Specific identification
   - Last in first out (LIFO)
   - First in first out (FIFO)
   - Weighted average (AVCO)
2. **Periodic vs. Perpetual Inventory systems***
3. **Inventory valuation**
   - U.S. GAAP
   - IFRS
4. **LIFO reserve and LIFO liquidation**
5. **Inventory adjustment**
6. **Inventory management**
7. **Inventory disclosure ***

Inventory accounting

➢ **Cost of goods sold (COGS)**

- **Cost of goods sold (COGS)** also referred to as cost of sales (COS) under IFRS, is related to the beginning balance of inventory, purchases, and the ending balance of inventory. The relationship is summarized in the following equation:
- COGS = beginning inventory + purchases - ending inventory
  - ✓ This equation can be rearranged to solve for any of the four variables:
    - purchases = ending inventory - beginning inventory + COGS
    - beginning inventory = COGS - purchases + ending inventory
    - ending inventory = beginning inventory + purchases - COGS

Inventory accounting

➢ **Product costs**

- The costs included in inventory are similar under IFRS and U.S. GAAP.
- These costs, known as product costs, are capitalized in the Inventories account on the balance sheet and include:
  - ✓ Purchase cost less trade discounts and rebates.
  - ✓ Conversion costs including labor and overhead.
  - ✓ Other costs necessary to bring the inventory to its present location and condition.
- By capitalizing inventory cost as an asset, expense recognition is delayed until the inventory is sold and revenue is recognized.

➢ **Period costs**

- Not all inventory costs are capitalized; some costs are expensed in the period incurred. These costs, known as period costs, include:
  - ✓ Abnormal waste of materials, labor, or overhead.
  - ✓ Storage costs (unless required as part of production).
  - ✓ Administrative overhead.
  - ✓ Selling costs.

Inventory valuation method

- **If the cost of inventory remains constant over time, determining the firm's COGS and ending inventory is simple.**
  - To compute COGS, simply multiply the number of units sold by the cost per unit.
  - To compute ending inventory, multiply the number of units remaining by the cost per unit.
- **Since cost of purchasing or producing inventory will change over time, firms must select a** cost flow method **(known as the cost flow assumption under U.S. GAAP and cost flow formula under IFRS) to allocate the inventory cost to the income statement (COGS) and the balance sheet (ending inventory).**
  - Under IFRS, the permissible methods are:
    - ✓ Specific identification.
    - ✓ First-in, first-out.
    - ✓ Weighted average cost.
  - U.S. GAAP permits these same cost flow methods, as well as the last-in, first-out (LIFO) method. LIFO is not allowed under IFRS.
  - ***The firm must employ the same cost flow method for inventories of similar nature and use.***

Inventory valuation method

- **Specific identification method**
  - Under the specific identification method, each unit sold is matched with the unit's actual cost.
    - ✓ Specific identification is appropriate when inventory items are not interchangeable and is commonly used by firms with a small number of costly and easily distinguishable items such as jewelry.
    - ✓ Specific identification is also appropriate for special orders or projects outside a firm's normal course of business.
- **First-in, first-out (FIFO)**
  - Under the first-in, first-out (FIFO) method, 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.

Inventory valuation method

- **Last-in, first-out (LIFO)**
  - Under the last-in, first-out (LIFO) method, the item purchased most recently is assumed to be the first item sold.
    - ✓ In an inflationary environment, LIFO COGS will be higher than FIFO COGS, and earnings will be lower. Lower earnings translate into lower income taxes, which increase cash flow.
    - ✓ Under LIFO, ending inventory on the balance sheet is valued using the earliest costs. Therefore, in an inflationary environment, LIFO ending inventory is less than current cost.
- **Weighted average cost**
  - The average cost per unit of inventory is computed by dividing the total cost of goods available for sale (beginning inventory + purchases) by the total quantity available for sale.
    - ✓ To compute COGS, the average cost per unit is multiplied by the number of units sold.
    - ✓ Similarly, to compute ending inventory, the average cost per unit is multiplied by the number of units that remain.
  - ***During inflationary or deflationary periods, the weighted average cost method will produce an inventory value between those produced by FIFO and LIFO..***

Inventory valuation method

Method	Assumption	Cost of goods sold consist of…	Ending inventory consists of…
FIFO (U.S. and IFRS)	The items first purchased are the first to be sold.	first purchased	More recent purchases
LIFO (U.S. only)	The items last purchased are the first to be sold.	last purchased	Earliest purchases
Weighted average cost AVCO (U.S. and IFRS)	Items sold are a mix of purchases.	Average cost of all items	Average cost of all items

Inventory valuation method

- **Being the time of** raising price

Better

	FIFO	LIFO	AVCO
B/S Ending inventory	**110,000**	**105,000**	**109,091**
I/S COGS	**490,000**	**495,000**	**490,909**

Better

- **LIFO provides the most useful estimate of COGS on the I/S**
- **FIFO provides the most useful estimate of Inventory value on the B/S**

Inventory valuation method: Example 1

- **Example 1: Zimt AG uses the FIFO inventory accounting method, and Nutmeg Inc. uses the LIFO method. Compared to the cost of replacing the inventory, during periods of rising prices the cost of goods sold reported by**

  A. Zimt is too low.

  B. Nutmeg is too low.

  C. Nutmeg is too high.

- **Answer：**

  A is correct.

  - Zimt uses the FIFO method, so its cost of goods sold represents units purchased at a (no longer available) lower price. Nutmeg uses the LIFO method, so its cost of goods sold is approximately equal to the current replacement cost of inventory.

Inventory valuation method

In periods of **rising prices** and **stable /increasing inventory quantities**

		LIFO	FIFO
I/S		**Higher COGS**	**Lower COGS**
		Lower EBIT	**Higher EBIT**
		Lower taxes	Higher taxes
		Lower net income(EAT)	**Higher net income (EAT)**
B/S		**Lower inventory balances**	**Higher inventory balances**
		Lower working capital	**Higher working capital**
CFS		Higher CFO(↓ taxes paid)	Lower CFO(↑ taxes paid)
Ratios	Profitability	**Lower net and gross margins**	**Higher net and gross margins**
	Liquidity	**Lower current ratio**	**Higher current ratio**
	Solvency	**Higher D/A and D/E**	**Lower D/A and D/E**
	Activity	Higher inventory turnover	Lower inventory turnover

Inventory systems*

Periodic	Perpetual
•Inventory value **and** COGS **are determined at the end of an accounting period** •**Need** a purchase account	•Inventory value **and** COGS **are updated continuously** •**Inventory purchased and sold is recorded directly in inventory** •**A purchase account is not necessary**
•Same **result for** FIFO & Specific identification method •Different **result for** LIFO & AVCO	

Example 2*

Jan 1 beginning inventory	**2 units @$2 each**
Jan 7 purchase	**3 units @ $3 each**
Jan 12 sale	**4 units**
Jan 19 purchase	**5 units @ $5each**
Jan 29 sale	**3 units**
Calculate COGS and ending inventory under the FIFO and LIFO cost flow method using the two inventory systems	

Example 2 – FIFO (Periodic)*

Jan sale of 7 units consists of:			
Units	**From**	**Costs**	**$**
2	**Jan 1 beginning inventory**	**2 units @ $2each**	**4**
3	**Jan 7 purchase**	**3 units @$3 each**	**9**
2	**Jan 19 purchase**	**2 units @ $5 each**	**10**
	Total		23
Jan ending inventory			
Units	**From**	**Costs**	**$**
3	**Jan 19 purchase**	**3 units @$5 each**	**15**
	Total		15

Example 2 – FIFO (Perpetual)*

Same result under FIFO

Jan 12 sale of 4 units consists of:			
Units	**From**	**Costs**	**$**
2	**Jan 1 beginning inventory**	**2 units @$2 each**	**4**
2	**Jan 7 purchase**	**2 units @ $3 each**	**6**
	Total		10
Jan 29 sale of 3 units consists of :			
Units	**From**	**Costs**	**$**
1	**Jan 7 purchase**	**1 units @ $3 each**	**3**
2	**Jan 19 purchase**	**2 units @ $5each**	**10**
	Total		13
Jan ending inventory			
Units	**From**	**Costs**	**$**
3	**Jan 19 purchase**	**3 units @$5 each**	15

COGS = $23

Example 2 – LIFO (Periodic)*

Jan sale of 7 units consists of:			
Units	**From**	**Costs**	**$**
5	**Jan 19 purchase**	**5 units @ $5each**	**25**
2	**Jan 7 purchase**	**2 units @$3 each**	**6**
	Total		31
Jan ending inventory			
Units	**From**	**Costs**	**$**
2	**Jan 1 beginning inventory**	**2 units @$2 each**	**4**
1	**Jan 7 purchase**	**1 units @$3 each**	**3**
	Total		7

Example 2 – LIFO (Perpetual)*

Different result under LIFO

Jan 12 sale of 4 units consists of:			
Units	**From**	**Costs**	**$**
3	Jan 7 purchase	3 units @$3 each	9
1	Jan 1 beginning inventory	1 units @ $2 each	2
	Total		11
Jan 29 sale of 3 units consists of :			
Units	**From**	**Costs**	**$**
3	Jan 19 purchase	3 units @ $5each	15
	Total		15
Jan ending inventory			
Units	**From**	**Costs**	**$**
1	Jan 1 beginning inventory	1 units @$2 each	2
2	Jan 19 purchase	2 units @$5 each	10
	Total		12

COGS = $26

Inventory valuation

U.S. GAAP	IFRS
The lower of	The lower of
•Cost Or •Market •If replacement cost (RC) > NRV Market = NRV •If replacement cost (RC) < NRV – normal profit margin Market = NRV – normal profit margin •NRV – normal profit margin < RC < NRV Market = replacement cost	•Cost Or •Net realizable value NRV = selling price – estimated cost of completion – selling costs
If Cost > Market •The inventory is written down to market on the B/S , and a loss is recognized in the I/S •No subsequent written – up is allowed	If Cost > NRV •The inventory should be written down to NRV on the B/S , and a loss is recognized in the I/S •Can be written up and a gain is recognized in the I/S

Inventory valuation: Example 3

- **The following information relates to Zoom Inc**
  - Original cost $210
  - Estimated selling price $225
  - Estimated selling cost $22
  - Replacement cost $197
  - Normal profit margin $12

  what are the per unit carrying value of Zoom's inventory under IFRS and U.S.GAAP
- **Answer**
  - Under IFRS
    - ✓NRV = $225 - 22 = $203
    - ✓Original cost = $210
    - ✓The carrying value should be the lower, i.e. $203 with a impairment loss of $7 immediately recognized in I/S
  - Under U.S.GAAP
    - ✓Replacement cost = $197
    - ✓NRV– normal profit margin = $203 - $12 = $191
    - ✓NRV = $203
    - ✓NRV– normal profit margin < Replacement cost < NRV
    - ✓Market = RC = $197
    - ✓The carrying value should be the lower i.e.$197 with a impairment loss of $13 immediately recognized in I/S

Inventory valuation: Example 4

- Zimt AG wrote down the value of inventory in 2007 and reversed the write-down in 2008. Compared to ratios calculated if the write-clown had never occurred, Zimt's reported 2007
  - A. current ratio was too high.
  - B. gross margin was too high
  - C. inventory turnover was too high.
- Answer：
  - C is correct.
    - The write-down reduced the value of inventory and increased cost of goods sold in 2007. The higher numerator and lower denominator mean that the inventory turnover ratio as reported was too high. Gross margin and the current ratio were both too low.

LIFO to FIFO Conversion

- **LIFO reserve**
  - The difference between the reported LIFO inventory carrying amount and the inventory amount that would have been reported if the FIFO method had been used.
  - LIFO reserve = FIFO inventory – LIFO inventory
- **LIFO to FIFO Conversion**
  - $INV_F = INV_L$ + LIFO reserve
  - $COGS_F = COGS_L$ - △ LIFO reserve
  - B/S:
    - ✓ Asset: $+LIFO_{Reserve}$,
    - ✓ +Equity: (retained earnings) $LIFO_{Reserve}^{0} \times (1-t_{past}) + \Delta LIFO_{Reserve} \times (1-t_{current})$
    - ✓ - Reduction in cash: $-LIFO_{Reserve}^{0} \times t_{past} - \Delta LIFO_{Reserve} \times t_{current}$
  - I/S: $+NI + \Delta LIFO_{Reserve} \times (1-t_{current})$
    - ✓ $\Delta LIFO_{Reserve} = LIFO_{Reserve}^{1} - LIFO_{Reserve}^{0}$

Example 1

- Sauerbraten Corp. reported 2007 sales ($ in millions) of $2,157 and cost of goods sold of $1,827. The company uses the LIFO method for inventory valuation and discloses that if the FIFO inventory valuation method had been used, inventories would have been $63.3 million and $56.8 million higher in 2007 and 2006, respectively. If Sauerbraten used the FIFO method exclusively, it would have reported 2007 gross profit closest to
  - A. $324.
  - B. $330.
  - C. $337.
- Answer：
  - C is correct. Under FIFO, cost of goods sold would be lower than LIFO by an amount equal to the increase in the LIFO reserve (in this case, $63.3 — $56.8 = $6.5). So, $1,827 — $6.5 = $1,820.5 meaning gross profit is $2,157 — $1,820.5 = $336.5.

Example 2

- Sauerbraten Corp. reported 2007 sales ($ in millions) of $2,157 and cost of goods sold of $1,827. Inventories at year-end 2007 and 2006, respectively, were $553 and $562. The company uses the LIFO method for inventory valuation and discloses that if the FIFO inventory valuation method had been used, inventories would have been $63.3 million and $56.8 million higher in 2007 and 2006, respectively. Compared to the inventory turnover ratio reported, if Sauerbraten had exclusively used the FIFO method its inventory turnover ratio would have been closest to
  - A. 2.96.
  - B. 3.28.
  - C. 3.49.
- Answer：
  - A is correct. Inventory turnover is cost of goods sold divided by average inventory. As reported, this was $1,827/$557.5 = 3.28. Under FIFO, cost of goods sold would have been $1,820.5 and inventory would have been $616.3 and $618.8 (average $617.6). Adjusted inventory turnover would thus be 2.96.

LIFO liquidation

- **LIFO liquidation**
  - A LIFO liquidation incurs when purchased volume is less sales volume. Or, the decrease in volume or quantity of inventory
  - In this case, the prices for goods being sold are no longer recent prices.
- **Under LIFO liquidation, and if price is rising**
  - COGS does not reflect current costs;
  - LIFO reserve may decline;
  - An analyst should adjust COGS for decrease in LIFO reserve.

LIFO & FIFO Conversion – Example 1

LIFO & FIFO Conversion

LIFO FIFO

- $INV_F = INV_L$ + LIFO reserve
- $COGS_F = COGS_L$ - change in the LIFO reserve

Example 1

An analyst gathered the following information about a company ($ million):

	2002	2003
Sales	234.9	283.5
Year-end inventory (LIFO)	53.7	81.4
LIFO reserve	21.8	36.4
Cost of goods sold (LIFO)	167.3	203.9

(If) Using the FIFO inventory method instead of LIFO, would the company's **2003** gross profit margin and current ratio, respectively, be higher or lower?

Gross profit margin using FIFO	Current ratio using FIFO
A. Lower	Higher
B. Higher	Lower
C. Higher	Higher

Answer: C.

InvF = InvL + LIFO reserve = 81.4 + 36.4 = 117.8;

COGSF = COGSL - (LIFO reseveE - LIFO reserveB) = 203.9-(36.4-21.8)=189.3

Gross profit margin under LIFO = (283.5-203.9)/283.5=28.08%; under FIFO=(283.5-189.3)/283.5=33.23%.

Current ratio under FIFO is higher than LIFO because FIFO has higher inventory level than LIFO.

LIFO & FIFO – Example 2

Example 2

A company uses LIFO inventory valuation and has a 40 percent marginal tax rate. The company reports an increase in the LIFO reserve of $5,000 for the year. If the company had used FIFO instead of LIFO, the amount reported for

A. net income would be $3,000 higher
B. net income would be $5,000 higher
C. cost of goods sold would be $3,000 higher

Answer:

Answer: A

Using FIFO , cost of goods sold would be $5,000 lower and income before taxes $5,000 higher:
$5,000 (1 -tax rate) = $3,000 increase in net income using FIFO.

LIFO & FIFO – Example 3

- An adjustment to operating income for the effects of a change in LIFO reserves will most likely be required if the change in the LIFO reserve is the result of:
  - A. price declines.
  - B. price increases.
  - C. a decrease in the number of units held in inventory.
- Answer: C (LIFO liquidation)

Inventory adjustments

Inventory valuation method

- **U.S.GAAP:**
  - upward ⟶ × , downward ⟶ √ Reversal prohibited
- **IFRS**
  - Lower of cost or NRV
  - NRV = sales price-selling cost
  - inventory can be written up but only limited to the loss recognized previously
- **U.S.GAAP**
  - Lower of cost or market
  - NRV-normal profit margin < market (replacement cost) < NRV
  - no write-up allowed under U.S.GAAP and no reversal after devaluation
- One exception is the inventories of producers of agricultural and forest products, producers of miners and mineral products can be measured at net realizable value

Inventory adjustments – Example 1

- 1. B Inc. sells digital cameras. Per-unit cost information pertaining to B's inventory is as follows:

Original cost	$ 210
Estimated selling price	$ 225
Estimated selling costs	$ 22
Net realizable value	$ 203
Replacement cost	$ 197
Normal profit margin	$ 12

- What are the per-unit carrying values of B's inventory under IFRS and under U.S. GAAP?
- Answer :
  - Under IFRS, inventory is reported on the balance sheet at the lower of cost or net realizable value. Since original cost of $ 210 exceeds net realizable value ($ 225 - $ 22 = $ 203), the inventory is written down to the net realizable value of $ 203 and a $ 7 loss ($ 203 net realizable value - $ 210 original cost) is reported in the income statement.
  - Under U.S. GAAP, inventory is reported at the lower of cost or market. In this case, market is equal to replacement cost of $ 197, since net realizable value of $ 203 is greater than replacement cost, and net realizable value minus a normal profit margin ($ 203 - $ 12 = $ 191) is less than replacement cost. Since original cost exceeds market (replacement cost) , the inventory is written down to $ 197 and a $ 13 loss ($ 197 replacement cost - $ 210 original cost) is reported in the income statement ·

Inventory adjustments – Example 2

- 2. Eric's Used Bookstore prepares its financial statements in accordance with U.S. GAAP. Inventory was purchased for $1 million and later marked down to $550,000. However, one of the books was later discovered to be a rare collectible item, and the inventory is now worth an estimated $3m.

  The inventory is most likely reported on the balance sheet at

  - A. $550,000.
  - B. $1,000,000.
  - C. $3,000,000.

- Answer: A. Under U.S. GAAP, inventory is carried at the lower of cost or market value. After being written down a new cost basis is determined and further revisions may only reduce the value further.

Inventory adjustments – Example 3

- 3. Fernando's Pasta purchased inventory and later wrote it down, though the current realizable value is higher than the value when written down. Fernando's inventory balance will most likely be

  - A. higher if it complies with IFRS.
  - B. higher if it complies with U.S. GAAP.
  - C. the same under U.S. GAAP and IFRS.

- Answer： A. IFRS permit the reversal of inventory write-downs, U.S. GAAP does not.

Inventory management

- **How effectively a firm is managing its inventory**
  - Ratio analysis - Affected by the choice of inventory cost flow method
    - ✓ Inventory changes - Changes in accounting policy

From other methods to LIFO	Other changes
Prospective application	**Retrospective application**
Explain / Demonstrate the change is preferable **(result in reliable and more relevant information)**	

  - Disclosure in footnotes – Useful in facilitating comparisons with other firms or industry average

Inventory disclosure*

- **Similar under U.S. GAAP and IFRS**
  - The **cost flow method**
  - The carrying value of inventory (**B/S**)
  - The cost of inventory recognized as an expense (**COGS**)
  - The amount of inventory **write downs**
  - The **reversal** of inventory write downs → **IFRS only**

Inventory Changes

- A firm can change inventory cost flow methods although rare.
  - In most cases, the change is made retrospectively:
    - ✓ The prior years' financial statements are recast based on the new cost flow method.
    - ✓ The cumulative effect of the change is reported as an adjustment to the beginning retained earnings of the earliest year presented.
  - Under IFRS
    - ✓ the firm must demonstrate that the change will provide reliable and more relevant information.
  - Under U.S. GAAP
    - ✓ the firm must explain why the change in cost flow method is preferable.
- An exception to retrospective application applies when a firm changes to LIFO from another cost flow method. In this case, the change is applied prospectively; no adjustments are made to the prior periods. With prospective application, the carrying value of inventory under the old method simply becomes the first layer of inventory under LIFO in the period of the change.

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Capitalize or Expense**
   - Capitalizing interest
2. **Tangible assets**
   - Measurement *
   - Depreciation *
3. **Intangible assets**
   - Measurement
   - Amortization
4. **Other measurement points for assets**
   - Impairment *
   - Revaluation
5. **De recognition of assets**
6. **Disclosure** *
7. **Leasing**

Capitalize or Expense

<table>
<tr><td rowspan="4">Spending Expenditure</td><td rowspan="4">Future economic benefit is probable ?</td><td rowspan="3">Yes</td><td rowspan="3">Recognize assets in the balance sheet , while the effects will flow to the income statement over the asset's useful life</td><td colspan="2">Inventory</td><td>Go to I/S when the inventory is sold Cost of goods sold</td></tr>
<tr><td rowspan="2">Non current assets</td><td>Tangible assets</td><td>Depreciation expense over useful life</td></tr>
<tr><td>Intangible assets</td><td>Amortization expense over useful life</td></tr>
<tr><td>No</td><td>Recognize Expenses in the income statement when incurred</td><td colspan="2">e.g.
•selling expense
•general expense
•administrative expense</td><td>Affect NI thus R/E</td></tr>
</table>

Capitalize or Expense

- **How to treat *an expenditure* depending on the *nature of the expenditure***
  - Capitalize as an asset on the **B/S**;

  or
  - Recognize as an expenses in the **I/S**;

- **Remember: The asset you** capitalized today **will be** expensed in the future.

Impact on the Cash flow statement:

- **Capitalized expenditures** are classified as **CFI**
- **Expensed expenditures** are classified as **CFO**

Capitalize or Expense

F/S	Items	Capitalizing	Expensing
B/S & ratios	**Total assets**	**Higher**	**Reverse**
	Shareholders' equity	**Higher**	
	Leverage ratios (debt/equity & debt/assets)	**Lower**	
I/S & ratios	**Income volatility**	**Lower**	
	Net income – first year (ROA & ROE)	**Higher**	
	Net income – later years (ROA & ROE)	**Lower**	
CFS	Total cash flow	same	Same
	Cash flow from operating	**Higher**	**Reverse**
	Cash flow from investing	**Lower**	

Capitalizing Interest

- **Under U.S.GAAP and IFRS**
  - When a firm constructs an asset for its own use or resale, the interest that accrues during the construction period must be capitalized as a part of the asset's cost (depreciation or COGS; IFRS: net interest expense, US GAAP no reduction)

Items / Impacts	Interest expense	Income statement impacts	Net Income	Interest coverage ratio	CFI	CFO
First Year	No interest expense	no	Higher	Higher? the same?	Understate	Overstate
Later Years		Depreciation expense	Lower	Lower		

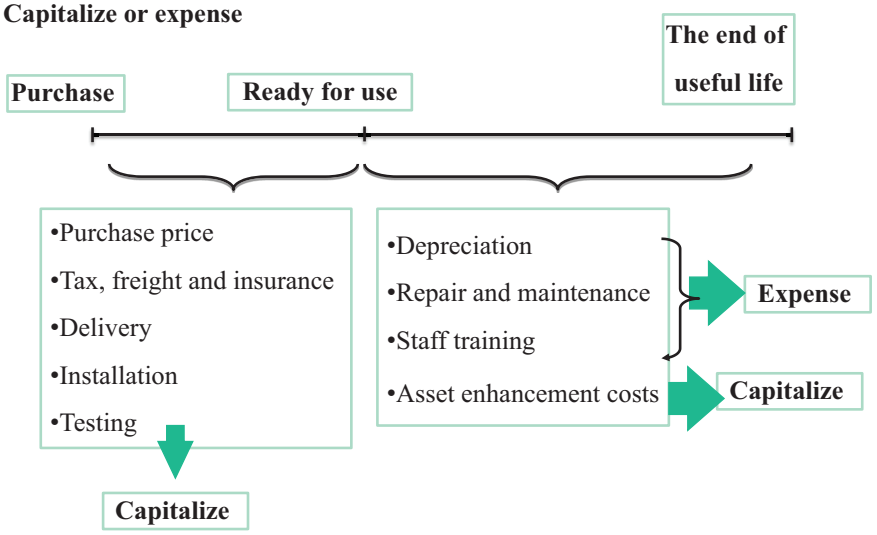
  - Implications for analysis

Treat as normal interest

i.e. interest expense charged to I/S directly, and classified as part of CFO

Tangible assets*

Capitalize or expense



Tangible assets*

- 1. JOOVI Inc. has recently purchased and installed a new machine for its manufacturing plant. The company incurred the following costs:

Purchase price	**$12,980**
Freight and insurance	**$1,200**
Installation	**$700**
Testing	**$100**
Maintenance staff training cost	**$500**

The total cost of the machine to be shown on JOOVI's balance sheet is closest to:

A. $14,180
B. $14,980.
C. $15,480.

- Answer:

B is correct.

- Only costs necessary for the machine to be ready for use can be capitalized, therefore, total capitalized costs = 12,980 + 1,200 + 700 + 100 = $14,980.

Tangible assets

	Measurement	
	Historical costs	**Carrying value**
Also called:	•The gross investment in the assets	•The carrying amount •The net book value •The book value •The ending net investment in assets
Measurement	•Initial measurement •Purchase price •Tax, freight and insurance •Delivery •Installation •Testing	Subsequent measurement Equals to Historical costs → Cost model – accumulated depreciation – accumulated impairment losses or *Revaluation (IFRS only)* → *Revaluation model*

Depreciation

- **Depreciation**
  - Depreciation is the systematic allocation of an asset's cost over time. Two important terms are:
    - ✓ Carrying (book) value. The net value of an asset or liability on the balance sheet. For property, plant, and equipment, carrying value equals historical cost minus accumulated depreciation.
    - ✓ Historical cost. The original purchase price of the asset including installation and transportation costs. Historical cost is also known as *gross investment in the asset.*
    - ✓ Depreciation is a real and significant operating expense. Even though depreciation doesn't require current cash expenditures (the cash outflow was made in the past when the asset was purchased), it is an expense nonetheless and cannot be ignored.
- The analyst must decide whether the reported depreciation expense is more or less than *economic depreciation,* which is the actual decline in the value of the asset over the period.
- Depreciating the rental assets by a greater amount during the first year would have better approximated economic depreciation and reduced reported income.

Depreciation

Depreciation		
Straight-Line	Accelerated Depreciation	Units – of – production
SL depreciation expense = $\frac{\text{cost} - \text{residual value}}{\text{useful life}}$	*Double – declining* balance(DDB) DDB depreciation in year X = (2/asset life in years)× net book value at the beginning of year X	$\frac{\text{original cost - salvage value}}{\text{life in output units}} \times$ output units in the period

Example 1

- Miguel Rodriguez of MARIO S.A., an Uruguayan corporation, is computing the depreciation expense of a piece of manufacturing equipment for the fiscal year ended 31 December 2009. the equipment was acquired on 1 January 2009. Rodriguez gathers the following information:

Cost of the equipment	$1,200,000
Estimated residual value	$200,000
Expected useful life	8 years
Total production capacity	800,000 units
Production in FY2009	135,000 units

Calculate the depreciation expense recognized in the income statement for FY2009 using three depreciation methods.

- **Answer:**

Depreciation		
Straight-Line	DDB	Units – of – production
$\frac{\$1,200,000 - \$200,000}{8 \text{ years}}$ = $125,000 p.a.	2/8 × $1,200,000 = $300,000	($1,200,000 - $200,000) × (135,000 units / 800,000 units) = $168,750

Depreciation

Depreciation impacts in early years	Straight line	Accelerated (DDB)
Depreciation expense	**Lower**	**Reverse**
Net income	**Higher**	
Assets	**Higher**	
Equity	**Higher**	
ROA	**Higher**	
ROE	**Higher**	
Total asset turnover ratios	Lower	Higher
Cash flow – Tax	Same	Same

Depreciation

- **The choice of useful life and residual value / salvage value**
  - **longer** useful life & **higher** residual value
    - ✓ **Lower** depreciation expense and **higher** net income
  - Relevant accounting treatments

Depreciation expense can be allocated to		
Cost of goods sold (COGS)	**Or**	**Selling , general and administration expense (SG&A)**
Affect GP Margin		**Affect OP margin**

	U.S. GAAP	IFRS
Residual /Salvage value	**Down ward only**	**Allowed to adjust the estimated residual value either upward or down ward**
Component depreciation*	**Rarely used**	**Required**

Intangible Assets

- **Long – term assets without *physical substance***

Identifiable IA	Unidentifiable IA	Internally generated
•**Can be purchased separately** •**e.g. Patents, Trademarks, Copyright purchased externally** •**Some have** a finite useful life and **others have** an indefinite useful life	•**Cannot be purchased separately and may have** an indefinite life •**e.g. Goodwill**	•Cannot be capitalized **on B/S** •**e.g. Research and Development cost under U.S. GAAP**
Capitalized on the B/S		•**Expensed** as incurred

IA with a finite UL – Amortization over UL (SL, Zero salvage value)

IA with an indefinite UL - Annual impairment test

Intangible Assets

Type of Expenditure	IFRS	U.S.GAAP
Research	**Expense as incurred**	
Development	**Capitalize if certain criteria are met**	**Expense as incurred** **Except for :** **·Costs to develop a software** •For sales to others •Expensed as incurred. •Once economic feasibility is established, subsequent production costs can be capitalized. •For own internal use •Expense until it is probable that the project will be completed and that the software will be used as intended. Thereafter, Capitalized

Intangible assets

	Measurement	
	Historical costs	**Carrying value**
Also called:	•The gross investment in the assets	•The carrying amount •The net book value •The book value •The ending net investment in assets
Measurement	initial measurement Equals to The original purchase price	Subsequent measurement Equals to Historical costs → Cost model – accumulated amortization – accumulated impairment losses or *Revaluation (IFRS only)* → *Revaluation model*

Impairment of assets

Tangible assets	Intangible assets
•Held for use **Impairment indicators** ⬇ **Impairment test**	•Held for use **Goodwill** **&** **Other IA with indefinite useful life** ⬇ **Annual impairment test**
•Held for sale No depreciation Immediate impairment test If **Carrying value > NRV**	•Held for sale No amortization Immediate impairment test If **Carrying value > NRV**

Impairment of assets – U.S. GAAP

- **Step1 Recoverability test / Impairment test**

$$\begin{pmatrix}\text{carrying}\\ \text{value}\\ \text{of assets}\end{pmatrix} > \begin{pmatrix}\text{undiscounted}\\ \text{future cash flows}\\ \text{generated by}\\ \text{the assets}\end{pmatrix}$$

- **Step2 Loss measurement**

$$\begin{pmatrix}\text{carrying}\\ \text{value}\\ \text{of assets}\end{pmatrix} - \begin{pmatrix}\text{fair market value}\\ \text{or}\\ \text{PV of future CF}\end{pmatrix}$$

Impairment of assets – IFRS*

$$\begin{pmatrix}\text{carrying}\\ \text{value}\\ \text{of assets}\end{pmatrix} > \begin{pmatrix}\text{Recoverable}\\ \text{amount}\end{pmatrix}$$

The higher **of**	
Fair value less cost to sell	Value in use **i.e. the present value of its future cash flow from continued use**

Example 2*

- **The following information is relating to the equipment owned by company B:**
  - Original cost $900,000
  - Accumulated depreciation $100,000
  - Expected future cash flow $825,000
  - Fair value $790,000
  - Value in use $785,000
  - Selling cost $30,000

Assuming company B will continue to use the equipment in the future, test the asset for impairment under U.S. GAAP and IFRS

Example 2*

- **Answer**
  - U.S.GAAP
    - ✓Carrying value = $900,000 - $100,000 = $800,000
    - ✓Expected future cash flow = $825,000
    - ✓Since Carrying value < Expected future cash flow, the equipment is not impaired
    - ✓The B/S value of the equipment remains at $800,000
  - IFRS
    - ✓Carrying value = $900,000 - $100,000 = $800,000
    - ✓Fair value less cost to sell = $790,000 - $30,000 = $760,000
    - ✓Value in use = $785,000
    - ✓Recoverable amount = $ 785,000
    - ✓Since Carrying value > recoverable amount, the equipment is impaired
    - ✓The B/S value of the equipment is reduced to $785,000 with a impairment loss of $15,000 recognized in the income statement.

Impairment of assets

- **Once an asset is written down**
  - **Under U.S.GAAP**
    - ✓Held for use → recoveries are not allowed
    - ✓Held for sale → recoveries are allowed
  - **Under IFRS**, recoveries are allowed except for goodwill

Impairment of assets

Impairment Effects	
Cash flow	**No effect**
Assets	Decrease
Equity	Decrease
Debt/equity ratio	Increase
Current net income, ROA,ROE	Decrease
Future depreciation expense	Decrease
Future net income, ROA,ROE	Increase
Future asset turnover ratios	Increase

Revaluation of assets

U.S. GAAP	IFRS
Cost model	**Cost model & Revaluation model**

Permit upward revaluation of assets

- **Upward revaluation of assets will**
  - **Increase** assets and equity,
    - → **Decrease** leverage ratios (D/E)
  - **Increase** comprehensive income in the period the revaluation occurs
  - In subsequent periods,
    - ✓Higher depreciation expense and lower profitability
    - ✓Lower ROA and ROE

De-recognition of assets

- **long-lived asset is** sold: **difference between the sale proceeds and the carrying value of the asset is reported as a G/L, included in income statement**
- **long-lived asset is** abandoned**: carrying value is removed from the B/S, loss is recognized in income statement**
- **long-lived asset is** exchanged**: G/L is computed by comparing the book value of the old asset with the fair value of the old asset (or fair value of new asset).**

Disclosure *

IFRS	U.S.GAAP
•*Basis for measurement (HC or FV)* •Depreciation rate/ Useful lives •Accumulated deprecation and carrying value	•Depreciation methods used •Depreciation expense •Accumulated depreciation and carrying amount of major classes of assets
If revaluation model •*Revaluation date* •*Determination of fair value* •*Carrying value using cost model*	

Disclosure *

IFRS	U.S.GAAP
For impaired assets •Amount of impairment loss •*Amount of reversal of impairment loss* •Where to recognize in I/S •Circumstances that cause the impairment loss or reversal	For impaired assets •A description of impaired assets •Amount of impairment loss •How to determine •Where to recognize in I/S •Circumstances that cause the impairment loss
For intangible assets •Similar •*Finite or indefinite use lives*	For intangible assets •Similar •*An estimate of amortization expense of next five years*

Investment property

- **Investment property**
  - Under IFRS, property that a firm owns for the purpose of collecting rental income, earning capital appreciation, or both, is classified as investment property.
    - ✓A firm generally must use the same valuation model (cost or fair value) for all of its investment properties.
    - ✓If a fair value for the property can be established reliably, the firm could use a **cost model** or **a fair value model** when valuing investment property,
  - U.S. GAAP does not distinguish investment property from other kinds of long-lived assets.

Investment property

- **The cost model**
  - The cost model for investment property is the same as the cost model for valuing property, plant, and equipment,
- **The fair value model**
  - The fair value model is different from the revaluation model we described earlier.
    - ✓Under the revaluation model, any revaluation above historical cost is recognized as revaluation surplus in owners' equity.
    - ✓For investment property, however, revaluation above historical cost is recognized as a gain on the income statement.

Investment property

Transfer To or From Investment Property (Fair Value Model)

Transfer From	Transfer To	Financial Statement Treatment
Owner-occupied	Investment property	Treat as revaluation: recognize gain through I/S only if it reverses previously recognized loss
Inventory	Investment property	Recognize gain or loss if fair value is different from carrying amount
Investment property	Owner-occupied or inventory	Fair value of asset at date of transfer will be its cost under new classification

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Framework

1. **Current tax & Deferred tax**
2. **Terminology for taxation**
3. **B/S approach to deferred tax issue**
   - Identify Accounting base and Tax base for a B/S item
   - Calculating temporary difference and deferred tax asset or liability
4. **Measurement**
5. **Analysis**

Current and deferred tax

- **Example 1**

  A firm may use different depreciation methods for:

  - Financial reporting

	year 1	2	3	4	5	total
revenue	600,000	600,000	600,000	600,000	600,000	**3,000,000**
other expense	-300,000	-300,000	-300,000	-300,000	-300,000	**-1,500,000**
depreciation expense	-100,000	-100,000	-100,000	-100,000	-100,000	**-500,000**
profit before tax	200,000	200,000	200,000	200,000	200,000	**1,000,000**
income tax expense 30%	60,000	60,000	60,000	60,000	60,000	**300,000**
profit for the year	140,000	140,000	140,000	140,000	140,000	**700,000**

  - Tax reporting

	year 1	2	3	4	5	total
revenue	600,000	600,000	600,000	600,000	600,000	**3,000,000**
other expense	-300,000	-300,000	-300,000	-300,000	-300,000	**-1,500,000**
tax depreciation	-220,000	-132,000	-80,000	-50,000	-18,000	**-500,000**
taxable profit	80,000	168,000	220,000	250,000	282,000	**1,000,000**
tax payable 30%	24,000	50,400	66,000	75,000	84,600	**300,000**
net profit	56,000	117,600	154,000	175,000	197,400	**700,000**

Temporary difference

Current and deferred tax

- **Example 1 (Continued)**

I/S	Year 1	Year 2	Year 3	Year 4	Year 5
Income tax expense	**60,000** =	**60,000** =	**60,000** =	**60,000** =	**60,000** =
Current tax expense	**24,000** +	**50,400** +	**66,000** +	**75,000** +	**84,600** +
Deferred tax expense / (Income)	**36,000**	**9,600**	**(6,000)**	**(15,000)**	**(24,600)**

Tax department

B/S Deferred tax liability

B/S	Year 1	Year 2	Year 3	Year 4	Year 5
Deferred tax liability	**36,000**	*(36,000 + 9,600)* **45,600**	*(45,600 – 6,000)* **39,600**	*(39,600 - 15,000)* **24,600**	*(24,600 – 24,600)* -

Tax Return Terminology

- **Taxable income:** Income subject to tax based on the tax return.
- **Taxes payable:** The tax liability on the balance sheet caused by taxable income. This is also known as current tax expense, but do not confuse this with income tax expense (see below).
- **Income tax paid:** The actual cash flow for income taxes including payments or refunds from other years.
- **Tax loss carry forward:** A current or past loss that can be used to reduce taxable income (thus, taxes payable) in the future. Can result in a deferred tax asset.
- **Tax base:** Net amount of an asset or liability used for tax reporting purposes.

Financial Reporting Terminology

- **Accounting profit.:** Pretax financial income based on financial accounting standards. Also known as income before tax and earnings before tax.
- **Income tax expense:** Expense recognized in the income statement that includes taxes payable and changes in deferred tax assets and liabilities (DTA and DTL). The income tax expense equation is:

  income tax expense = taxes payable + △ DTL - △DTA
- **Deferred tax liabilities:** Balance sheet amounts that result from an excess of income tax expense over taxes payable that are expected to result in future cash outflows.
- **Deferred tax assets:** Balance sheet amounts that result from an excess of taxes payable over income tax expense that are expected to be recovered from future operations. Can also result from tax loss carryforwards.
- **Valuation allowance:** Reduction of deferred tax assets based on the likelihood the assets will not be realized.
- **Carrying value:** Net balance sheet value of an asset or liability.

Terminology

Tax reporting		Financial reporting	
Taxable income =	**Taxable revenues - Tax deductible expenses**	**Pretax income (Accounting profit)**	**Earning before tax (EBT)**
Taxes payable =	**Taxable income x tax rate.** Current tax expense in I/S	**Income tax expense =**	Current tax expense +/- Deferred tax expense or income
Income tax paid =	**Actual cash flow paid for income tax** Cash outflow for tax in CFS	**Deferred tax expense /(income)**	**Relating to two B/S items** Deferred tax liability (DTL) **Or** Deferred tax asset (DTA)

Terminology

- **Timing difference**
  - **Temporary difference**
    - ✓ Difference will reverse

Deferred tax assets	Deferred tax liabilities
***B/S amounts* that result from an excess of tax payable over income tax expense that are expected to be recovered from future operations.**	***B/S amounts* that result from an excess of income tax expense over taxes payable that are expected to result in future cash outflows.**
$\begin{pmatrix}\text{taxes}\\ \text{payable}\end{pmatrix} > \begin{pmatrix}\text{income tax}\\ \text{expense}\end{pmatrix}$	$\begin{pmatrix}\text{taxes}\\ \text{payable}\end{pmatrix} < \begin{pmatrix}\text{income tax}\\ \text{expense}\end{pmatrix}$

  - **Permanent difference**
    - ✓ Difference will not reverse, thus **no deferred tax** issues

B/S approach to Deferred tax issue

- **Differences between the treatment of an accounting item for tax reporting and for financial reporting can occur when:**
  - The timing of revenue and expense recognition in the income statement and the tax return differ.
  - Certain revenues and expenses are recognized in the income statement but never on the tax return or vice-versa.
  - Assets and/or liabilities have different carrying amounts and tax bases.
  - Gain or loss recognition in the income statement differs from the tax return.
  - Tax losses from prior periods may offset future taxable income.
  - Financial statement adjustments may not affect the tax return or may be recognized in different periods.

B/S approach to Deferred tax issue

- **Two steps for Deferred tax**
  - Step 1 Identify DTL and DTA through a B/S approach,
  - Step 2 Calculate deferred tax expense
- **B/S approach**
  - Identify ***Accounting base*** and ***Tax base*** for **every asset and liability item on B/S**
  - Calculate the difference between two bases
    - For assets =
      accounting base – tax base
    - For liabilities =
      (- accounting base) – (- tax base)

•Positive figure * tax rate = DTL
• Negative figure * tax rate = DTA

Accounting Base & Tax Base - Assets

- **Example 2**

Assets with and original Cost of $1,000,000

Accounting depreciation (depreciation expense) = $100,000 p.a.

Tax depreciation = $ 200,000 p.a.

	Accounting base	-	Tax base	=	Temporary difference	×	Tax rate	=	DTL in B/S
Year 1	900,000	-	800,000	=	100,000	×	30%	=	30,000
Year 2	800,000		600,000		200,000	×	30%	=	60,000

I/S income tax expense		B/S DTL	
Year 1	Year 2	Year 1	Year 2
30,000	30,000	30,000	60,000

Accounting Base & Tax Base - Assets

- An asset's tax base **is the amount that will be deducted (expensed) on the tax return in the future as the economic benefits of the asset are realized.**
- **Depreciable NCA**
  - Accounting base → Original cost – accumulated accounting depreciation
  - Tax base → Original cost – accumulated tax depreciation
- **R&D**
  - Accounting base (Expensed as incurred) → Zero
  - Tax base (Capitalized)→ Original cost - accumulated amortization
- **A/R**
  - Accounting base → Invoiced amount – allowance for bad debt
  - Tax base → Invoiced amount (do not recognize allowance)
- **Financial assets (for Trading and AFS financial assets held at Fair value)**
  - Accounting base → Fair value
  - Tax base →Amortized cost

Accounting Base & Tax Base - Liabilities

- **Example 3**

Customer advanced = 10,000 → Dr Cash 10,000

Cr Unearned revenue 10,000

Accounting base	-	Tax base	=	Temporary difference	×	Tax rate	=	DTA in B/S
-10,000	**-**	**0**	**=**	**-10,000**	**×**	**30%**	**=**	**3,000**

I/S income tax expense	B/S DTA
(3,000)	3,000

Accounting Base & Tax Base - Liabilities

- **Customer advance**
  - Accounting base (accrual accounting)→ Unearned revenue treat as a Liability
  - Tax base (cash accounting) →Revenue is recognized no liability arise → Zero
- **Warranty liability**
  - Accounting base (accrual accounting) →A liability is recognized for future obligation
  - Tax base (cash accounting) → Recognize a expense when a cash outflow incurred → Zero
- **Financial liabilities – Note payable (for Trading and AFS financial liability held at Fair value)**
  - Accounting base → Fair value
  - Tax base →Amortized cost

Deferred tax

- **Example 4: A company incurs a capital expenditure that may be amortized over five years for accounting purposes, but over four years for tax purposes. The company will most likely record**

  A. a deferred tax asset.

  B. a deferred tax liability.

  C. no deferred tax asset or liability.

- **Answer:**

  B is correct.

  - The difference is temporary, and the tax base will be lower (because of more rapid amortization) than the carrying value of the asset. The result will be a deferred tax liability.

Deferred tax

- **Example 5: When accounting standards require an asset to be expensed immediately but tax rules require the item to be capitalized and amortized, the company will most likely record**

  A. a deferred tax asset.

  B. a deferred tax liability.

  C. no deferred tax asset or liability.

- **Answer:**

  A is correct.

  - The capitalization will result in an asset with a positive tax base and zero carrying value. The amortization means the difference is temporary Because there is a temporary difference on an asset resulting in a higher tax base than carrying value, a deferred tax asset is created.

Measurement

- Income tax expense = Current tax expense +/ - Deferred tax expense / income

Taxable income x **Current tax rate**

△DTL Or △DTA

  - **The ending balance of DTL or DTA** is calculated at the end of each fiscal year, the net △ amount during current fiscal year
    - ✓ **Tax rate applicable to the periods in which the DTA and DTL will be reversed** (*forecast*).
    - ✓ Usually the current tax rate

Measurement

- **Tax rate changes**
- **Effective tax rate**
- **Reversal of temporary difference**

Tax rate changes

- **If tax rate changes:**
  - New DTA or DTL = old DTA or DTL $\times \frac{\text{new tax rate}}{\text{old tax rate}}$

A change in accounting estimate

- The change in DTA and DTL due to the tax rate changes will be part of the current year △DTA and △DTL, and will impact the income tax expense for the year the changes take place.

Tax rate changes

Example 6: Carnation Corporation had a deferred tax liability of $30,000 on January 1,2002 that is expected to reverse in 2004. In 2002, Carnation generated pretax financial income of $300,000 and taxable income of $150,000 due to a difference in depreciation. The tax rate for 2002 is 30% but Congress enacted a reduction in tax rates effective January 1, 2003 to 25%, Carnation's income tax expense for 2002 is closest to:

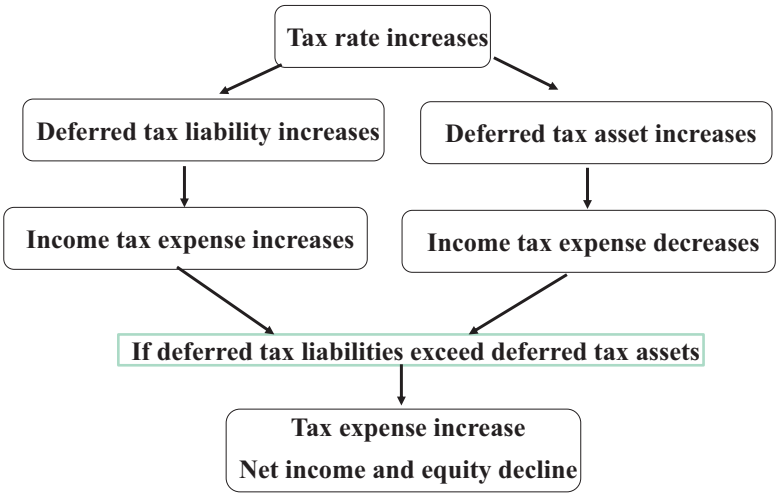
A. $75,000.
B. $77,500.
C. $82,500.

Answer

B is correct

- Current tax expense = 150,000 × 30% = 45,000
- Temporary difference balance at the end of 2002
  = 30,000 / 30% + 150,000 = 250,000
- Deferred tax expense = 250,000 × 25% -30,000 = 62,500 – 30,000 = 32,500
- Income tax expense = 45,000 + 32,500 = 77,500

Tax rate changes



Effective tax rates

$$\text{effective tax rate} = \frac{\text{income tax expense}}{\text{pre - tax income (EBT)}}$$

Reversal of temporary difference

- Treatment of DTL
  - If unlikely to be reversed
    - ✓Treated as equity
  - If to be reversed
    - ✓Treated as true liability
  - If non-reversal/ reversal is uncertain
    - ✓Ignored
- Treatment of DTA
  - If <50% probability to be reversed
    - ✓Valuation allowance is created

$$DTA' = DTA - \begin{pmatrix}\text{valuation}\\ \text{allowance}\end{pmatrix}$$

asset ↓ &income ↓

Compare a company's deferred tax items.

- A deferred tax liability results from using accelerated depreciation for tax purposes and straight-line depreciation for the financial statements. The analyst should consider the firm's growth rate and capital spending levels when determining whether the difference will actually reverse.
- Impairments generally result in a deferred tax asset since the writedown is recognized immediately in the income statement, but the deduction on the tax return is generally not allowed until the asset is sold or disposed of.
- Restructuring generates a deferred tax asset because the costs are recognized for financial reporting purposes when the restructuring is announced, but not deducted for tax purposes until actually paid. Note that restructuring usually results in significant cash outflows (net of the tax savings) in the years after the restructuring costs are reported.

Compare a company's deferred tax items.

- In the United States, firms that use LIFO for their financial statements are required to use LIFO for tax purposes, so no temporary differences result. However, in countries where this is not a requirement, temporary differences can result from the choice of inventory cost-flow method.
- Post-employment benefits and deferred compensation are both recognized for financial reporting when earned by the employee but not deducted for tax purposes until actually paid. These can result in a deferred tax asset that will be reversed when the benefits or compensation are paid.
- A deferred tax adjustment is made to stockholders' equity to reflect the future tax impact of unrealized gains or losses on available-for-sale marketable securities that are taken directly to equity. No DTL is added to the balance sheet for the future tax liability when gains/losses are realized.

Analyze disclosures relating to deferred tax items

- **Following deferred tax information is disclosed:**
  - Deferred tax liabilities, deferred tax assets, any valuation allowance, and the net change in the valuation allowance over the period.
  - Any unrecognized deferred tax liability for undistributed earnings of subsidiaries and joint ventures.
  - Current-year tax effect of each type of temporary difference.
  - Components of income tax expense.
  - Reconciliation of reported income tax expense and the tax expense based on the statutory rate.
  - Tax loss carryforwards and credits

Analyzing the Effective Tax Rate Reconciliation

- **Some firms' reported income tax expense differs from the amount based on the statutory income tax rate. The differences are generally the result of:**
  - Different tax rates in different tax jurisdictions (countries).
  - Permanent tax differences: tax credits, tax-exempt income, nondeductible expenses, and tax differences between capital gains and operating income.
  - Changes in tax rates and legislation.
  - Deferred taxes provided on the reinvested earnings of foreign and unconsolidated domestic affiliates.
  - Tax holidays in some countries (watch for special conditions such as termination dates for the holiday or a requirement to pay the accumulated taxes at some point in the future).

Analysis

Recognition

Issue	IFRS	U.S. GAAP
Revaluation of tangible and intangible assets	DTL or DTA The corresponding effects are recognized in equity.	Not applicable as revaluation is prohibited.

Measurement

Issue	IFRS	U.S. GAAP
Recognition of deferred tax assets	Deferred tax asset is recognized only for loss carried forward	Deferred tax asset is recognized in full but is then reduced by valuation allowance

Classification

Issue	IFRS	U.S. GAAP
Current/noncurrent	Non - current	either current or noncurrent, based on the classification of the related non-tax asset or liability for financial reporting.

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Bond

- **Bond Terminology**
  - The **face value**, also known as the maturity value or par value, is the amount of principal that will be paid to the bondholder at maturity. The face value is used to calculate the coupon payments.
  - The **coupon rate** is the interest rate stated in the bond that is used to calculate the coupon payments.
  - The **coupon payments** are the periodic interest payments to the bondholders and are calculated by multiplying the face value by the coupon rate.
  - The **effective rate of interest** is the interest rate that equates the present value of the future cash flows of the bond and the issue price.
    - ✓ The coupon rate is typically fixed for the term of the bond.
    - ✓ The market rate of interest on a firm's bonds, however, will likely change over the bond's life, which changes the bond's market value as well.

Bond

- **Bond Terminology**
  - The **balance sheet liability** of a bond is equal to the present value of its remaining cash flows (coupon payments and face value), discounted at the market rate of interest at issuance.
    - ✓ At maturity, the liability will equal the face value of the bond.
  - The **interest expense** (also known as the book value or carrying value of the bond) reported in the income statement is calculated by multiplying the book value of the bond liability at the beginning of the period by the market rate of interest of the bond when it was issued.
  - At the date of issuance, the market rate of interest may be equal to, less than, or greater than the coupon rate.
    - ✓ When the market rate is equal to the coupon rate, the bond is a par bond (priced at face value).
    - ✓ When the market rate is greater than the coupon rate, the bond is a discount bond (priced below par).
    - ✓ When the market rate is less than the coupon rate, the bond is a premium bond (priced above par).

Bond

- **Bonds Issued at Par**
  - When a bond is issued at par, the bond's yield at issuance is equal to the coupon rate. In this case, the present value of the coupon payments plus the present value of the face amount is equal to the par value. The effects on the financial statements are straightforward:
    - ✓ **On the balance sheet**, assets and liabilities increase by the bond proceeds (face value). The book value of the bond liability will not change over the term of the bond.
    - ✓ **On the income statement**, interest expense for the period is equal to the coupon payment because the yield at issuance and the coupon rate are the same.
    - ✓ **On the cash flow statement**, the issue proceeds are reported as a cash inflow from financing activities and the coupon payments are reported as cash outflows from operating activities (under U.S. GAAP; they may be reported as CFO or CFF outflows under IFRS). At maturity, repayment of the face value is reported as a cash outflow from financing activities.

Bond

- **Bonds Issued at a Discount or Premium**
  - When the bond's yield at issuance is not equal to the coupon rate, the proceeds received (the present value of the coupon payments plus the present value of the face value) are not equal to par value. In this case, the bond is issued at a premium or a discount. The premium or discount at the issue date is usually relatively small for coupon bonds.
    - ✓ If the coupon rate is less than the bond's yield, the proceeds received will be less than the face value. The difference is known as a discount. The coupon rate is lower than the coupon rate that would make the market price of the bond equal to its par value. Investors will pay less than face value because of the lower coupon rate. Such bonds are known as discount bonds.
    - ✓ If the coupon rate is greater than the bond's yield, the bond price and the proceeds received will be greater than face value. We refer to such bonds as premium bonds. In this case, investors will pay more for the above-market coupon payments.

Bond

- **Bond**
  - Two types of cash flows
    - ✓ Periodic payment of Interest/ Coupon **CFO**
      - → ***Cash outflow*** from operating activities
    - ✓ Principal **CFF**
      - ■ Amount received at issuance
        - →***Cash inflow*** from financing activities
      - ■ Principal repayment at maturity
        - →***Cash outflow*** from financing activities

Analysis :

•Bond issue price (par, discount or premium)

→ Makes the difference on CFO & CFF

Example 1

- **A zero coupon bond issued on 1 Janurary 2001 with 4 years to maturity and a redemption price of $100, the market interest rate at the time of issuance is 8%.**

$\frac{\$100}{1.08^4}$ $\$73.5030\times8\%$ $\frac{\$100}{1.08^3} = \$73.5030+\$5.8802$

	Beginning Book value 1st Jan	Interest expense 8%	Coupon payment	Ending Book value 31st Dec
Year 2001	**73.5030**	**5.8802**	**0**	**79.3832**
Year 2002	**79.3832**	**6.3507**	**0**	**85.7339**
Year 2003	**85.7339**	**6.8587**	**0**	**92.5926**
Year 2004	**92.5926**	**7.4074**	**0**	**100**

Example 1

Cash inflow

CFF

	Beginning Book value 1st Jan	Interest expense 8%	Coupon payment	Ending Book value 31st Dec
Year 2001	**73.5030**	**5.8802**	**0**	**79.3832**
Year 2002	**79.3832**	**6.3507**	**0**	**85.7339**
Year 2003	**85.7339**	**6.8587**	**0**	**92.5926**
Year 2004	**92.5926**	**7.4074**	**0**	**100**

?

Cash outflow

CFF

Example 1

Cash inflow

CFF

	Beginning Book value 1st Jan	Interest expense 8%	Coupon payment	Ending Book value 31st Dec
Year 2001	**73.5030**	**5.8802**	**0**	**79.3832**
Year 2002	**79.3832**	**6.3507**	**0**	**85.7339**
Year 2003	**85.7339**	**6.8587**	**0**	**92.5926**
Year 2004	**92.5926**	**7.4074**	**0**	**100**

CFO cash outflow

Cash outflow

CFF

Example 2

- **On 31 Dec 2002, a company issued a three – year 10% annual coupon bond with a face value of $1000**
  - Market interest rate at issuance is 10%
  - Market interest rate at issuance is 8%
  - Market interest rate at issuance is 12%

What is the effect on B/S, I/S, CFS?

Example 2

- Market interest rate at issuance is 10% = Coupon rate → Issue at **par**

	Beginning BV 1st Jan	Interest expense 10%	Coupon	Ending BV 31st Dec
Year 2003	**1000**	**100**	**(100)**	**1000**
Year 2004	**1000**	**100**	**(100)**	**1000**
Year 2005	**1000**	**100**	**(100)**	**1000**

- ✓ **B/S**: The bond liability **remains at face value** over the life of the bond
- ✓ **I/S**: Interest expense = Coupon payment = $100
- ✓ **CFS**: CFO **cash outflow** → $100 p.a. = Coupon payment
  CFF **cash inflow** → $1000 on 31st Dec 2002 = Issue price
  cash outflow →$ 1000 on 31st Dec 2005 = Redemption price

Example 2

- Market interest rate at issuance is 8% < Coupon rate 10%→ Issue at **premium**

	Beginning BV 1st Jan	Interest expense @ 8%	Coupon @ 10%	Ending BV 31st Dec
Year 2003	**1051.54**	**84.12**	**(100)**	**1035.66**
Year 2004	**1035.66**	**82.85**	**(100)**	**1018.52**
Year 2005	**1018.52**	**81.48**	**(100)**	**1000**

- ✓ **B/S**: the bond liability will **decrease towards the face value** over the life of the bond
  i.e. **Amortize the premium** in issuance **to zero** over the life of the bond
- ✓ **I/S**: Interest expense < Coupon payment
  i.e. The amortization of premium will reduce the interest expense shown on I/S
  $\text{int. expn}_t = \text{coupon-prem. amortization}_t$

Example 2

- **CFS**: CFO **Cash outflow** = **Coupon payment** → $100 p.a.
  - ✓ **For analysis purpose**, the interest expense and the amortization of the premium should be separated
    e.g. Year 2003

Cash outflow	Original CFO		CFO for F/A		CFF for F/A
	100	=	84.12	+	15.88

  - ✓ Without adjustment
    - CFO is **understated** and CFF is **overstated**

Accounting for premium bond

Premium bond			
Time	B/S		I/S
T=0	Cash 1000	Bond payable 1000 UBP* 51.54	
T=1	Cash -100	UBP -15.88	Interest expense -84.12
T=2	Cash -100	UBP -17.15	Interest expense -82.85
T=3	Cash -100 Cash -1000	UBP -18.52 Bond payable -1000	Interest expense -81.48
*UBP: Unamortized bond premium			

Example 3

- **A bond with maturity of 3-year, the coupon rate 10% (annul payment), the market rate is 12%**
- **Price of bond when issuing:**

$$BV_0 = \frac{100}{(1+12\%)^1} + \frac{100}{(1+12\%)^2} + \frac{100+1000}{(1+12\%)^3} = 951.96$$

- **3N 100PMT 1000FV 12 I/Y CPT PV -951.96**

$$\begin{aligned}
&For\ \text{the}\ 1^{st}\ \text{year}: \\
&INT_1 = BV_0 \times r_m = 951.96 \times 12\% = 114.24 \\
&PMT_1 = 100 \\
&PRN_1 = PMT_1 - INT_1 = 114.24 - 100 = -14.24 \\
&BV_1 = BV_0 - PRN_1 = 951.96 - (-14.24) = 966.20
\end{aligned}$$

Accounting for discount bond

$$\begin{aligned}
&For\ \text{the}\ 2^{nd}\ \text{year}: \\
&INT_2 = BV_1 \times r_m = 966.20 \times 12\% = 115.94 \\
&PMT_2 = 100 \\
&PRN_2 = PMT_2 - INT_2 = 115.94 - 100 = -15.94 \\
&BV_2 = BV_1 - PRN_2 = 966.20 - (-15.94) = 982.14
\end{aligned}$$

$$\begin{aligned}
&For\ \text{the}\ 3^{rd}\ \text{year}: \\
&INT_3 = BV_2 \times r_m = 982.14 \times 12\% = 117.86 \\
&PMT_3 = 100 \\
&PRN_3 = PMT_3 - INT_3 = 117.86 - 100 = -17.86 \\
&BV_3 = BV_2 - PRN_3 = 982.14 - (-17.86) = 1000
\end{aligned}$$

Graph explanation for discount bond

Discount bond			
Time	B/S		I/S
T=0	Cash 1000 UBD* 51.54	Bond payable 1000	
T=1	Cash -100 UBD* -14.24		Interest expense -114.24
T=2	Cash -100 UBD* -15.94		Interest expense -115.94
T=3	Cash -100 UBD* -17.86 Cash -1000	Bond payable -1000	Interest expense -117.86
*UBD: Unamortized bond discount			

Example 3

- CFS: CFO Cash outflow = Coupon payment → $100 p.a.
  - ✓ For analysis purpose, the interest expense and the amortization of the discount should be separated
    - Year 2003

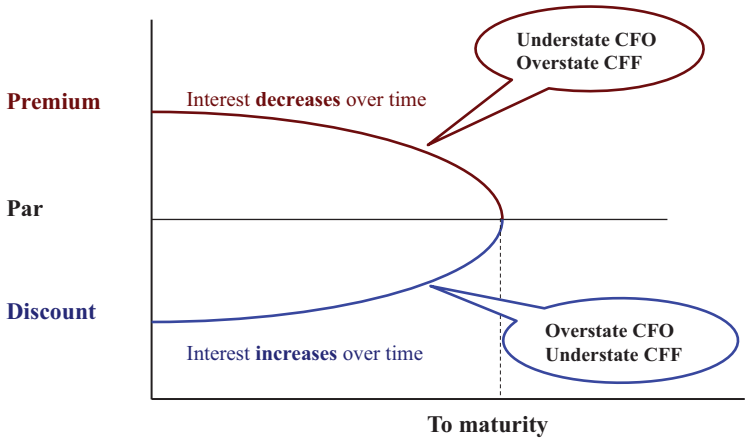
Cash outflow/ inflow	Original CFO		CFO for F/A		CFF for F/A
	100	=	**114.24**	-	**14.24**

  - ✓ Without adjustment
    - CFO is overstated and CFF is understated

Cash inflow

Summary

Carrying value of bond on B/S



Summary

- **Par bond (Coupon rate = Market interest rate at issuance)**
  - **B/S** : Bond liability = Face value /Par value of bond
  - **I/S** : Interest expense = coupon payment

$$\text{Interest expense} = \begin{pmatrix}\text{market rate}\\ \text{at issue}\end{pmatrix} \times \begin{pmatrix}\text{balance sheet value of}\\ \text{liability at beginning of period}\end{pmatrix}$$

  - **CFS**
    - ✓CFO = ***Coupon payment*** (= Interest expense)

Cash outflow

    - ✓CFF =Amount ***received*** and par value ***paid*** at expiration

Cash inflow

Cash outflow

Summary

- **Premium or discount bond**
  - **B/S** $\text{liability}_0 = \text{amount received}$

$$\text{liability}_t = \sum \frac{\text{all pay}_t}{\text{MR}_{\text{issue}}}$$

    - ✓The amount of premium and discount is **amortized over the time**.
  - I/S
    - ✓Premium (Coupon rate > Market rate) → **Decrease over time**

$$\text{int. expn}_t = \text{coupon-prem. amortization}_t$$

    - ✓Discount (Coupon rate < Market rate) → **Increase over time**

$$\text{int. expn}_t = \text{coupon+disc. amortization}_t$$

  - CFS : **No change** for accounting /**Adjust** for F/A purpose

Bond

- **Example 4: Innovative Inventions, Inc. needs to raise $10 million and typically would issue coupon-bearing bonds at par value. If the company chooses to issue zero-coupon bonds instead, its debt-to-equity ratio will**

  A. rise as the maturity date approaches.

  B. decline as the maturity date approaches.

  C. remain constant throughout the life of the bond.

- **Answer:**

  A is correct.

  - Both bonds will add $10 million to debt and nothing to equity, and thus have the same effect on the debt/equity ratio at the time they are issued.
  - However, the value of the liability for zero-coupon bonds increases as the discount is amortized over time while the liability will not change for the par bonds.
  - Furthermore, the amortized interest will reduce earnings at an increasing rate over time as the value of the liability increases.
  - Higher relative debt and lower relative equity (through retained earnings) will cause the debt/equity ratio to increase as the zero-coupon bonds approach maturity, compared to the bonds issued at par.

Other points of debt

- **Issue costs***
- **Fair value reporting option***
- **De recognition of debt**
- **Debt covenant**
- **Disclosure of debt**

Issuance costs*

- Effective interest rate method
  - Using the effective interest rate method, interest expense is equal to the book value of the bond liability at the beginning of the period, multiplied by the bond's yield at issuance.
    - ✓ For a **premium bond**, interest expense is less than the coupon payment (yield < coupon rate). The difference between interest expense and the coupon payment is the **amortization of the premium**. The premium amortization is subtracted each period from the bond liability on the balance sheet. Thus, interest expense will decrease over time as the bond liability decreases.
    - ✓ For a **discount bond**, interest expense is greater than the coupon payment (yield > coupon rate). The difference between interest expense and the coupon payment is the **amortization of the discount**. The amortization of the discount each period is added to the bond liability on the balance sheet. Therefore, interest expense will increase over time as the bond liability increases.

Issuance costs*

- **Zero-coupon bonds**
  - A zero-coupon bond, also known as a pure-discount bond, is issued at a discount from its par value and its annual interest expense is implied, but not explicitly paid. The actual interest payment is included in the face value that is paid at maturity.
    - ✓ Zero-coupon bonds make no periodic interest payments.
    - ✓ The effects of zero-coupon bonds on the financial statements are qualitatively the same as any discount bond, but the impact is larger because the discount is larger.
- **Issuance Costs**
  - Issuing a bond involves legal and accounting fees, printing costs, sales commissions, and other fees.
    - ✓ Under U.S. GAAP, issuance costs are capitalized as an asset (deferred charge) and allocated to the income statement as an expense over the term of the bond.
    - ✓ Under IFRS, the initial bond liability on the balance sheet is reduced by the amount of issuance costs, increasing the bond's effective interest rate. In effect, issuance costs are treated as unamortized discount.
    - ✓ Under both U.S. GAAP and IFRS, bond issuance costs are usually netted against the bond proceeds and reported on the cash flow statement as a financing cash flow.

Issuance costs*

- **Example 5**

  Company C issued a $1 million bond for $980,000 with an issuance cost of $5,000.

U.S.GAAP	IFRS
Assets: Cash $975,000 Deferred charge $5,000	**Assets:** Cash $975,000
Liabilities: Bond $980,000	**Liabilities:** Bond $975,000

Fair value reporting option*

- **Fair Value Reporting Option**
  - Recall that the book value of a bond liability is based on its market yield at issuance. As long as the bond's yield does not change, the bond liability represents fair (market) value.
  - If the yield changes, the balance sheet liability is no longer equal to fair value.
- **An *increase* in the bond's yield will result in a *decrease* in the fair value of the bond liability.**
- **Conversely, a decrease in the bond's yield increases its fair value. Changes in yield result in a divergence between the book value of the bond liability and the fair value of the bond.**
- **The fair value of the bond is the economic liability at a point in time.**

Fair value reporting option*

- **Bond value = A present value of future cash flows**

$$BV=\sum \frac{(Int+Princ)_t}{(1+R_0)^t}$$

$$MV=\sum \frac{(Int+Princ)_t}{(1+R_t)^t}$$

- **U.S. GAAP & IFRS**
  - **A option to report** debt at its market /fair value with any gains/losses reported in the Income statement
  - **For analysis**, the market value is more appropriate

Fair value reporting option*

- **Example 6: Fairmont Golf issued fixed rate debt when interest rates were 6 percent. Rates have since risen to 7 percent. Using only the carrying amount based on historical cost reported on the balance sheet to analyze the company's financial position would most likely cause an analyst to:**

  A. overestimate Fairmont's economic liabilities

  B. underestimate Fairmont's economic liabilities

  C. underestimate Fairmont's interest coverage ratio

- **Answer**

  A is correct

  - When interest rate rise, bonds decline in value. Thus the carrying amount of the bonds being carried on the balance sheet is higher than the market value. The company could repurchase the bonds for less than the carrying amount, so the economic liabilities are overestimated. Because the bonds are issued at a fixed rate, there is no effect on interest coverage.

Derecognition of Debt

- **A firm may choose to redeem bonds before maturity**
  - Possible reasons
    - ✓Interest rates reduction
    - ✓Firm has generated surplus cash through operation
    - ✓Funds from the issuance on the equity market is available
  - A gain or loss is recognized in I/S

Derecognition of Debt

- Example 7

  A firm reacquires $1 million face value bonds at 102% of par when the carrying value of the bond liability is $995,000

  Answer

  Losses = $1,020,000 - $995,000 = $25,000 recognize in I/S

  Under U.S. GAAP, any unamortized issuance costs must be written off and included in the gain or loss calculation

Debt Covenant

- **Debt covenants**
  - **Debt covenants** are restrictions imposed by the lender on the borrower to protect the lender's position.
  - Debt covenants can reduce default risk and thus reduce borrowing costs.
  - The restrictions can be in the form of affirmative covenants or negative covenants.
- With affirmative covenants, **the borrower promises to do certain things, such as:**
  - Make timely payments of principal and interest.
  - Maintain certain ratios (such as the current, debt-to-equity, and interest coverage ratios) in accordance with specified levels.
  - Maintain collateral, if any, in working order.
- With negative covenants, **the borrower promises to refrain from certain activities that might adversely affect its ability to repay the outstanding debt, such as:**
  - Increasing dividends or repurchasing shares.
  - Issuing more debt.
  - Engaging in mergers and acquisitions.

Debt Covenant

- **Debt covenants**
  - Restrictions on the issuer that protect the bondholder's interests.
  - Reduce default risk and thus borrowing costs.
- **Examples**
  - Dividend payments and share repurchases
  - Mergers & Acquisition

  } Usage of cash
  - Sale & leaseback and disposal of certain assets
  - Issuance of new debt in the future

  } Asset ↓ liability ↑

Disclosure of debt

- **The** nature **of the liabilities**
- **The** maturity date
- **The** interest rate **(Stated and effective)**
- Restriction **imposed by lenders**
- Assets pledged **as security**
- **The amount of debt maturing in each of the next five years**

Management discussion and analysis (Quantitative and qualitative)

Framework for Lease

1. **Classification of leases under U.S. GAAP & IFRS***
2. **Lease accounting**
   - Lessee
   - Lessor
3. **Disclosure of lease***
4. **Solvency ratio**

Classical example of lease

- **A four-year financial lease， with the annual payment of $1000, interest rate is 10%. How to report the financial lease when**

  a. the rental is paid in the beginning of the year

  b. the rental is paid in the end of the year

Classification of leases

- **A** lease **is a contractual arrangement where by the** lessor **, the owner of the asset , allows the** lessee **to use the asset for a specified period of time *(lease term)* in return for periodic *lease payment.***
  - Two partied involved in leases
    - ✓Lessee： use the asset
    - ✓Lessor： owner of the asset
- **Two types of leases (Classification)**
  - **Operating lease**
    - ✓An operating lease is essentially a rental arrangement. No asset or liability is reported by the lessee and the periodic lease payments are simply recognized as rental expense in the income statement.
  - **Finance lease / Capital lease (U.S.)**
    - ✓A finance lease is, in substance, a purchase of an asset that is financed with debt. Accordingly, at the inception of the lease, the lessee will add equal amounts to both assets and liabilities on the balance sheet. Over the term of the lease, the lessee will recognize depreciation expense on the asset and interest expense on the liability.

Classification of leases – IFRS*

Finance lease	Operating lease
Transfers from lessor to lessee **substantially all the risks and rewards incidental to ownership** of an asset. No specific condition for finance lease, but use finance lease when meeting one of the following conditions: ① Title transfer ② Bargain purchase option ③ The lease term is for the major part of the economic life of the asset ④ At the inception of the lease the present value of the minimum lease payments amounts to at least substantially all of the fair value of the leased asset ⑤ A specialized nature	**A lease** other than a finance lease**.**

Classification of leases – U.S.GAAP*

Finance lease	Operating lease
A lease transaction can be classified as a Finance lease **by** lessee **if meet at least one of the following criteria:** ①The title to the leased asset is transferred to the lessee at the end of the lease period. ②A bargain purchase option exists. ③The lease period is at least 75% of the asset's economic life. ④The present value of the lease payments is equal to or greater than 90% of the fair value of the leased asset.	**A lease not meeting any of those criteria is classified as an** Operating lease

Accounting for lease - Lessee

	Finance Lease	Operating Lease
B/S-**inception**	Leased asset = Lease liability = PV of Minimal lease payment (MLP) •**MLP = Future lease payment over lease term**	No effect
B/S-**periodic payment**	**Leased asset → Depreciation over lease term** **Lease liability → interest expense & principal repayment**	
I/S-**periodic payment**	**An** interest expense **is separated from the lease payment and recognized in the income statement.**	**Lease payment is recognized as** a rental expense **in I/S**
Cash Flow	**Principal repayment – CFF** **Interest expense - CFO**	**CFO**

Example 7

- **GF leases a machine for its own use for 4 years with annual payments of 1000 paid in arrears ; The appropriate interest rate on the lease is 10%.**

  Calculate the impact of the lease on GF' balance sheet and income statement for each of the 4 years, including the immediate impact.

  Assuming GF depreciates all assets on SL basis.

Example 7

- B/S **is affected by** Finance lease only
- **At the inception of the lease**
  - Leased asset = lease liability =3169.8654=3170

    N=4, I/Y=10, PMT=1000, FV=0, CPT PV -3168.8654 -3170
- **Over the lease term**
  - Leased asset → annual depreciation (SL) i.e. 3170 / 4years =792.5 p.a.
  - Lease liability → separate Interest expense & Lease payment

Calculation process

For the 1st year:

$INT_1 = BV_0 \times r_m = 3170 \times 10\% = 317$

$PMT_1 = 1000$

$PRN_1 = PMT_1 - INT_1 = 1000 - 317 = 683$

$BV_1 = BV_0 - PRN_1 = 3170 - 683 = 2487$

For the 2nd year:

$INT_2 = BV_1 \times r_m = 2487 \times 10\% = 248.7 \approx 249$

$PMT_2 = 1000$

$PRN_2 = PMT_2 - INT_2 = 1000 - 249 = 751$

$BV_2 = BV_1 - PRN_2 = 2487 - 751 = 1786$

Accounting for finance lease of lessee

T=0

B/S

Asset leased 3170	Lease obligation
	Current 683
	Long-term 2487

T=1

B/S

Asset leased 3170	Lease obligation
	Current 683
	Long-term 2487
A.D. -792.50	
Cash -1000.00	Amortization -683

I/S

Depr. Exps. -792.50

Interest Exps. -317

Interest Exps.=BV0 × interest rate=3167 × 10%=317

Amortization=Payment-Interest Exps.=1000-317=683

Comparison between finance and operating lease

Capital lease			Operating lease
Depreciation expense	**Interest expense**	**Total expense**	**Lease expense**
792.50	317	**1109.5**	**1000**
792.50	249	**1041.5**	**1000**
792.50	174	**966.5**	**1000**
792.50	91	**883.5**	**1000**
3170	**830.00 =4000-3170**	**4000**	**4000**

Comparison of CF between finance and operating

	Operating lease	Finance lease		
Year	**CFO**	**CFO**	**CFF**	**Total CF**
1	**1,000**	**317**	**683**	**1,000**
2	**1,000**	**249**	**751**	**1,000**
3	**1,000**	**174**	**826**	**1,000**
4	**1,000**	**91**	**910**	**1,000**
Total	**4,000**			**4,000**
	Rental Stable p.a.	**Interest expense** Decreasing	**Lease payment - interest expense** Increasing	Rental Stable p.a.

Effect on Financial statements

		Finance lease	Operating lease
B/S	Assets	Higher	Reverse
	Liabilities	Higher	
I/S	EBIT	Higher	
	Net income in early years	Lower	
	Net income in later years	Higher	
	Total net income	Same	Same
CFS	CFO	Higher	Reverse
	CFF	Lower	
	Total CF	Same	Same

Effect on ratios

	Finance lease	Operating lease
Current ratio (↑ Current liab)	Lower	Reverse
Working capital (↑ Current liab)	Lower	
Asset turnover (↑ Asset)	Lower	
ROA (in early years) (↓ Net income)	Lower	
ROE	Lower	
Debt/asset (↑Liab)	Higher	
Debt/equity(↑Liab)	Higher	

Classification of lease - Lessor

Lessee		Lessor
•Operating lease	→	•Operating lease
•Finance lease	Two additional conditions are not satisfied →	•Operating lease
	Two additional conditions are satisfied →	•Capital lease •If manufacturer, sales-type lease •If for financing, direct-financing lease

➢**From the lessor's perspective**

●**Under U.S. GAAP,** a capital lease is treated as either a *sales-type* lease or a *direct financing* lease.

- ✓If the present value of the lease payments exceeds the carrying value of the asset, the lease is treated as a ***sales-type lease***.
- ✓If the present value of the lease payments is equal to the carrying value, the lease is treated as a ***direct financing lease***.

●**Under IFRS,** does not distinguish between a sales-type lease and a direct financing lease.

- ✓However, similar treatment to a sales-type lease is allowed under IFRS for finance leases originated by manufacturers or dealers. In this case, the present value of the lease payments likely exceeds the carrying value of the asset.

Classification of lease - Lessor

- **Two conditions to be satisfied:**
  - The collectivity of lease payments is reasonably certain.
  - The lessor has substantially completed performance.

Sales-type lease

- Sales-type lease
  - A sales-type lease is treated as if the lessor sold the asset for the present value of the lease payments and provided a loan to the buyer in the same amount.
  - Sales-type leases are typical when the lessor is a manufacturer or dealer because the cost (balance sheet value) of the leased asset is usually less than its fair value.
- **At the** inception of the lease
  - the lessor recognizes a sale equal to the present value of the lease payments
  - cost of goods sold equal to the carrying value of the asset
  - the difference between the sales price and cost of goods sold is gross profit.
- In the cash flow statement
  - the interest portion of the lease payment is reported as an inflow from operating activities, and the principal reduction is reported as an inflow from investing activities, just as with an amortizing loan.

Example 8 – Sales-type lease with salvage

- GF leases a machine to an oil company for 4 years with annual lease payments of 1,000 in arrears. It cost GF $3,000 to produce the machine.
- At the end of the lease, the lessor regains possession of the asset, which will be sold for scrap value of $600. The collectability of the lease payments is predictable, and there are no significant uncertainties about GF' unreimbursable costs. The implicit rate on the lease is 10%.

PV of the lease payments	**?**
PV of salvage value	**?**
COGS	**?**
Profit for the sale	**?**
Lease receivable	**?**

Example 8 – Sales-type lease with salvage

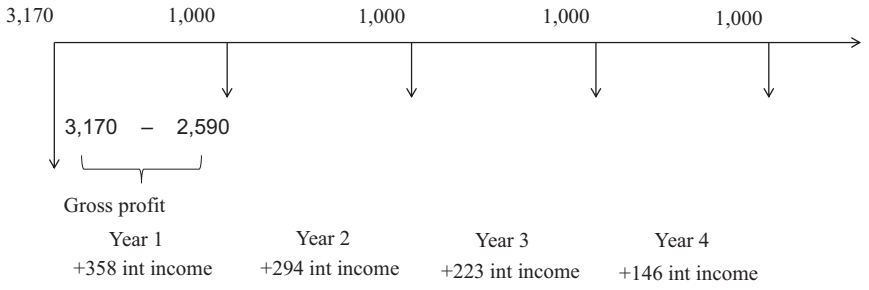
- The PV of lease payment = 3,170 (previous example) = FV of leased asset
- The PV of salvage value =600/1.1^4=410
- The Cost of goods sold = 3,000 - 410 = 2,590
- The profit on the sales = 3,170 – 2,590 = 580
- Lease receivable = 3,170+410 = 3,580

Both use 10% as discount rate

I/S
CFO ↑
CFI ↓

Asset on the B/S
i.e. lease receivable

Example 8 – Sales-type lease with salvage



- For sales-type lease
  - Only the first year recognized a 580 gross profit
  - The following years only have interest income
  - So, total income is 1,600, which consists of 580 gross profit and 1,020 interest income, but if we exclude salvage value 600…

Example 8 – Sale-type lease with salvage

Year	Beginning	Lease Payment Received	Interest income 10%	Reduction of Lease Receivable	Lease Receivable
1	3,580	1,000	358	642	2,938
2	2,938	1,000	294	706	2,232
3	2,232	1,000	223	777	1,455
4	1,455	1,000	146	854	600
Total		4,000	1,020		

Reduction of Lease Receivable =1000-358

PV of future lease payment and salvage value at the end of year 1
= 3,580-(1000-3580*10%)

Salvage value

Example 9 – Sales-type lease without salvage

- GF leases a machine to an oil company for 4 years with annual lease payments of 1,000 in arrears. It cost GF $3,000 to produce the machine.
- At the end of the lease, the lessor regains possession of the asset with zero salvage value. The collectability of the lease payments is predictable, and there are no significant uncertainties about GF' unreimbursable costs. The implicit rate on the lease is 10%.

PV of the lease payments	**?**
PV of salvage value	**?**
COGS	**?**
Profit for the sale	**?**
Lease receivable	**?**

Example 9 – Sales-type lease without salvage

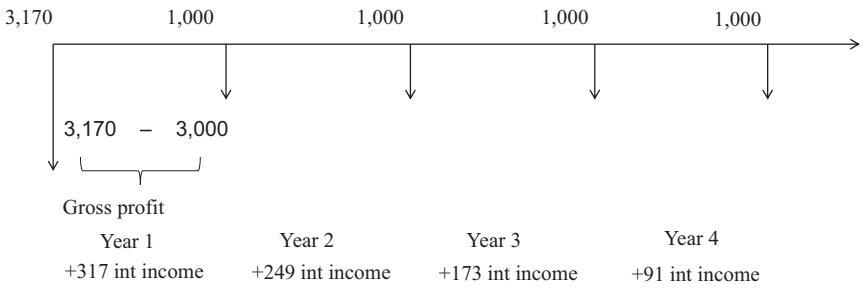
- **The PV of lease payment = 3,170 (previous example) = FV of leased asset**
- **The PV of salvage value =0**
- **The Cost of goods sold = 3,000-0 = 3,000**
- **The profit on the sales = 3,170 – 3,000 = 170**
- **Lease receivable = 3,170 +0= 3,170**

Both use 10% as discount rate

I/S
CFO ↑
CFI ↓

Asset on the B/S
i.e. lease receivable

Example 9 – Sales-type lease without salvage



- For sales-type lease
  - Only the first year recognized a 170 gross profit
  - The following years only have interest income
  - So, total income is 1000, which consists of 170 gross profit and 830 interest income, without salvage value …

Example 9 – Sales-type lease without salvage

Year	Beginning	Lease Payment Received	Interest Income 10%	Reduction of Lease Receivable	Receivable
1	3,170	1,000	317	683	2,487
2	2,487	1,000	249	751	1,736
3	1,736	1,000	173	827	909
4	909	1,000	91	909	0
Total		4,000	830		

Reduction of Lease Receivable= 1000-317

PV of future lease payment and salvage value at the end of year 1

= 3,170-(1000-3170*10%)

Salvage value

Direct financing lease

- **Direct financing lease**
  - In a direct financing lease, no gross profit is recognized by the lessor at the inception of the lease.
- **At the inception of the lease**
  - the lessor removes the asset from its balance sheet and creates a lease receivable in the same amount. As the lease payments are received, the principal portion of each payment reduces the lease receivable.
- **In the income statement**
  - the lessor recognizes interest income over the term of the lease. The interest portion of each lease payment is equal to the lease receivable at the beginning of the period multiplied by the interest rate.
- **In the cash flow statement**
  - the interest portion of the lease payment is reported as an inflow from operating activities and the principal reduction is reported as an inflow from investing activities.

Example 10 – Direct financing lease

- Follow the example 9, however, the GF leases a machine to an oil company for 4 years with annual lease payments of $1,000 in arrears. The salvage value is zero. It cost GF $3,170 to purchase the machine.
- At the end of the lease, the lessor regains possession of the asset .The collectability of the lease payments is predictable, and there are no significant uncertainties about GF' unreimbursable costs. The implicit rate on the lease is 10%.

PV of the lease payments	**?**
PV of salvage value	**?**
COGS	**?**
Profit for the sale	**?**
Lease receivable	**?**

Example 10 – Direct financing lease

- The PV of lease payment = 3,170 (previous example) = FV of leased asset
- The PV of salvage value =0
- The Cost of goods sold = 3,170
- The profit on the sales = 3,170 – 3,170 = 0 (Present value of lease payment is equal to the cost of goods sold, the lease is treated as direct financing lease)
- The lease receivable = 3,170+0=3,170

Both use 10% as discount rate

Asset on the B/S

i.e. lease receivable

Example 10 – Direct financing lease

- Lease receivable: IRR=10%

Reduction of Lease Receivable =1000-317

Year	Beginning	Lease Payment Received	Interest Income 10%	Reduction of Lease Receivable	Lease Receivable
1	3,170	1,000	317	683	2,487
2	2,487	1,000	249	751	1,736
3	1,736	1,000	173	827	909
4	909	1,000	91	909	0
Total		4,000	830		

PV of future lease payment and salvage value at the end of year 1

= 3,170-(1000-3170*10%)

Salvage value

Accounting for lease - Lessor

	Sales-type lease	Direct-financing lease
At inception- I/S	•Sales = PV of MLP (lease receivable) •Discount rate •= The interest rate implicit in the lease •COGS = Cost of assets – PV of salvage •Profit = Sales – COGS	No profit is recognized.
At inception- B/S	Lease receivable = PV of MLP + PV of salvage value	Lease receivable = cost of assets
Periodic - I/S	Interest revenue = r * Lease receivable at the beginning of the period	
At inception- Cash Flow	No effect	
Periodic - Cash Flow	CFO – inflow CFI – inflow	

Operating Lease

- Operating lease
  - If the lease is treated as an operating lease, the lessor simply recognizes the lease payment as rental income.
  - the lessor will keep the leased asset on its balance sheet and depreciate it over its useful life.
- **Total income over the life of the lease is the same for an operating lease and a direct financing lease.**
  - However, in the early years of the lease, the income reported from the direct financing lease is higher than the income reported from the operating lease.

Direct financing lease vs. operating Lease

- **Example：** following example 10, the GF leases a machine to an oil company for 4 years with annual lease payments of $1,000 in arrears. The salvage value is zero. It cost GF $3,170 to purchase the machine
- **As direct financing lease:**

Year	Beginning	Lease Payment Received	Interest Income 10%	Reduction of Lease Receivable	Lease Receivable
1	3,170	1,000	317	683	2,487
2	2,487	1,000	249	751	1,736
3	1,736	1,000	173	827	909
4	909	1,000	91	909	0
Total		4,000	830		

Reduction of Lease Receivable=1000-317

PV of future lease payment and salvage value at the end of year 1 = 3,170-(1000-3170*10%)

Salvage value

Direct financing lease vs. operating Lease

- **Example**
- **If the lease is treated as an operating lease.**

Direct financing lease		Operating lease		
year	Interest income	Rental income	Depreciation expense	Rental income net of depreciation expense
1	317	1,000	792.5	207.5
2	249	1,000	792.5	207.5
3	173	1,000	792.5	207.5
4	91	1,000	792.5	207.5
	$830			$830

Operating Lease

- **Example:**

	Direct Financing Lease		Operating Lease
Year	***CFO***	***CFI***	***CFO***
1	$317	$683	$1,000
2	249	751	1,000
3	173	827	1,000
4	91	909	1,000

- **Total cash flow is the same for an operating lease and a direct financing lease. However, cash flow from operations is higher with the operating lease. With a direct financing lease, the lease payment is separated into the interest portion (CFO) and principal portion (CFI).**

Off-balance sheet financing

- **Following is information for ABC Corp. in 20X1:**
  - Total assets $40 million
  - Total debt $20 million
  - Capital lease liability $3 million

	Capital Lease Payments	*Operating Lease Payments*
20X2	$2 million	$1.5 million
20X3	$2 million	$1.5 million
20X4	$2 million	$1.5 million
20X5	$2 million	$1.5 million
20X6	$2 million	$1.5 million
Beyond 20X6	$8 million	$4 million

- **Present value of capital leases: $7.184 million**
- **Estimate the present value of ABC's operating leases?**

Off-balance sheet financing

- ***Method 1: Assume operating leases have the same ratio of PV to payments as the firm's capital leases.***
  - A total of $18 million in capital lease payments and $11.5 million in operating lease payments are due in the future.
  - The ratio of the PV of ABC capital leases to its total future lease payments is $7.184 million / $18 million = 0.399.
  - Using this ratio, we can estimate the PV of their operating leases as 0.399 x $11.5 million = $4.589 million.

Off-balance sheet financing

- ***Method 2: Estimate discount rate for capital leases and apply it to operating leases.***
  - To calculate a single discount rate that would produce the reported PV of capital leases, we must make an assumption about the timing of capital lease payments beyond 20X6. The annual payments, together with the reported PV, can be used to estimate a discount rate to use when calculating the PV of the operating lease payments.
  - Some alternatives are as follows: all paid at the end of Year 6, or payments at the average of the prior five years until the obligation for future payments beyond 20X6 is met, spread evenly over some specific number of years.
  - All paid at the end of Year 6 ($8 million in Year 6)

    CF_0= -7.184; C_{01} = 2;F_{01} = 5; C_{02} = 8, F_{02}=1; CPT IRR = 26.43%.
  - Payments at the average of the prior five years($2 million in Years 6 to 9):

    CF_0-= -7.184; C_{01} = 2; F_{01} = 9; CPT IRR =23.75%.
  - Spread evenly over five years ($1.6 million in Years 6 to 10):

    CF_0 = -7.184; C_{01} = 2; F_{01} = 5; C_{02} = 1.6; F_{02} = 5; CPT IRR = 23.08%.

Off-balance sheet financing

- Note that the further in the future we assume the payments are made, the lower their discount rate given the PV.
- If we choose to assume that capital lease payments beyond 20X6 are spread evenly over five years ($1.6 million per year), we will use the discount rate 23.08%.
- Making the same assumption about lease payments beyond 20X6 for the operating leases ($800,000 per year for five years), we can calculate the PV of these payments, and, thus, the operating lease liability:

  I/Y = 23; CF_0 = 0; C_{01} = 1,500; F_{01} = 5; C_{02} = 800; F_{02} = 5; CPT NPV = 5,001.85
- This amount, $5.0 million, should be added to the firm's liabilities and assets (equity need not be adjusted) to better reflect the use of off-balance-sheet financing and to calculate solvency ratios such as debt-to-equity and debt-to-assets.

Disclosure of lease*

Lessee	Lessor
•General description of lease arrangement	
•The nature, timing , and amount of payments to be paid in the future	•The nature, timing , and amount of payments to be received in the future
•Amount of lease expense reported in the I/S	•Amount of lease revenue reported in the I/S
	•Amount of lease receivable/Unearned revenue
•Restriction imposed by the lease arrangement	

Solvency Ratios

- A firm's ability to pay long – term debt
- **Leverage**

Debt-to-equity ratio = D / E

Debt-to-capital= D/(D+ E)

Debt-to-assets = D / A

Financial leverage = A / E

- **Coverage**

Interest coverage = EBIT / Interest

Fixed charge coverage = (EBIT + lease payments) / (Interest + lease payments)

Framework for Pension plans*

- **A pension is a form of deferred compensation earned over time through employee service. The most common pension arrangements are defined contribution plans and defined benefit plans.**
  - Defined contribution plan
    - ✓A defined contribution plan is a retirement plan in which the firm contributes a sum each period to the employee's retirement account.
    - ✓The firm's contribution can be based on any number of factors, including years of service, the employee's age, compensation, profitability, or even a percentage of the employee's contribution.
  - Defined benefit plan
    - ✓In a defined benefit plan, the firm promises to make periodic payments to employees after retirement.
    - ✓The benefit is usually based on the employee's years of service and the employee's compensation at, or near, retirement.

Pension plans*

Defined contribution plans	Defined benefit plan
The employee assumes **all the investment** risk	**The** employer assumes **all the investment** risk

Employer paid the **contribution** during the employee service period

Employees receive **benefit** after retirement

Defined benefit plan*

IFRS & U.S.GAAP			
B/S	**$**	**I/S**	**$**
PV of obligation	**(X)**	**Interest cost**	**(X)**
FV of plan asset	**X**	**Current service cost**	**(X)**
Overfunding/(Underfunding)	**X/(X)**	**Expected return**	**X**
		Actuarial gain / (Loss)	X/(X)
		Total	**X/(X)**

Alternative treatment under IFRS			
B/S	**$**	**I/S**	**$**
PV of obligation	**(X)**	**Interest cost**	**(X)**
FV of plan asset	**X**	**Current service cost**	**(X)**
Overfunding/(Underfunding)	**X/(X)**	**Expected return**	**X**
Unrecognized actuarial (gain) / Loss	(X)/X	**Total**	**X/(X)**
Net asset /(Liability)	**X/(X)**		

Defined benefit plan*

- **3. Pehben corporation has a defined benefit pension plan. At 31 December, its pension obligation is $10 million , pension assets are $9 million and actuarial loss of $0.4 million. If Penben chooses to report under a method consistent with both IFRS and U.S. GAAP , the reporting on the balance sheet would be closest to which of the following?**

  A. $10 million is shown as a liability and $9 million appears as an asset

  B. $1 million is shown as a net pension obligation.

  C. $ 0.6 million is shown as a net pension obligation

- **Answer:**

  B is correct.

  - Under both IFRS and U.S. GAAP, a company can choose to report net pension obligation or asset.

F.R.A

- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- **SS10**
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

The quality of financial reports

- **The quality of financial reports** → Financial reporting quality; Earnings (results) quality

	Financial Reporting Quality Low	Financial Reporting Quality High
Earnings Quality **High** (Results)	LOW financial reporting quality impedes assessment of earnings quality and impedes valuation.	HIGH financial reporting quality enables assessment. HIGH earnings quality increases company value.
Earnings Quality **Low** (Results)		HIGH financial reporting quality enables assessment. LOW earnings quality decreases company value.

The quality of financial reports

- **Two basic points provide a basic conceptual framework to assess the quality of a company's financial reports and to locate the company's financial reports along the quality spectrum.**
  - The financial reports are GAAP-compliant and decision-useful.
  - The results (earnings) are high quality (adequate level of return)

Quality Spectrum of Financial Reports	Quality
GAAP, decision-useful, sustainable, and adequate returns	HIGH
GAAP, decision-useful, not sustainable, Low "earnings quality"	↓
Within GAAP, but biased choices	↓
Within GAAP, but "earnings management" (Real EM, Accounting EM)	↓
Non-compliant Accounting	↓
Fictitious transactions	LOW

The quality of financial reports

- GAAP refers generically to the generally accepted accounting principles or the accepted accounting standards of the jurisdiction under which the company reports. (IFRS,US GAAP)
- Decision-useful information embodies the characteristics of relevance and faithful representation.
- High-quality earnings provide an adequate level of return on investment (i.e., a return equal to or in excess of the cost of capital) and are sustainable.
- Biased accounting choices result in financial reports that do not faithfully represent economic phenomena. Choices are deemed to be "aggressive" if they increase the company's reported performance and financial position in the current period.
- Earnings management aims to understate earnings volatility, etc. Earnings volatility is decreased by understating earnings in periods when a company's operations are performing well and overstating in periods when the company's operations are struggling.

The quality of financial reports

- Reporting is compliant with GAAP and decision useful; earnings are sustainable and adequate.
- Reporting is compliant with GAAP and decision useful, but earnings are not sustainable or not adequate.
- Reporting is compliant with GAAP, but earnings quality is low and reporting choices and estimates are biased.
- Reporting is compliant with GAAP, but the amount of earnings is actively managed to increase, decrease, or smooth reported earnings.
- Reporting is not compliant with GAAP, although the numbers presented are based on the company's actual economic activities.
- Reporting is not compliant with GAAP and includes numbers that are essentially fictitious or fraudulent.

Aggressive and conservative accounting

- Conservative accounting: tend to decrease the company's reported earnings and financial position for the current period.
- Aggressive accounting: tend to increase the company's reported earnings and financial position for the current period.

Aggressive	Conservative
Capitalizing current period costs	Expensing current period costs
Longer estimates of the lives of depreciable assets	Shorter estimates of the lives of depreciable assets
Higher estimates of salvage values	Lower estimates of salvage values
Straight-line depreciation	Accelerated depreciation
Delayed recognition of impairments	Early recognition of impairments
Less accrual of reserves for bad debt	More accrual of reserves for bad debt
Smaller valuation allowances on deferred tax assets	Larger valuation allowances on deferred tax assets

Motivation for manipulation

- **Firms are motivated to manage**
  - Earnings / Net income

Overstate NI	Understate NI
• **Meet earnings expectation** • **Remain in compliance with debt covenants** • **Receive higher incentive compensation**	• **Obtain trade relief** • **Negotiate favorable repayment term from creditors** • **Negotiate favorable labor union contracts**

  - Balance sheet
    - ✓ Overstating Assets or understating Liabilities to appear *more solvent*

      e.g. Lower D/E ratio
    - ✓ Understating Assets or overstating Liabilities to *enhance its performance ratios*

      e.g. Higher ROA, ROE, Asset turnover ratio

Motivation for manipulation

- **Manipulation → A low quality earnings**
  - Selecting acceptable accounting principles that misrepresent the economics of transaction

    e.g. Using inappropriate depreciation method to enhance NI
  - Using aggressive or unrealistic estimate& assumption

    e.g. Lengthening the lives of depreciable assets or increasing the residual value
  - Structuring transactions to achieve a desired outcome

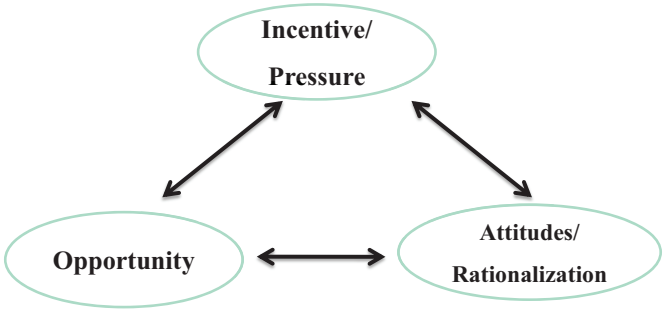
    e.g. Structuring the terms of lease to avoid capital lease recognition
  - Exploiting the intent of an accounting principle

    e.g. Applying a narrow rule to a board range of transaction

    (Unconsolidated special purpose entities SPE) — **Level II**

Fraud Triangle

Statement on Auditing Standards No. 99, *Consideration of Fraud in a Financial Statement Audit*



Incentives/Pressures 1/2

1. Threats to financial stability or profitability as a result of economic, industry, or firm conditions such as:
   - Intense competition or market saturation, along with declining margins.
   - Vulnerability to rapid changes in technology, rates of product obsolescence, or interest rates.
   - Declining customer demand or increasing business failures.
   - Operating losses that may result in bankruptcy, foreclosure, or a hostile takeover.
   - Recurring negative operating cash flow or inability to generate positive cash flow while reporting earnings or earnings growth.
   - Rapid growth or unusual profitability.
   - New accounting standards, laws, or regulatory requirements.

Incentives/Pressures 2/2

2. Excessive third-party pressures on management from:
   - Aggressive or unrealistic profitability or trend expectations.
   - Debt or equity financing requirements in order to stay competitive.
   - Stock exchange listing requirements.
   - Debt covenants and repayment requirements.
   - Impact of real or perceived effects of poor financial performance on a pending transaction, such as a business acquisition.
3. Personal net worth of management or the board of directors is threatened because of:
   - A significant financial interest in the firm.
   - A significant amount of contingent compensation based on achieving aggressive targets for stock price, operating profit, or cash flow.
   - Personal guarantees of the firm's debt.
4. Excessive pressure on management or operating personnel to meet internal financial goals, including sales and profitability targets.

Opportunities for fraud 1/2

- The nature of the firm's industry or operations might involve:
  - Significant related-party transactions, particularly when those parties are unaudited, or audited by another firm.
  - Ability to dictate terms and conditions to suppliers and customers that may result in transactions that are not at arm's length.
  - Significant estimates and judgments in accounting for assets, liabilities, revenues, and expenses.
  - Unusual or complex transactions, especially near year-end, such as transactions that present "substance over form" issues.
  - Operations that exist or transactions that occur internationally where cultures and business practices may differ.
  - Bank accounts or operations located in tax-havens without clear business justification.
- Ineffective management monitoring as a result of:
  - Management being dominated by a single person or small group.
  - Ineffective oversight by the board of directors or audit committee.

Opportunities for fraud 2/2

- A complex or unstable organizational structure as evidenced by:
  - Difficulty in determining who is in control.
  - Organizational structure that involves unusual legal entities or unusual lines of authority.
  - High turnover among management, legal counsel, or board members.
- Deficient internal controls that can result from:
  - Inadequate monitoring controls.
  - High turnover rates of accounting and information technology personnel.
  - Ineffective accounting and information systems.

Attitudes/Rationalizations 1/2

1. Inappropriate ethical standards or failure to effectively communicate or support a firm's ethical standards.
2. Excessive participation by nonfinancial management in the selection of accounting standards and the determination of estimates.
3. Known history or allegations of violations of laws and regulations by management or board members.
4. A management obsession with maintaining or increasing the firm's stock price or earnings trend.
5. Making commitments to third parties to achieve aggressive results.
6. Failing to correct known reportable conditions in a timely manner.

Attitudes/Rationalizations 2/2

7. Inappropriately minimizing earnings for tax purposes.
8. Management's continued use of materiality as a basis to justify inappropriate or questionable accounting methods.
9. A strained relationship between management and the current or previous auditor as evidenced by any of the following:
   - Frequent disputes on accounting, auditing, and reporting issues.
   - Unreasonable demands on the auditor, such as unreasonable time constraints.
   - Restricting the auditor's access to people and information.
   - Limiting the auditor's ability to effectively communicate with the board of directors and audit committee.
   - Domineering management behavior toward the auditor.

Manipulation of earnings

Revenue recognition

Issues	Range of problems	Warning sign
Revenue misstatement	Bring forward or delay the revenue recognition	Large changes in account associated with A/R, unearned revenue, etc. (large increases in A/R, large decreases in unearned revenue)
Accelerating revenue	Accelerate the recognition of revenue by reporting revenue in current period that should be reported in future when it's hard to assess the progress of earning. To analyze the ratio of revenue to cash collected from customers is a good way to detect acceleration of revenue recognition.	▪ Significant revenue without cash collection; ▪ Seeking for additional financing; ▪ Significant options vested by management. ▪ Maintain its track record of successively meeting analyst forecasts
Nonrecurring or non-operating as revenue	Report the non-recurring items or non-operating gain as revenue.	Temporal inconsistency with respect to the included revenues and expenses in a company's definition of operating income

Manipulation of earnings

Expense recognition

Issues	Range of problems	Warning sign
Understating expenses(see example 4)	▪ Aggressive depreciation or amortization method and assumptions; ▪ Un-recorded allowance for obsolete inventories	▪ Ratios of depreciation; ▪ Inventory turnover ratios;
Deferring expenses	Improper capitalization of cost which should be expensed.	▪ Track growth in net non-current assets
Ordinary as nonrecurring or non-operating (see example 5 and 6)	Report the ordinary expenses or cost as non-recurring items or non-operating losses.	Check ratio: (sales – COGS – SG&A) / sales

Manipulation of Cash flows

- **Management may manipulate cash flows to inflate sustainable CFO**
  - Misclassification
    - ✓ Classifying CFF as CFO and vice versa
  - Timing of cash flows

Manipulation of Cash flows

- **Stretching Accounting payable:**
  - Delay payment to suppliers → CFO↑
- **Financing Accounts payable:**
  - Manage timing of CFO
- **Securitizing Accounts receivable:**
  - Sale A/R → CFO↑
- **Repurchasing stock to offset dilution:**
  - Option exercise → CFF↑
  - Repurchase to offset dilution → CFF
  - There is **a tax benefit when options are exercised, which ↑ CFO**; and employee stock options are part of compensation, **the outflow of CFF should be reclassified as CFO for analysis purpose**.

Accounting warning signs

- Aggressive revenue recognition.
  - Bill-and-hold arrangements whereby revenue is recognized before the goods are shipped.
  - Sales-type leases whereby the lessor recognizes a sale, and profit, at the inception of the lease, especially when the lessee does not capitalize the lease.
  - Recognizing revenue before fulfilling all of the terms and conditions of sale.
  - Recognizing revenue from swaps and barter transactions with third parties.
- Different growth rates of operating cash flow and earnings. Over time, there should be a fairly stable relationship between the growth of operating cash flow and earnings. If not, earnings manipulation may be occurring.

Accounting warning signs

- Abnormal sales growth as compared to the economy, industry, or peers.
- Abnormal inventory growth as compared to sales growth.
- Boosting revenue with nonoperating income and nonrecurring gains.
- Delaying expense recognition.
- Abnormal use of operating leases by lessees.
- Hiding expenses by classifying them as extraordinary or nonrecurring.
- LIFO liquidations.
- Abnormal gross margin and operating margin as compared to industry peers.
- Extending the useful lives of long-term assets.
- Aggressive pension assumptions.
- Year-end surprises.
- Equity method investments and off-balance-sheet special purpose entities.
- Other off-balance-sheet financing arrangements including debt guarantees.

F.R.A

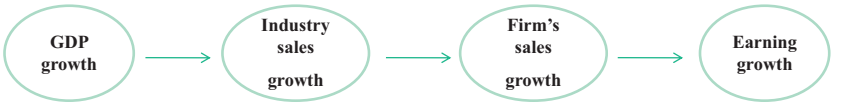
- **SS7**
  - R22: Financial Statement Analysis: An Introduction
  - R23: Financial Reporting Mechanics
  - R24: Financial Reporting Standards
- **SS8**
  - R25: Understanding the I/S
  - R26:Understanding the B/S
  - R27: Understanding the C/F
  - R28: Financial Analysis Techniques
- **SS9**
  - R29: Inventories
  - R30: Long-Lived Assets
  - R31: Income Taxes
  - R32: Long-Term Liabilities and Leases
- SS10
  - R33: Financial Reporting Quality
  - R34: Financial Statement Analysis: Applications

Important to understand business strategy

- Premium products are usually sold at higher gross margins than less differentiated commodity-like products, so we should expect cost of goods sold to be a higher proportion of sales for the latter.
- We might also expect the company with cutting-edge features and high quality to spend a higher proportion of sales on research and development, which may be quite minimal for a firm purchasing improved components from suppliers rather than developing new features and capabilities in-house.
- The ratio of gross profits to operating profits will be larger for a firm that spends highly on research and development or on advertising.

Financial statement analysis in assessing credit quality

- **Ratio analysis for evaluation of past financial performance Forecasting**
  - A company's future income and cash flow can be projected by forecasting future sales



- **Credit analysis uses a firm's financial statement to asset its credit quality**
  - Character
  - Collateral
  - Capacity to pay
- **Types of items considered can be separated into four general categories: Scale and diversification, Operational efficiency (operating ROA, operating margins, and EBITDA margins), Margin stability, Leverage)**

Adjustments for comparison

- **Companies must** adjust the financial statements **for comparability when they use different accounting methods or estimates**
  - ✓ Different **accounting methods** between companies
  - ✓ Different **accounting standards** crossing countries

Appropriate adjustments to facilitate comparison

- Investments in Securities.
  - differences in classifications
  - Under IFRS, unrealized gains and losses on available-for-sale debt securities that result from exchange rate fluctuations are recorded on the income statement. Because they are not recorded as income under U.S. GAAP, an analyst should subtract (add) this component of unrealized gains (losses) from the net income of the IFRS firm to improve comparability.
- Inventory Accounting Differences
  - The LIFO reserve, which all LIFO firms must report, can be used to adjust LIFO cost of goods and inventory to their FIFO-equivalent values.

Appropriate adjustments to facilitate comparison

- Differences in Depreciation Methods and Estimates
  - Over an asset's life, differences between depreciation methods, estimates of useful lives, and estimates of salvage values used by otherwise comparable firms can lead to significant differences in reported income and balance sheet asset values.
  - Note as well that upward revaluation of fixed asset values is permitted under IFRS but not under U.S. GAAP.
- Off-Balance-Sheet Financing
  - Debt ratios should include liabilities for both capital (finance) leases and operating leases.

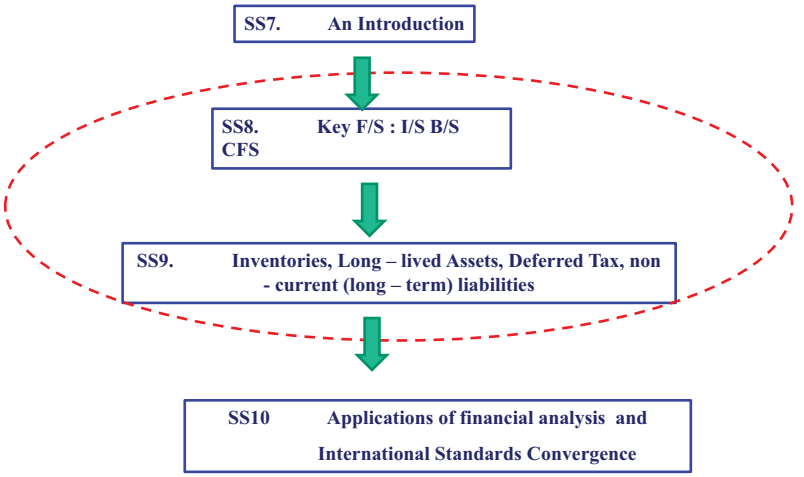
Appropriate adjustments to facilitate comparison

- Goodwill
  - **First, goodwill should be subtracted from assets when calculating financial ratios.**
  - **Second, any income statement expense from impairment of goodwill in the current period should be reversed, increasing reported net income.**
- Other Intangible Assets
  - Additional adjustment may be required for IFRS firms that revalue intangible assets upward, which is not permitted under U.S. GAAP.
  - Analysts should also note that a firm's pre-and post-acquisition financial statements may lack comparability when the acquisition method is used. The acquisition method combines fair value estimates of identifiable assets with historical asset costs on the balance sheet and adds the earnings of the purchased firm with no restatement of prior results.

Appropriate adjustments to facilitate comparison

- Investments in Securities.
- Inventory Accounting Differences
- Differences in Depreciation Methods and Estimates
- Off-Balance-Sheet Financing
- Goodwill
- Other Intangible Assets

FRA structure



It's not the end but just beginning.

Always believe that good things are possible, and remember that mistakes can be lessons that lead to discoveries. Take your fear and transform it into trust; learn to rise above anxiety and doubt. Turn your "worry hours" into "productive hours". Take the energy that you have wasted and direct it toward every worthwhile effort that you can be involved in. You will see beautiful things happen when you allow yourself to experience the joys of life. You will find happiness when you adopt positive thinking into your daily routine and make it an important part of your world.

请坚信，美好的降临并非不可能，失误也许是成功的前奏。将惶恐化作信任，学会超越担忧和疑虑。让“诚惶诚恐”的时光变得“富有成效”。不要挥霍浪费精力，将它投到有意义的事情中去。当你下意识品尝生命的欢愉时，美好就会出现。当你积极地看待生活，并以此作为你的日常准则时，你就会找到快乐的真谛。