

Financial Reporting & Analysis

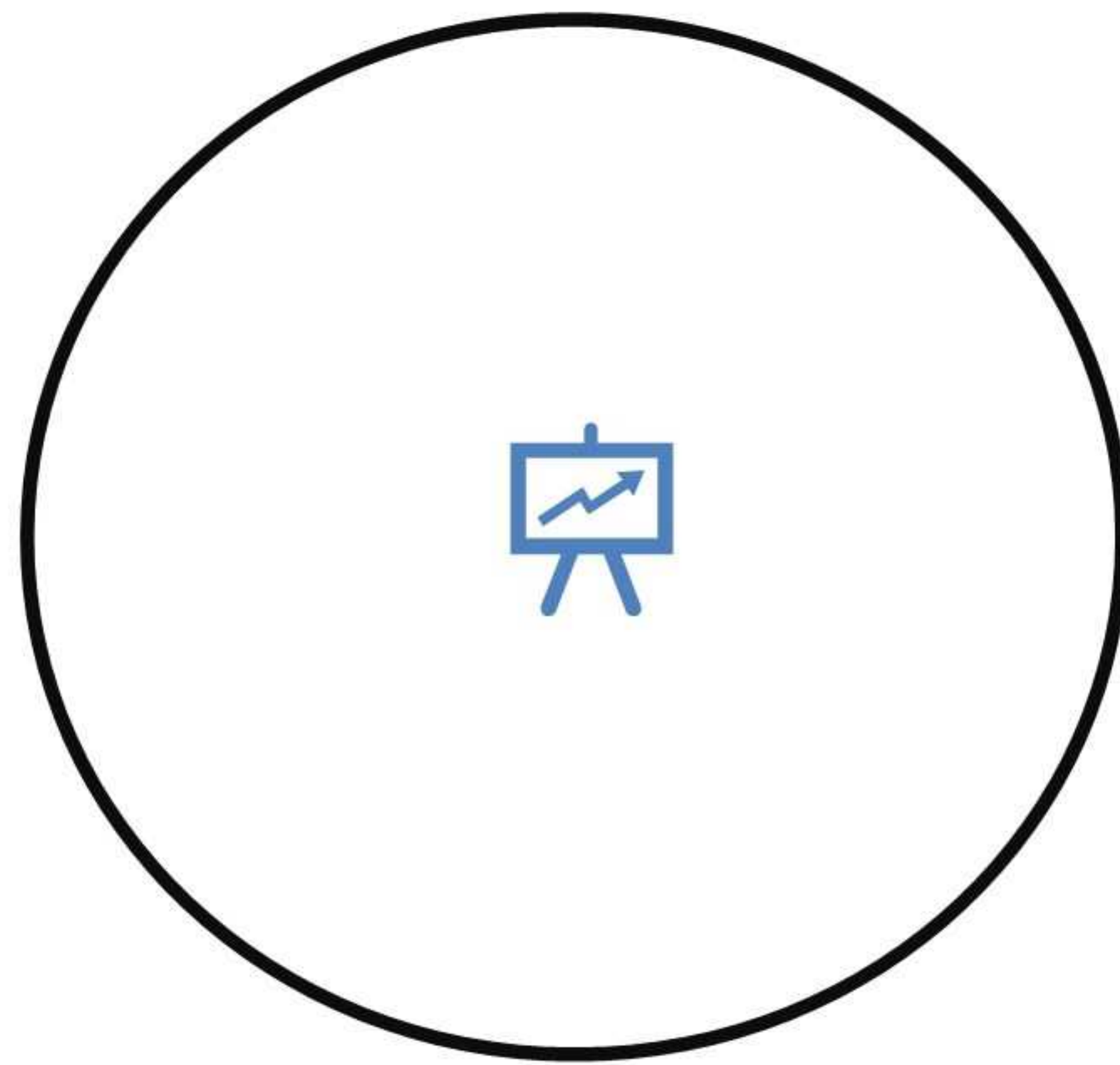
Level 1 — 2020

Instructor: Chen



Brief Introduction

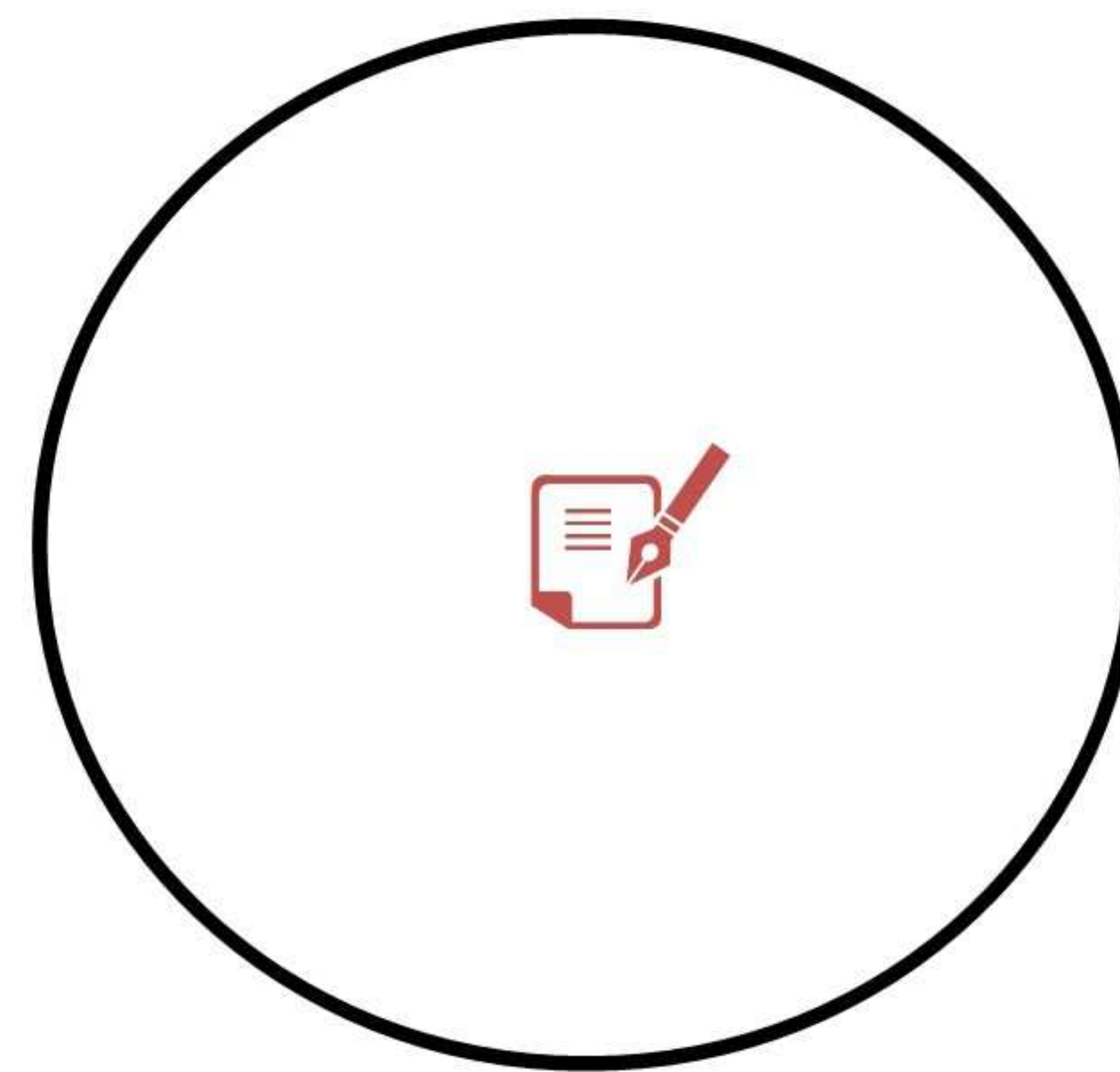
CFA财报科目和传统会计学的比较



传统会计学

掌握会计工作的核心流程：

确认-计量-记录-报告



CFA财报分析

掌握基本的会计记账原理，

站在分析师角度：对现有的财务报告
进行分析，解释与评价

Brief Introduction

Study Sessions	Modules	Weights(2019)	Weights(2020)
Study Session 1	Ethical and Professional Standards	15%	15%
Study Session 2-3	Quantitative Methods	10%	10%
Study Session 4-5	Economics	10%	10%
Study Session 6-9	Financial Reporting and Analysis	15%	15%
Study Session 10-11	Corporate Finance	10%	10%
Study Session 12-13	Portfolio Management	6%	6%
Study Session 14-15	Equity	11%	11%
Study Session 16-17	Fixed Income	11%	11%
Study Session 18	Derivatives	6%	6%
Study Session 19	Alternative Investments	6%	6%

Brief Introduction

Content

➤ Study session 6

- ✓ Reading 19: Introduction (☆☆)
- ✓ Reading 20: Financial Report Standards (☆)

➤ Study session 7

- ✓ Reading 21: Understanding the I/S (☆☆☆)
- ✓ Reading 22: Understanding the B/S (☆☆☆)
- ✓ Reading 23: Understanding the C/F (☆☆☆)
- ✓ Reading 24: Financial Analysis Techniques (☆☆☆)

Brief Introduction

Content (Cont.)

➤ Study session 8

- ✓ Reading 25: Inventories (☆☆☆)
- ✓ Reading 26: Long-Lived Assets (☆☆☆)
- ✓ Reading 27: Income Taxes (☆☆☆)
- ✓ Reading 28: Long-Term Liabilities and Leases (☆☆☆)

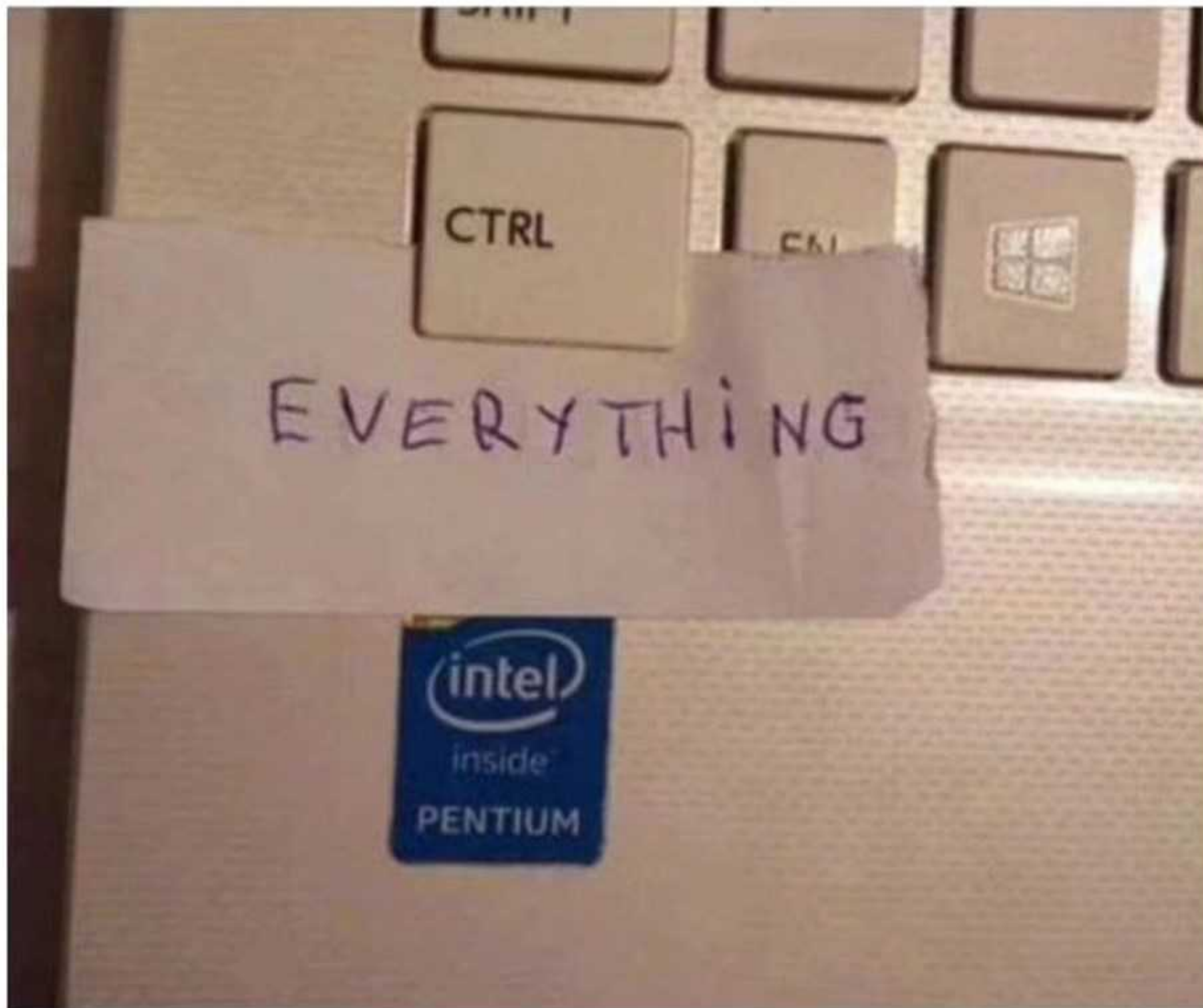
➤ Study session 9

- ✓ Reading 29: Financial Reporting Quality (☆)
- ✓ Reading 30: Financial Statements Analysis : Applications (☆)

来自Chen老师 (兼CFA界老司机) 的建议

- 本门课程在一级占比最大，难度较高，考生要格外重视
- 知识点比较零散，学习时要注意搭建知识框架
- 务必认真听课，及时记忆总结
- 课程中涉及的会计准则积极记忆，更重要的从逻辑上进行理解，着眼于分析
- 陈老师微信公众号：**高顿王牌陈**
 - ✓ 任何建议可以留言 # 非答疑号，请理解 #

Ready, GO!



Everything is
under Control

Q: 如何过一级?

A: 必须拿下财报~

Q: 如何学财报

A: 紧跟王牌陈的思路!

——Mr. Chen

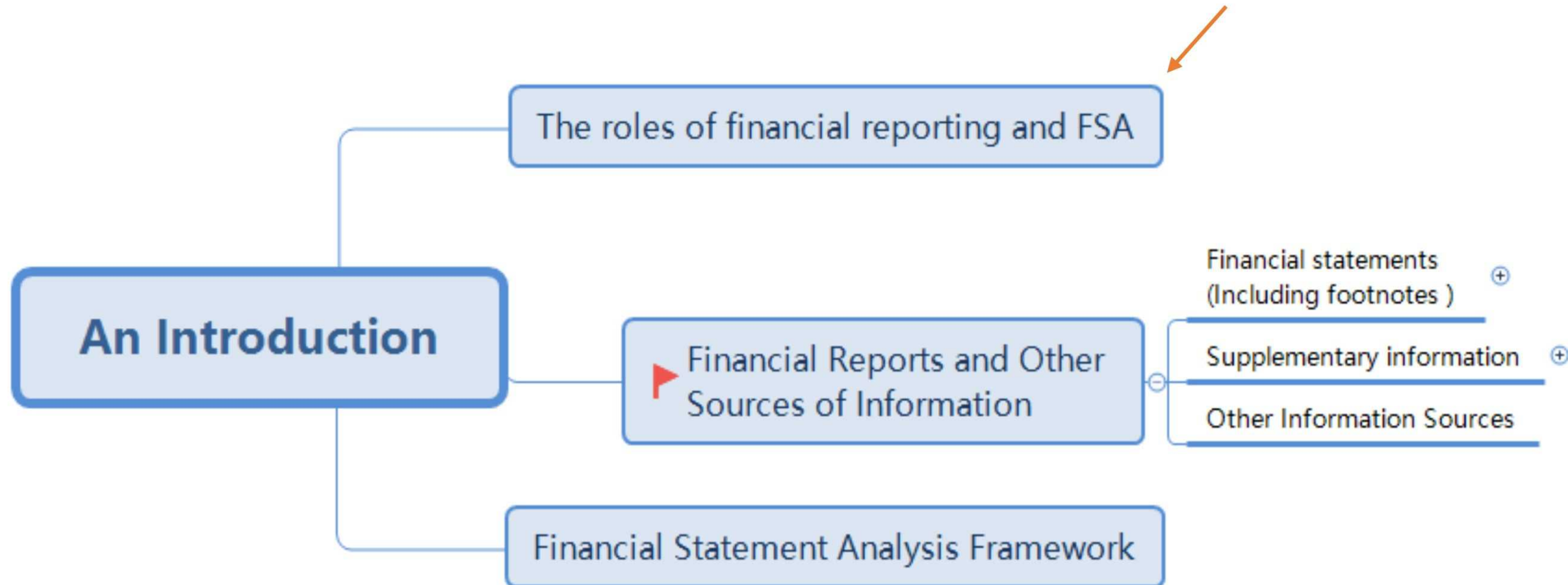
Financial Statement Analysis: An Introduction

The Roles of Financial Reporting and FSA

Tasks:

- **Describe** the roles of financial reporting and financial statement analysis;
- **Describe** the roles of financial statements, the importance of supplementary information;
- **Identify and describe** information sources used in financial statement analysis.

Mindmap: An Introduction



Chen's Questions

➤ 什么是财务报表？

- ✓ 财务报表是由**该企业**提供的，反映企业一定时期资金、利润状况的**会计报表**。

➤ 什么是财务报表分析？

- ✓ 财务报表分析是**分析师**出具的，对企业财务报表所提供的数据进行**分析、比较、评价和预测**。

➤ 财务报表分析存在的意义？

- ✓ 财务报表只披露历史财务数据和信息，无法完全作为报表使用者做出经济决策判断的依据。只有将企业的财务指标进行分析和比较，才能说明该企业财务状况。

Roles of Financial Reporting Analysis

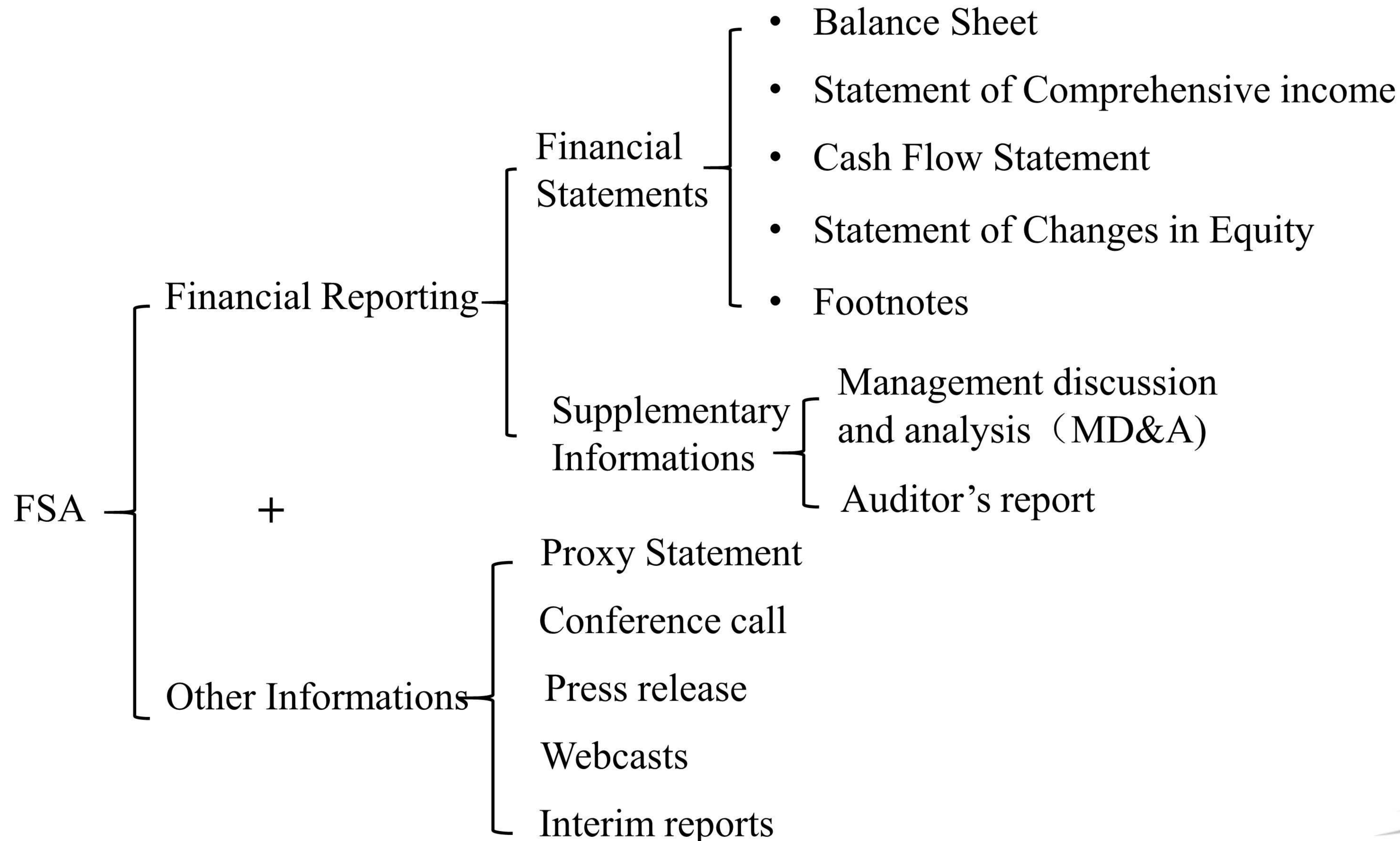
Definition of financial reporting

- The way companies provide information to wide range of users, such as investors, creditors, and other interested parties about:
 - ✓ Financial position
 - ✓ Financial performance
 - ✓ Changes in financial position of an entity

The role of financial reporting analysis

- Use financial reports and other information to evaluate company's performance and financial position for the purpose of ***making economic decisions***.

Key Financial Information for Analysis



Summary

- **Importance:** ☆
- **Content:**
 - ✓ Financial Reporting Vs. Financial Reporting Analysis;
- **Exam tips:**
 - ✓ 本章是财报分析的入门，要求考生了解即可。

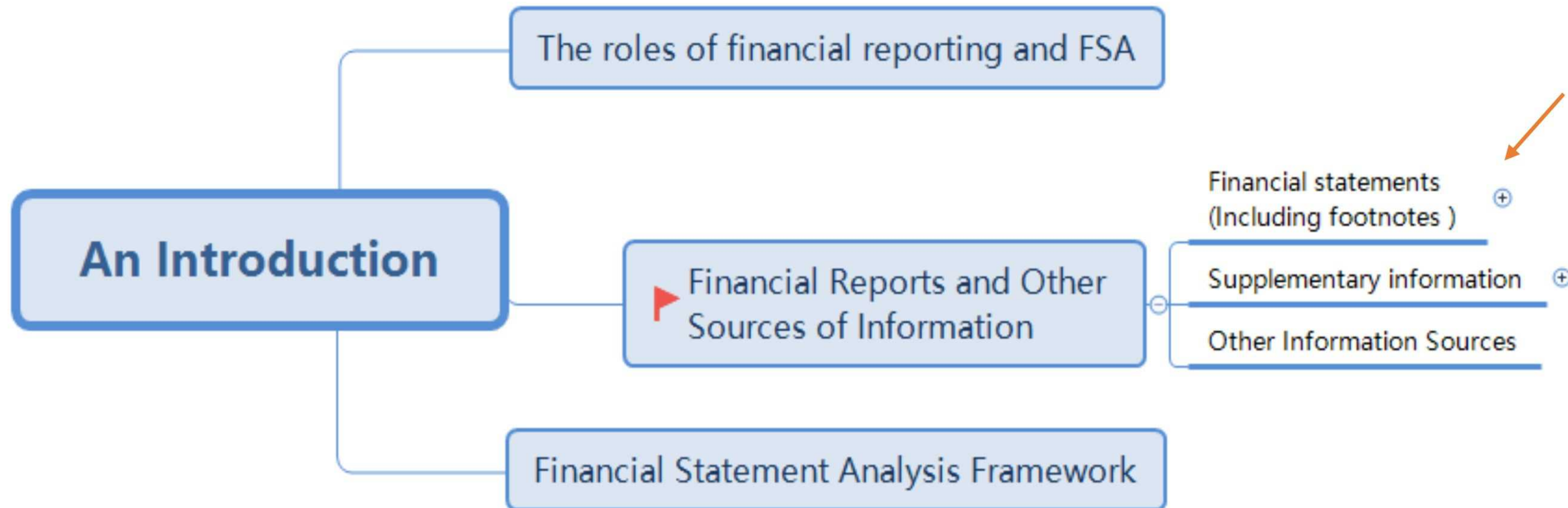
Financial Statement Analysis: An Introduction

Key Financial Statements

Tasks:

- **Describe** the key financial statements.

Mindmap: An Introduction



Balance Sheet

- Presents a company's current financial position by disclosing the resources the company controls (Assets) and its obligations to lenders or other creditors (Liabilities) **at a specific point in time.**
- Elements on Balance sheet:
 - ✓ **Assets** are the resources controlled by the firm.
 - ✓ **Liabilities** are amounts owed to lenders and other creditors.
 - ✓ **Owner's equity** is the residual interest in the net assets of an entity that remains after deducting its liabilities.

Balance Sheet

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

Obligations of the entity to lender and other creditors.

Economic resources which owned by a business and future economic benefit expected to flow to the entity.

Residual interest of a firm calculated as Assets minus Liabilities, also called net assets.

Income Statement

- Also known as **profit and loss (P&L) statement**.
- Presents information on the financial results of a company's business activities **over a period of time**.
- Net income is known as the **bottom line**.

Income Statement

$$\text{Income} - \text{Expenses} = \text{Net Income}$$

- **Income** = Revenue + Other Income + Gain
 - ✓ Revenue: The amount charged for the goods delivered or service rendered in the ordinary activities of business
- **Expenses** = Expenses from ordinary activities of business + Other Expense + Loss
 - ✓ Expense: the outflows and depletion of assets, or incurrence of liabilities in the course of business activities

Relationship between Financial Statements - 1

Income statement

Revenue

-
-
-

(Expenses)

Net Income

Balance sheet

Asset

Liability

Equity

Dividend

Δ Retained Earnings

BASE Rule:

Ending R/E = Beginning R/E + Net Income – Dividend

Relationship between Financial Statements

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

$$\text{Capital}_{\text{end}} + \text{Retained earnings}_{\text{end}} + \text{Accumulated OCI}_{\text{end}}$$

$$\text{Retained earnings}_{\text{beg.}} + \Delta \text{Retained earnings}$$

$$\text{Net income} - \text{Dividend declared}$$

$$\text{Revenue} - \text{Expense}$$

Practice 1

Golden Investment Co. reported the following financial statement

information:

December 31, 2016:

Assets	\$90,000
Liabilities	65,000

December 31, 2017:

Assets	102,000
Liabilities	75,000

During 2017:

Stockholder investments	5,000
Net income	?
Dividends	8,000

Practice 1

Calculate Golden's net income and the change in stockholders' equity for the year ended December 31, 2017.

Net income	Change in stockholders' equity
A. (\$3,000)	\$2,000 increase
B. \$5,000	\$2,000 decrease
C. \$5,000	\$2,000 increase

Practice 1

Answer: C

Stockholders' equity, as of December 31, 2016, was \$25,000 (\$90,000 assets – \$65,000 liabilities) and stockholders' equity, as of December 31, 2017, was \$27,000 (\$102,000 assets – \$75,000 liabilities). Stockholders' equity increased \$2,000 during 2017.

Net income for 2017 was \$5,000 (\$27,000 ending equity + \$8,000 dividends – \$5,000 stockholder investments – \$25,000 beginning equity).

Cash Flow Statement

- Reports the company's sources and uses of cash **over a period of time.**
- Elements on Cash Flow Statement
 - ✓ Cash flows from operating activities (CFO)
 - ✓ Cash flows from investing activities (CFI)
 - ✓ Cash flows from financing activities (CFF)

Relationship between Financial Statements - 2

	Cash flow from operations (CFO)	X
+		
	Cash flow from investing (CFI)	X
+		
	Cash flow from financing (CFF)	X
<hr/>		
=	Change in cash balance	X
+		
	Beginning cash	X
<hr/>		
=	Ending cash	X

Statement of Changes in Equity

- Presents each component of equity's beginning balance, any changes during the period, and the ending balance.
- The basic components of owners' equity are **paid-in capital** and **retained earnings**.

	Capital	Retained Earning	Total
Beginning	4000	2000	6000
Net Income		300	300
Owner Contribution	2000		2000
Ending	6000	2300	8300

T-account

- $\text{Asset} = \text{Liability} + \text{Equity}$
 - ✓ $\Delta \text{Asset} = \Delta \text{Liability} + \Delta \text{Equity}$
 - ✓ $\text{Ending R/E} = \text{Beginning R/E} + \text{Net Income} - \text{Dividend}$
 - ✓ $\text{Ending Cash} = \text{Beginning Cash} + \text{Cash Flow In} - \text{Cash Flow Out}$
- Double Entry Accounting

Summary

- **Importance:** ☆ ☆ ☆
- **Content:**
 - ✓ Four financial statements;
 - ✓ Relationships between financial statements
- **Exam tips:**
 - ✓ 本章是财报分析的重要基础，要求考生必须扎实掌握。

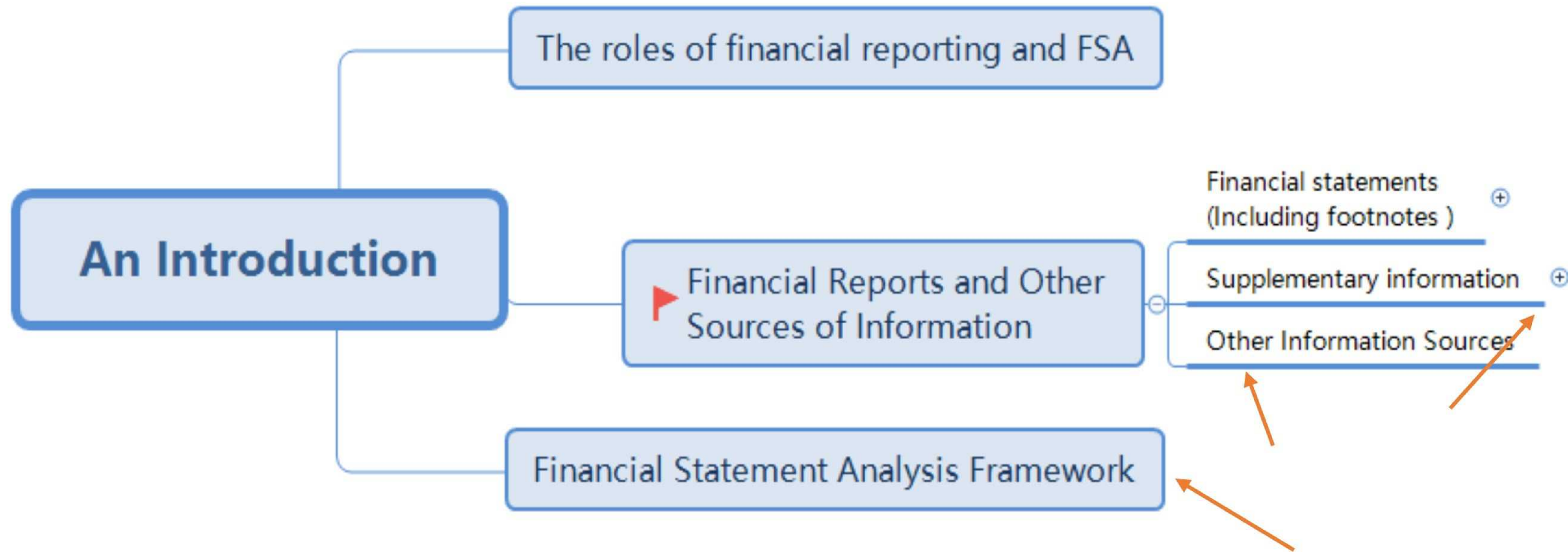
Financial Statement Analysis: An Introduction

Other Information Sources

Tasks:

- **Describe** the objective of audits, the types of audit reports, and the importance of effective internal controls;
- **Identify and describe** information sources used in financial statement analysis;
- **Describe** the steps in the financial statement analysis framework.

Mindmap: An Introduction



Footnotes

- Provide information that is essential to understanding the primary statements
 - ✓ Basis of preparation of financial statements
 - ✓ Significant accounting policies and methods
 - ✓ Significant accounting estimates
 - ✓ Explanatory information of statements' line items
 - ✓ Additional disclosures (financial instruments, contingencies, acquisitions, related parties, segments, etc)
 - ✓ **Footnotes must be audited.**

Supplemental Disclosure

MD&A/Management Commentary/management report(ing)/operating and financial review

- Including the nature of business, past performance, and future outlook. (contents other than financial excerpts are typically unaudited)
- ✓ Highlight any favorable or unfavorable trends,
- ✓ Identify **significant events and uncertainties** that affect the company's **liquidity, capital resources, and results of operations.**
- ✓ Information about **off-balance-sheet obligations** and **contractual commitments.**

Supplemental Disclosure

Audit

- An **independent** review of an entity's financial statements
- **Reasonably assure** the statements are fairly presented (free from misstatement and in accordance with accounting principle)
- Must provide opinion on company's **internal controls** for US listed companies

Supplemental Disclosure

Auditor's opinion

- **Unqualified opinion** (clean opinion): **Free from material omissions and errors, fairly presented**, give a “**true and fair view**”.
- **Qualified opinion**: If statements make some **exceptions** to the accounting principles.
- **Adverse opinion**: If statements **materially depart from** accounting standards and are **not presented fairly**.
- **Disclaimer of opinion**: **unable** to express an opinion due to **scope limitation**.

Practice

Which type of audit opinion would be issued if there is scope limitation imposed on auditors?

- A. Unqualified opinion
- B. Disclaimer opinion
- C. Adverse opinion

Answer: B

When a scope limitation occurred, auditor should issue disclaimer opinion for the financial statements.

Other Relevant Information

Interim reports

- quarterly reports

Proxy statement

- Matters to vote in a shareholders' meeting

Press release

- Earnings' announcement

SEC filing

Conference call

Information from other sources regarding economy, industry, the company, and competitors.

Financial Statement Analysis Framework

1. *Purpose and Context of Analysis*
2. **Collect Data**
3. **Process Data**
4. **Analyze/Interpret Data**
5. *Conclusions and Recommendations*
6. *Update analysis periodically*

Summary

- **Importance:** ☆
- **Content:**
 - ✓ Disclosure of footnotes, MD&A;
 - ✓ Objective of audits of financial statements, the types of audit reports;
 - ✓ Steps in the financial statement analysis framework.
- **Exam tips:**
 - ✓ 本章考点不难，要求考生了解。

Summary for the Whole Reading

An Introduction

The roles of financial reporting and FSA

Financial Reports and Other Sources of Information

Financial Statement Analysis Framework

★ Financial statements
(Including footnotes)

B/S

I/S

CF/S

Footnotes

要审计!

★ Supplementary information

MD&A

Audit (四种审计意见)

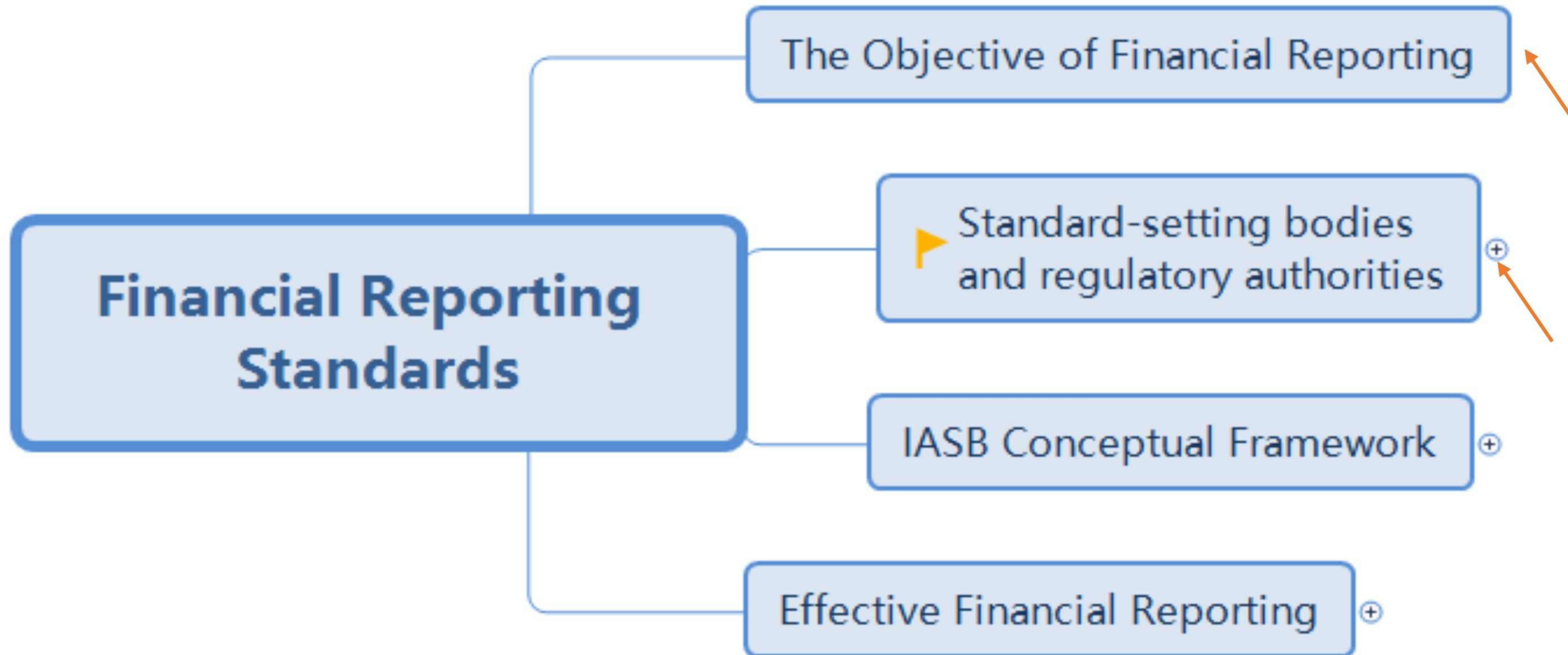
Other Information Sources

Standards-Setting Bodies and Regulatory Authorities

Tasks:

- **Describe** the objective of financial statements, the importance of financial reporting standards;
- **Describe** roles of financial reporting standard-setting bodies, regulatory authorities;

Mindmap: Financial Reporting Standards



Standard-setting Bodies

- Financial Accounting Standards Board (**FASB**)
 - ✓ Sets **U.S. GAAP**
- International Accounting Standards Board (**IASB**)
 - ✓ Sets **IFRS**

Regulatory Authorities

- Government agencies have the enforcement power (**IASB and FASB don't have**)
 - ✓ The Securities and Exchange Commission (**SEC**) in the U.S.

- Most national authorities are members of the International Organization of Securities Commissions (**IOSCO**).
 - ✓ Protect investors
 - ✓ Ensure that markets are fair, efficient, and transparent
 - ✓ Reduce systemic risk

SEC filings required

- **Form S-1 (Securities Offerings Registration Statement)**
 - ✓ Registration statement filed for issuing new securities.
- **Form DEF-14A (proxy statement)**
 - ✓ Proposals need to vote
 - ✓ Executive compensation
 - ✓ Details of security ownership
- **Form 8-K**
 - ✓ Acquisitions and disposals of major assets.
 - ✓ Changes in its management.
 - ✓ Changes in corporate governance.

SEC filings required

➤ Form 10-K

- ✓ Annual financial statements. (Audited)

➤ Form 10-Q

- ✓ Quarterly financial statements. (Not necessarily audited)

➤ Form 144

- ✓ Notice of the proposed sale of restricted securities or securities held by an affiliate of the issuer in reliance on Rule 144.

Convergence of Global Financial Reporting Standards

- Many aspects of IFRS and U.S. GAAP have converged over the past decade.
- Effective in 2008, the SEC adopted rules to eliminate the **reconciliation requirement** for foreign private issuers' financial statements prepared in accordance with IFRS as issued by the IASB.
- Previously, any non-US issuer using accounting standards other than US GAAP was required to provide a reconciliation to US GAAP.

Summary

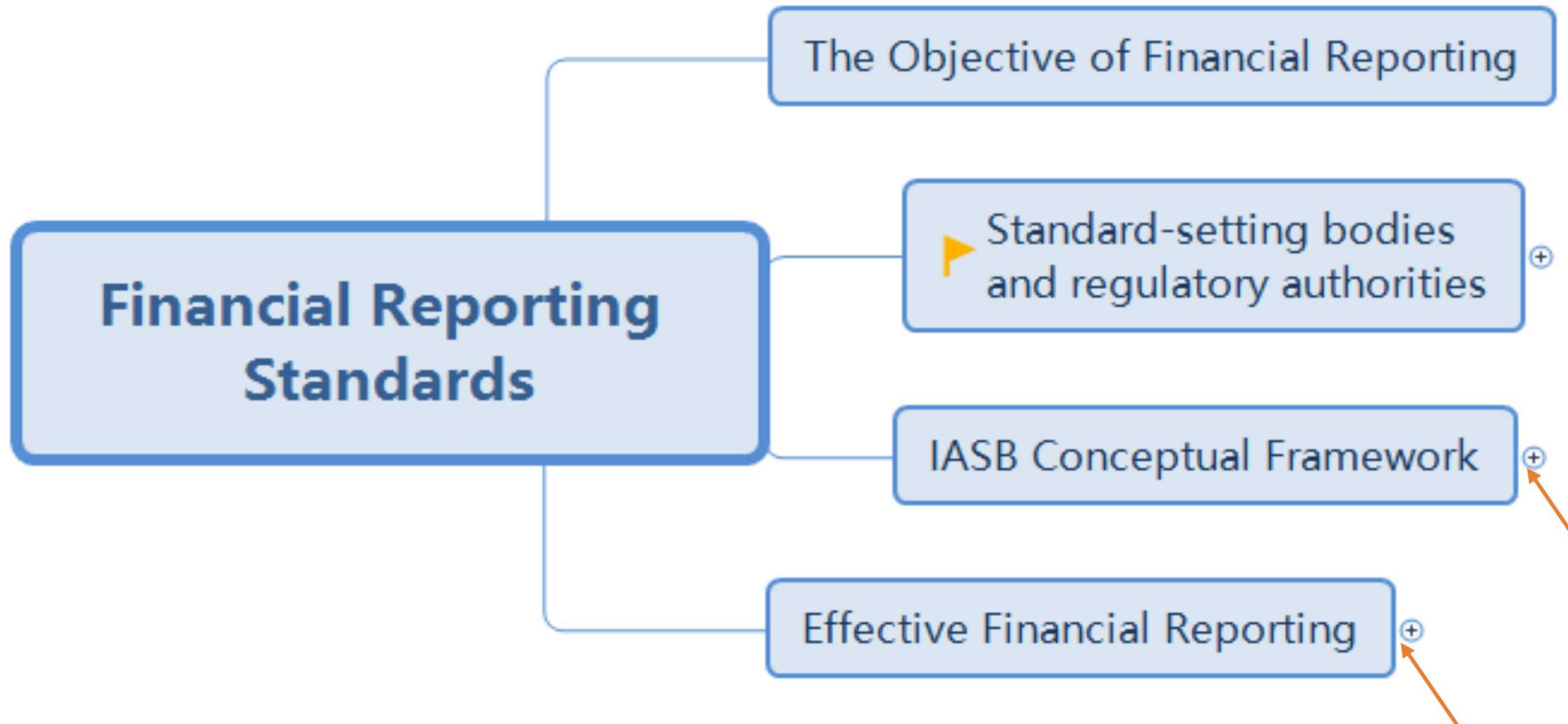
- **Importance:** ☆
- **Content:**
 - ✓ The role of financial reporting standard-setting bodies, regulatory authorities, IOSCO;
 - ✓ SEC fillings;
- **Exam tips:**
 - ✓ 考察SEC fillings的概念，要求会辨析；

The International Financial Reporting Standards Framework

Tasks:

- **Describe** the IASB's conceptual framework;
- **Describe** qualitative characteristics of financial reports, constraints on financial reports, and required reporting elements;

Mindmap: Financial Reporting Standards



The International Financial Reporting Standards Framework

Qualitative characteristics: **two fundamental** characteristics

1. Relevance

- ✓ Information is relevant if it would potentially affect or make a difference in user's decisions. If **omission or misstatement** of information could influence decisions, it is considered **material**.

2. Faithful representation

- ✓ **Complete** (all information necessary is depicted), **neutral** (without bias), and **free from error**.

The International Financial Reporting Standards Framework

Qualitative characteristics: **four enhancement** characteristics

1. Comparability

- ✓ Financial statements are presented in a **consistent** manner among firms and over time.

2. Verifiability

- ✓ Independent and knowledgeable observers using the same methods can obtain similar results.

The International Financial Reporting Standards Framework

Qualitative characteristics: **four enhancement** characteristics

3. *Timeliness*

- ✓ **Information is available** to decision makers prior to they make a decision.

4. *Understandability*

- ✓ Can understand the information the statements with a reasonable *business and economic knowledge*.

Practice 1

Under the International Accounting Standards Board's (IASB's) Conceptual Framework, one of the qualitative characteristics of useful financial information is that different knowledgeable users would agree that the information is a faithful representation of the economic events that it is intended to represent. This characteristic is best described as:

- A. verifiability.
- B. understandability.
- C. comparability.

Answer: A

Barriers to a Single Coherent Framework

➤ *Valuation*

- ✓ Historic cost → minimal judgement (Reliable)
- ✓ Fair value → considerable judgement (Relevant)

➤ *Measurement*

- ✓ Asset/Liability approach B/S
- ✓ Revenue/Expense approach I/S
- **Standard setter focus on Asset/Liability approach**

Summary

- **Importance:** ☆
- **Content:**
 - ✓ IASB's conceptual framework;
- **Exam tips:**
 - ✓ IFRS的准则框架特征以及要求需要考生掌握，主要掌握2个质量特征+4个增强质量特征的辨析。

IASB General Requirements for Financial Statements

Tasks:

- **Describe** general requirements for financial statements under IFRS.

Mindmap: Financial Reporting Standards



Required Reporting Elements

- *Assets*
- *Liabilities*
- *Equity*
- *Revenue*
- *Expense*

Required Financial Statements

- Balance sheet
- Statement of **comprehensive income**
 - ✓ *Comprehensive income*
= Net Income + Other comprehensive income
 - 1. a single statement of comprehensive income: Reports all items that impact shareholders' equity but are not the result of transactions with shareholders
 - 2. two statements: an income statement and a statement of comprehensive income that begins with profit or loss from the income statement
- Cash flow statement
- Statement of changes in owners' equity
- Footnotes

General Features of Financial Statements

Classified balance sheet

- A classified balance sheet should distinguish between **current and non-current** assets and liabilities.

Minimum information

- The minimum line item disclosures on the face of, **or** in the notes to, the financial statements are required.

Comparative information

- Comparative information should be provided for **prior periods**.

General Features of Financial Statements

Aggregation

- Aggregation of similar items, separation of dissimilar items.

No offsetting

- Assets and liabilities, income and expenses, are not offset unless required or permitted by standards.

Reporting frequency

- Reporting must be prepared at least annually.

General Features of Financial Statements

Going concern basis

- Assume the company will continue in business for the foreseeable future.

Accrual basis of accounting

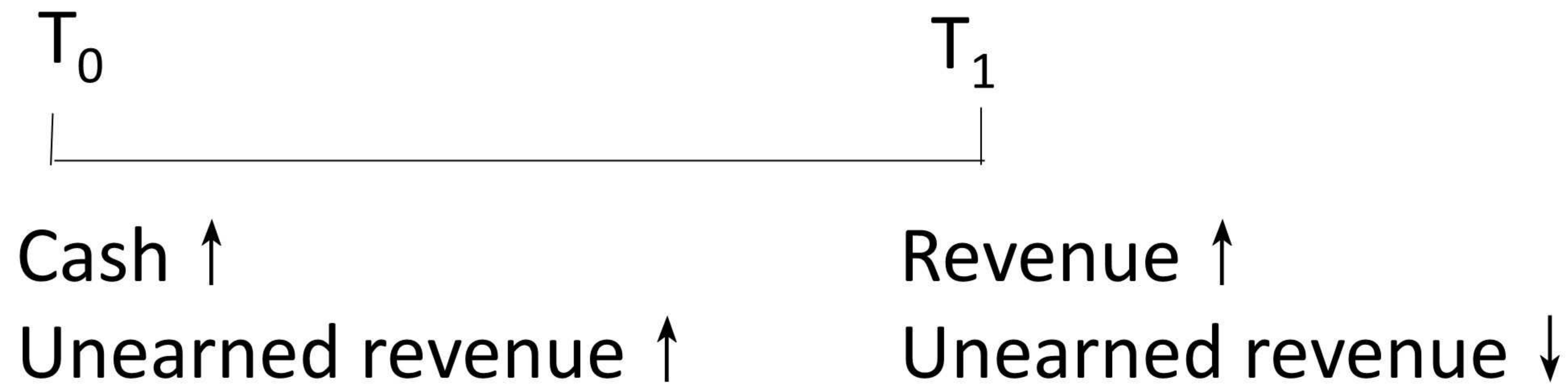
- assumes that financial statements should reflect transactions in the period when they actually occur, not necessarily when cash movements occur.

Accrual Accounting

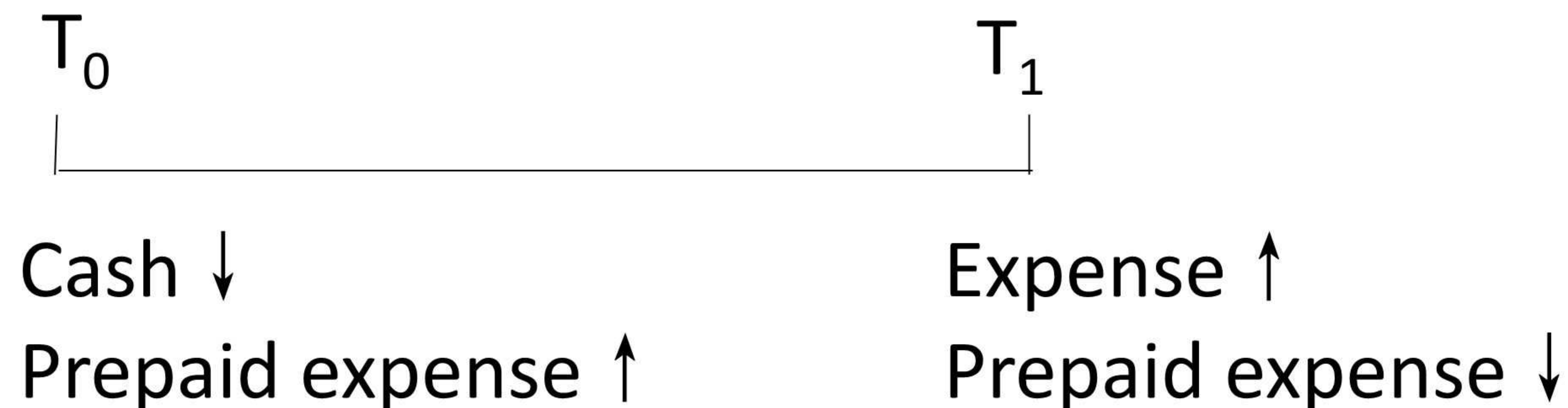
- Cash movement prior to accounting recognition
 - ✓ **Unearned revenue (deferred revenue):** 提前收到现金
 - ✓ **Prepaid expense (deferred expense):** 提前支付现金
- Cash movement after accounting recognition
 - ✓ **Unbilled revenue (accrued revenue):** 延迟收到现金
 - ✓ **Accrued expenses:** 延迟支付现金

Accrual Accounting

Unearned revenue (Deferred revenue)

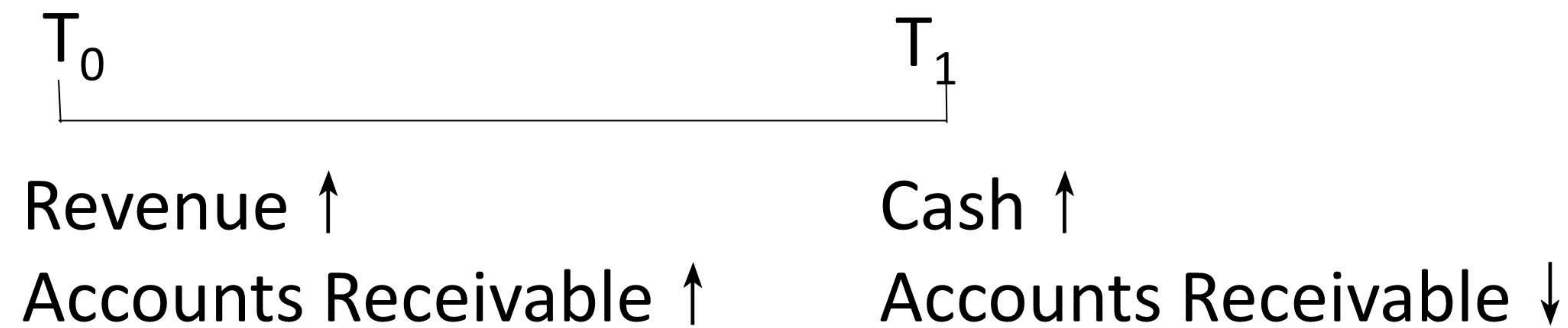


Prepaid expense (Deferred expense)



Accrual Accounting

Accrued revenue (Unbilled revenue)



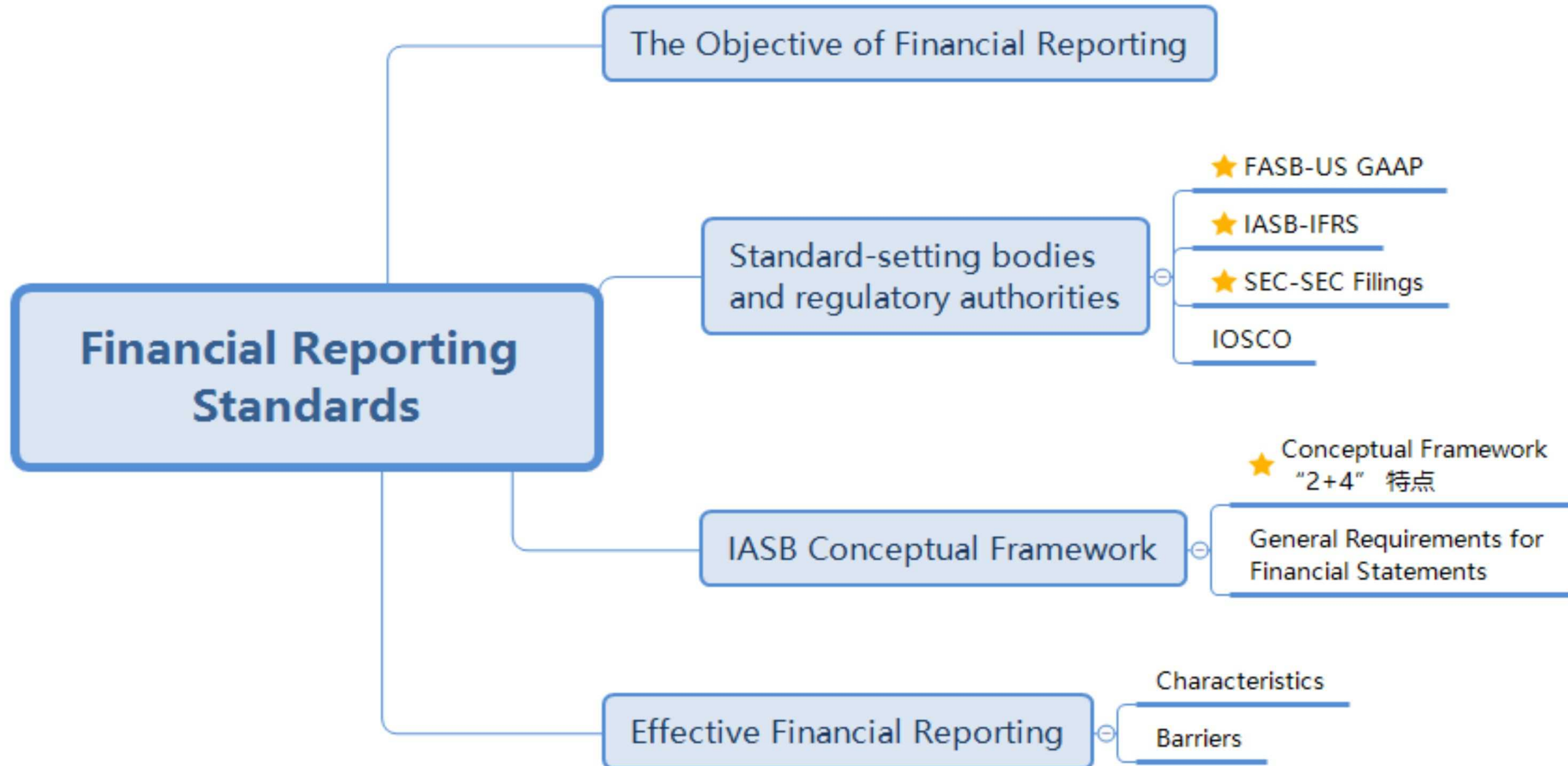
Accrued expense



Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ General requirements for IFRS;
 - ✓ Accrual Accounting.
- **Exam tips:**
 - ✓ 对于财务报表的一般性要求以及权责发生制要重点理解。

Summary for the Whole Reading



Components and Format

Tasks:

- **Describe** the components of the income statement and alternative formats of that statement;
- **Distinguish** between the operating and non-operating components of the income statement.

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

General Principles of Revenue / Expense Recognition

▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Components and Format

Net income = revenues + other income + gains

– ordinary expenses – other expense – losses

+/- gain (loss) from unusual or infrequent items

+/- gain (loss) from discontinued operation

- **Revenues** are the amounts charged for the sale of goods or services in the ordinary activities of a business.
 - ✓ Revenue adjusted for estimated discounts is **net revenue**.
- **Expenses** reflect outflows, depletions of assets.
 - ✓ Expenses are grouped together by their **nature or function**.

Multi-Step I/S Vs. Single-Step I/S

Single-Step I/S (\$)	
Revenue	5000
Total Revenue	5000
Purchase	(1800)
Marketing Expense	(800)
Depreciation	(400)
Interest Expense	(500)
Tax Expense	(300)
Total Expense	(3800)
Net Income	1200

Multi-Step I/S (\$)	
Revenue	5000
Cost of Good Sold (COGS)	(2000)
Gross Profit	3000
SG&A	(1000)
EBIT	2000
Interest Expense	(500)
Earning Before Tax	1500
Tax Expense	(300)
Net Income	1200

Multi-Step I/S – More Detailed

Income Statement
Net Revenue
- Cost of Good Sold (COGS)
Gross Profit
- SG&A
Operating Income
+/- Other income (expense)
+/- gain (loss)
+/- Unusual or Infrequent Items
Earning Before Interest & Tax
- Interest Expense
Earning Before Tax

Income Statement (continue)
Earning Before Tax
- Tax Expense
Net Income from Continuing Operations
+/- Gain (loss) from discontinued operation (Net of Tax)
Net Income

Non-Recurring Items

Unusual or infrequent items (continuing operations)

- Reported “**above the line**” and presented on a pretax basis.
 - ✓ Impairments, write-offs, write-downs
 - ✓ Restructuring costs
 - ✓ G/L from the sale of assets

Non-Recurring Items

Discontinued operations (presented on **net of tax**)

- When a company disposes of or establishes a plan to dispose of one of its component operations and will have no further involvement in the operation:
 - ✓ **During the phaseout period:** Any loss or gain should be recognized in the **discontinued operations**
 - ✓ **On the actual disposal date:** Any loss or gain on the sale of the business should be recognized in **the unusual or infrequent items (above the line)**.

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Components of the income statement and alternative presentation formats of that statement;
 - ✓ Financial reporting treatment and analysis of changes in accounting policies.
- **Exam tips:**
 - ✓ 了解利润表的格式以及包含的各项科目。
 - ✓ 了解两个non-recurring items科目的特征。

General Principles of Revenue Recognition & Expense Recognition

Tasks:

- **Describe** general principles of revenue recognition
- **Describe** general principles of expense recognition and implications of expense recognition choices for financial analysis

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

General Principles of Revenue / Expense Recognition

▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Revenue Recognition – General Principles

Accrual method of accounting

- Revenue is recognized when it is earned and expenses are recognized when it is incurred.
- Accrual accounting does not necessarily coincide with the receipt or payment of cash.

Expense Recognition – General Principles

- A general principle of expense recognition is **matching principle**
 - ✓ COGS
 - ✓ Depreciation and amortization
 - ✓ Doubtful account
 - ✓ Warranties

- **Period expenses:** cannot be directly tied to revenue generation, should be expensed in the period incurred.
 - ✓ Admin cost

Aggressive Accounting & Conservative Accounting

➤ Aggressive accounting policies means increase the assets, revenue and decrease liabilities and expense.

✓ Earlier revenue recognition → Aggressive

✓ Later expense recognition → Aggressive

✓ Later revenue recognition → Conservative

✓ Earlier expense recognition → Conservative

Summary

- **Importance:** ☆
- **Content:**
 - ✓ General principles of revenue recognition
 - ✓ General principles of expense recognition
- **Exam tips:**
 - ✓ 了解收入确认的原则
 - ✓ 知道收入与费用匹配原则

Five Steps in Recognizing Revenue

Tasks:

- **Describe** accounting standards for revenue recognition

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

General Principles of Revenue / Expense Recognition

▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Chen's Very Important Tips

- The requirement for this task in our CFA exam is just “describe”, but the accounting is really complex
- So we will just focus on the examples in the text book

Revenue Recognition - Five Steps

Five Steps in recognizing revenue:

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

Revenue Recognition – Example 1

- Builder Co. enters into a contract with Customer Co. to construct a commercial building.
- Builder Co. identifies various goods and services to be provided, such as pre-construction engineering, construction of the building's individual components, plumbing, electrical wiring, and interior finishes.
- **Question**
 - ✓ With respect to “Identifying the Performance Obligation,” should Builder Co. treat each specific item as a separate performance obligation to which revenue should be allocated?

Revenue Recognition – Example 1

➤ Answer

- ✓ The standard provides two criteria, which must be met, to determine if a good or service is distinct for purposes of identifying performance obligations.
- 1. First, the customer can benefit from the good or service either on its own or together with other readily available resources.
- 2. Second, the seller’s “promise to transfer the good or service to the customer is separately identifiable from other promises in the contract.”
- ✓ In this example, the second criterion is not met.

Revenue Recognition – Example 2

- Builder Co.'s contract with Customer Co. to construct the commercial building specifies consideration of \$1 million.
- Builder Co.'s expected total costs are \$700,000.
- The Builder incurs \$420,000 in costs in the first year.
- **Question**
 - ✓ Assuming that costs incurred provide an appropriate measure of progress toward completing the contract, how much revenue should Builder Co. recognize for the first year?
- **Answer**
 - ✓ The Builder has incurred 60% of the total expected costs ($\$420,000 / \$700,000$) and will thus recognize \$600,000 (60% \times \$1 million) in revenue for the first year

Revenue Recognition – Example 3

- Assume that Builder Co.'s contract with Customer Co. to construct the commercial building specifies consideration of \$1 million plus a bonus of \$200,000 if the building is completed within 2 years.
- Builder Co. has only limited experience with similar types of contracts and knows that many factors outside its control (e.g., weather, regulatory requirements) could cause delay.
- Builder Co.'s expected total costs are \$700,000. The Builder incurs \$420,000 in costs in the first year.
- **Question**
 - ✓ Assuming that costs incurred provide an appropriate measure of progress toward completing the contract, how much revenue should Builder Co. recognize for the first year?

Revenue Recognition – Example 3

➤ Answer

- ✓ The standard addresses so-called “variable consideration” as part of determining the transaction price.
- ✓ A company is only allowed to recognize variable consideration if it can conclude that it will not have to reverse the cumulative revenue in the future.
- ✓ In this case, Builder Co. does not recognize any of the bonus in year one because it cannot reach the non-reversible conclusion given its limited experience with similar contracts and potential delays from factors outside its control.

Revenue Recognition – Example 4

- Assume all facts from Example 3. In the beginning of year two, Builder Co. and Customer Co. agree to change the building floor plan and modify the contract.
- As a result the consideration will increase by \$150,000, and the allowable time for achieving the bonus is extended by 6 months.
- Builder expects its costs will increase by \$120,000.
- Also, given the additional 6 months to earn the completion bonus, Builder concludes that it now meets the criteria for including the \$200,000 bonus in revenue.
- **Question**
 - ✓ How should Builder account for this change in the contract?

Revenue Recognition – Example 4

➤ Answer

- ✓ The converged standard provides guidance on whether a change in a contract is a new contract or a modification of an existing contract.
 - To be considered a new contract, the change would need to involve goods and services that are distinct from the goods and services already transferred.
- ✓ In this case, the change does not meet the criteria of a new contract and is therefore considered a modification of the existing contract, which requires the company to reflect the impact on a cumulative catch-up basis.

Revenue Recognition – Example 4

➤ Answer

- ✓ Therefore, the company must update its transaction price and measure of progress.
- Builder's total revenue on the transaction (transaction price) is now \$1.35 million (\$1 million original plus the \$150,000 new consideration plus \$200,000 for the completion bonus).
- Builder Co.'s progress toward completion is now 51.2% (\$420,000 costs incurred divided by total expected costs of \$820,000).
- ✓ Based on the changes in the contract, the amount of additional revenue to be recognized is \$91,200, calculated as $(51.2\% \times \$1.35 \text{ million})$ minus the \$600,000 already recognized.

Revenue Recognition – Example 5

- Assume a Company operates a website that enables customers to purchase goods from various suppliers.
- The customers pay the Company in advance, and orders are nonrefundable.
- The suppliers deliver the goods directly to the customer, and the Company receives a 10% commission.
- **Question**
 - ✓ Should the Company report Total Revenues equal to 100% of the sales amount (gross) or Total Revenues equal to 10% of the sales amount (net)?

Revenue Recognition – Example 5

➤ Answer

- ✓ Revenues are reported gross if the Company is acting as a Principal and net if the Company is acting as an Agent.
- ✓ In this example, the Company is an Agent because it isn't primarily responsible for fulfilling the contract, doesn't take any inventory risk or credit risk, doesn't have discretion in setting the price, and receives compensation in the form of a commission.
- ✓ Because the Company is acting as an Agent, it should report only the amount of commission as its revenue.

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Accounting standards for revenue recognition
- **Exam tips:**
 - ✓ 了解收入确认的五步法模型
 - ✓ 了解相关例题里涉及的知识点

Basic Earnings Per Share

Tasks:

- Describe how earnings per share is calculated.

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

General Principles of Revenue / Expense Recognition

▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Earnings Per Share

- EPS is the most commonly used corporate profitability performance measure for publicly-traded firms
 - Basic EPS
 - Diluted EPS
- A **simple capital structure** contains no potentially dilutive securities.
 - Firm reports only basic EPS.
- A **complex capital structure** contains potentially dilutive securities.
 - Firm must report both basic and diluted EPS.

Basic EPS

$$\text{Basic EPS} = \frac{\text{NI} - \text{Div}_{\text{preferred stock}}}{\text{Weighted average number of common shares outstanding}}$$

➤ Weighted average number of common share outstanding

- New issue, repurchase is **weighted by time (days or months)**
- Stock dividend/split is **not weighted by time**, instead it should **adjust the number of common share** which exist **before** the stock dividend or split.

(Eg: 3-for-2 split: two shares split to three shares)

Basic EPS

Example:

- Golden Investment Co. had 1,000,000 shares outstanding at the beginning of last year, during the year, Golden Investment Co. has following equity related activities:

Date	Common Stock (in '000 shares)
Jan. 1 st	1,000 outstanding
Mar. 1 st	+600 (new issue)
May. 1 st	2-for-1 split
Jul. 1 st	-400 (repurchase)
Oct. 1 st	10% stock dividend

- What's the weighted average number of shares outstanding at the end of the year?

Basic EPS

Answer: The weighted average number of common stocks outstanding during the year is calculated as following:

Date	Common Stock (in '000 shares)	Adjustments	Subtotal (in '000)
Jan. 1 st	1,000 outstanding	$\times 12/12 \times 2 \times 1.1$	=2,200
Mar. 1 st	+600 new issue	$\times 10/12 \times 2 \times 1.1$	+1,100
May. 1 st	2-for-1 split		
Jul. 1 st	-400 repurchase	$\times 6/12 \times 1.1$	- 220
Oct. 1 st	10% stock dividend		
The weighted average number of common stock outstanding			3,080

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculation of basic EPS.
- **Exam tips:**
 - ✓ 计算基本EPS。（必出计算题！）

Diluted Earnings Per Share

Tasks:

- **Describe** between dilutive and antidilutive securities, and describe the implications of each for the earnings per share calculation.

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

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▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Diluted EPS

- Dilutive securities **decrease EPS** if exercised or converted into new common stock
 - ✓ Convertible preferred stock
 - ✓ Convertible debt
 - ✓ Stock options / Warrants
- Anti-dilutive securities **increase EPS** if exercised or converted into common stock. (Don't include such security in the computation of dilutive EPS)
- **Diluted EPS can not be higher than Basic EPS**

Convertible Preferred Stock

1. 对分母的影响：转为普通股的股数
2. 对分子的影响：因转换而节省的优先股股利

$$\text{Diluted EPS} = \frac{(NI - \text{Div. preferred}) + (\text{Div. Conv preferred})}{\left(\begin{array}{c} \text{Weighted} \\ \text{average} \\ \text{shares} \end{array} \right) + \left(\begin{array}{c} \text{Shares from} \\ \text{conversion of} \\ \text{Conv. pfd} \end{array} \right)}$$

Example - Convertible Preferred Stock

Orange Company's net income for 2004 was \$7,600,000 with 2,000,000 shares outstanding. The average share price in 2004 was \$55. Orange had 10,000 shares of eight percent \$1,000 par value convertible preferred stock outstanding since 2003. Each preferred share was convertible into 20 shares of common stock. Orange Company's diluted earnings per share (Diluted EPS) for 2004 is closest to:

- A. \$3.45
- B. \$3.40
- C. \$3.80

Example - Convertible Preferred Stock

Answer: B

Conv. preferred stock :

$$\frac{(7,600,000 - 10,000 \times 8\% \times 1,000 + 10,000 \times 8\% \times 1,000)}{(2,000,000 + 10,000 \times 20)} = 3.45$$

$$\text{Basic EPS} = (7,600,000 - 10,000 \times 8\% \times 1,000) / 2,000,000 = 3.4$$

So, Anti-diluted!

$$\text{Diluted EPS} = 3.4$$

$$\text{Basic EPS} = 3.4$$

Convertible Debt

- 1.对分母的影响：转为普通股的股数
- 2.对分子的影响：因转换而节省的税后利息

$$\text{Diluted EPS} = \frac{(NI - \text{Div. preferred}) + (\text{Convdebt interest})(1 - t)}{\left(\begin{array}{c} \text{Weighted} \\ \text{average} \\ \text{shares} \end{array} \right) + \left(\begin{array}{c} \text{Shares from} \\ \text{conversion of} \\ \text{conv. debt} \end{array} \right)}$$

After-tax Interest on Convertible Debt

After-tax interest on convertible debt

I/S (partial)	No Debt Financing	Vs.	Debt Financing	Difference
EBIT	\$1,000		\$1,000	
Interest exp.	0		200	\$200 (Exp. increase)
EBT	\$1,000		\$800	
Tax exp. @40%	400		320	\$80 (Tax saving)
NI	\$600		\$480	\$120 (Actual cost of debt financing)

Actual cost of debt financing \$120 = \$200 - \$80, Tax saving \$80 = \$200×40%. Actual cost of debt financing = \$200 - \$200×40% = \$200×(1 - 40%) = Interest exp. ×(1 - tax rate)

Example - Convertible Bond

Golden Service Inc. had net income \$1,250,000, and pays non-convertible preferred stock dividend \$120,000. The company had a weighted average of 500,000 common shares outstanding during the year. There was \$750,000 of 8% convertible bonds outstanding, convertible into a total of 60,000 shares. Assuming the tax rate of 30 percent, calculate Golden Service's diluted EPS:

- A. \$2.13.
- B. \$1.94.
- C. \$2.09.

Example - Convertible Bond

Answer: C

$$\text{Basic EPS} = \frac{\text{NI-nonconv.ps dividend}}{\text{Weighted average No.CS}} = \frac{\$1,250,000 - 120,000}{500,000} = \$2.26$$

Diluted EPS

$$= \frac{\text{NI} - \text{nonconv.ps dividend} + \text{conv. bonds interest} \times (1 - t)}{\text{Weighted average No. CS} + \text{shares from conv. bonds}}$$

$$= \frac{\$1,250,000 - 120,000 + \$750,000 \times 8\% \times (1 - 30\%)}{500,000 + 60,000}$$

$$= \$2.09$$

Options and Warrants

- 1.对分母的影响： 库存股法下增加的普通股股数
- 2.对分子的影响： 无

$$\text{Diluted EPS} = \frac{(NI - \text{Div. preferred})}{\left(\begin{array}{c} \text{Weighted} \\ \text{average} \\ \text{shares} \end{array} \right) + \left(\begin{array}{c} \text{Shares issuable} \\ \text{from option / warrants} \end{array} \right)}$$

Treasury Stock Method for Options and Warrants

- Funds received from the exercise of the options would be used to **hypothetically repurchase** shares in the market *at the average market price*.
- The net increase in the number of shares: the difference between the number of **shares issued** and the number of shares **hypothetically repurchased**.

Example – Options / Warrants

The following relates to a company's common equity over the course of the year:

- Outstanding shares, at start of the year 2,000,000
- Stock options outstanding, at start & end of the year 100,000
- Exercise price: \$5.00
- Shares issued on April 1 300,000
- Shares repurchased (treasury shares) on July 1 200,000
- Average market price of common shares for the year \$20/share

If the company's net income for the year is \$5,000,000, its diluted EPS is closest to:

- A. \$2.17.
- B. \$2.20.
- C. \$2.27.

Example – Options / Warrants

Answer: C

Date	Common Stock	Adjustments	Subtotal
Jan. 1 st	2,000,000 outstanding	×12/12	=2,000,000
Apr. 1 st	+ 300,000 (new issue)	×9/12	+225,000
Jul. 1 st	- 200,000 (repurchase)	×6/12	- 100,000
The weighted average number of common stock outstanding			2,125,000

Stock Option 使得股票净增加量 = $100,000 - 5 \times 100,000 / 20 = 75,000$

Diluted EPS = $5M / (2.125 + (100,000 - 5 \times 100,000 / 20)) = 2.27$

Earnings Per Share

Diluted EPS (Cont.)

Basic EPS

Include only if
security is dilutive

$$\frac{\left(\text{net income} - \text{preferred dividends} \right) + \left(\text{convertible preferred dividend} \right) + \left(\text{convertible debt interest} \right) (1 - t)}{\left(\text{weighted average shares} \right) + \left(\text{shares from conversion of conv. pfd. shares} \right) + \left(\text{shares from conversion of conv. debt} \right) + \left(\text{shares issuable from options/warrants} \right)}$$

Include only if
security is dilutive

Chen's Question

- Only those securities that would **reduce EPS** below basic EPS if converted are used in the calculation of diluted EPS.
 - **Convertible preferred stock**: is dividends/new shares < basic EPS?
 - **Convertible debt**: is interest $(1 - t)/\text{new shares}$ < basic EPS?
 - **Options and warrants**: is avg. market price > exercise price?
- If the answer is **yes**, the security is **dilutive**.

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculation of dilutive EPS.
- **Exam tips:**
 - ✓ 计算摊薄后EPS。（必出计算题！）
 - ✓ 掌握三种复杂资本结构下EPS的计算，判断是稀释还是反稀释证券。

Analysis of Income Statement & Comprehensive Income

Tasks:

- **Convert** income statements to common-size income statements.
- **Describe, calculate, and interpret** comprehensive income.

Mindmap: Understanding the I/S

Understanding Income Statement

▶ Components and Format

General Principles of Revenue / Expense Recognition

▶ Five Steps in Recognizing Revenue

Earning Per Share

▶ Basic Earning Per Share

▶ Diluted Earning Per Share

Analysis of Income Statement

▶ Comprehensive Income

Common-Size Income Statement

- Express each income statement item as a **percentage of sales**.
- Used to analyze changes in cost structure, profitability and company's strategies.

Income statement item	Year 1	Year 2	Industry Avg
COGS	58%	63%	60%
SG&A	19%	24%	20%
Net income	8%	12%	10%

Comprehensive Income

Comprehensive income

- Comprehensive income includes both **net income** and **other comprehensive income**.

Other comprehensive income

- Foreign currency **translation** gains and losses.
- Adjustments for minimum pension liability (DB plan).
- **Unrealized** gains and losses from **cash flow hedging** derivatives.
- **Unrealized** gains and losses from **available-for-sale** securities.
- Valuation Surplus for long-lived asset (IFRS only).

Comprehensive Income

Comprehensive Income (\$)	
Net Income	100
Gain in foreign currency translation	20
Adjustment for minimum pension liabilities	(10)
Unrealized loss from cash flow hedging derivatives	(20)
Unrealized gain from available for sale securities	30
Comprehensive Income	120

Practice 1

An analyst gathered following information about TWG, a cake manufacturer:

Items (for the current year)	Amount
Net income	\$ 2,500
Dividend Paid	\$600
Realized loss from available-for-sale security	\$300
Actuarial gain from DB plan	\$200
Unrealized gain from trading security	\$500
Unrealized loss from cash flow hedging derivatives	\$100

What's the comprehensive income of TWG?

Practice 1

Answer:

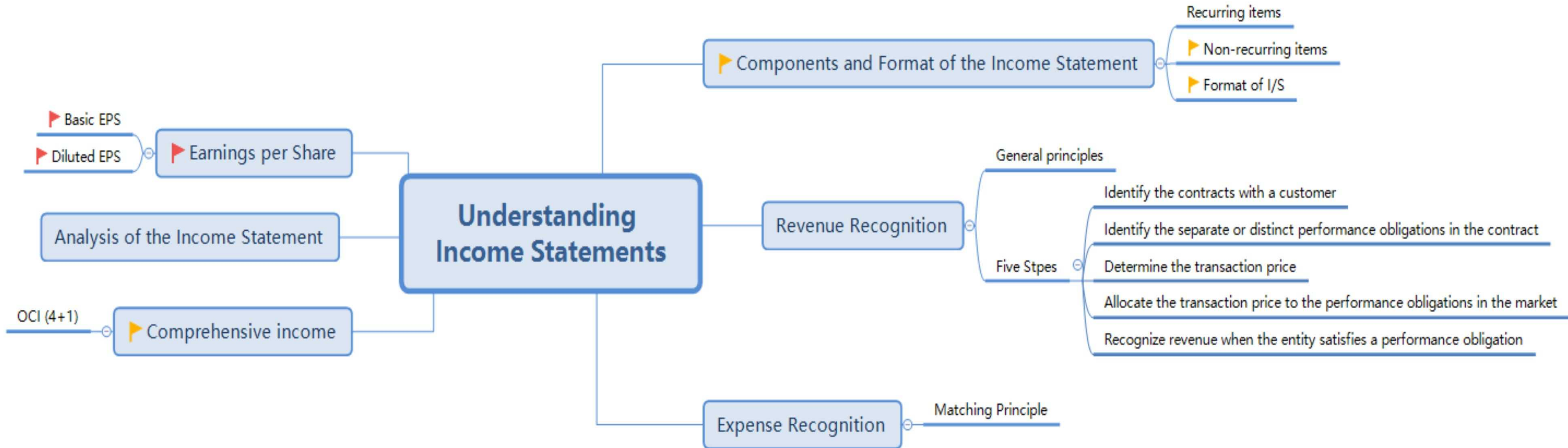
The calculation is showing below:

Items	Amount
Net income	\$ 2,500
Actual gain from DB plan	+ 200
Unrealized loss from cash flow hedging derivatives	- 100
Comprehensive Income	\$2,600

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Evaluate a company's financial performance using common-size income statements and financial ratios based on the income statement;
 - ✓ Calculate, and interpret comprehensive income.
- **Exam tips:**
 - ✓ 考查common size利润表的构成形式（基于Revenue），
 - ✓ 计算综合收益（对于OCI科目的记忆和辨析是关键）。

Summary for the Whole Reading

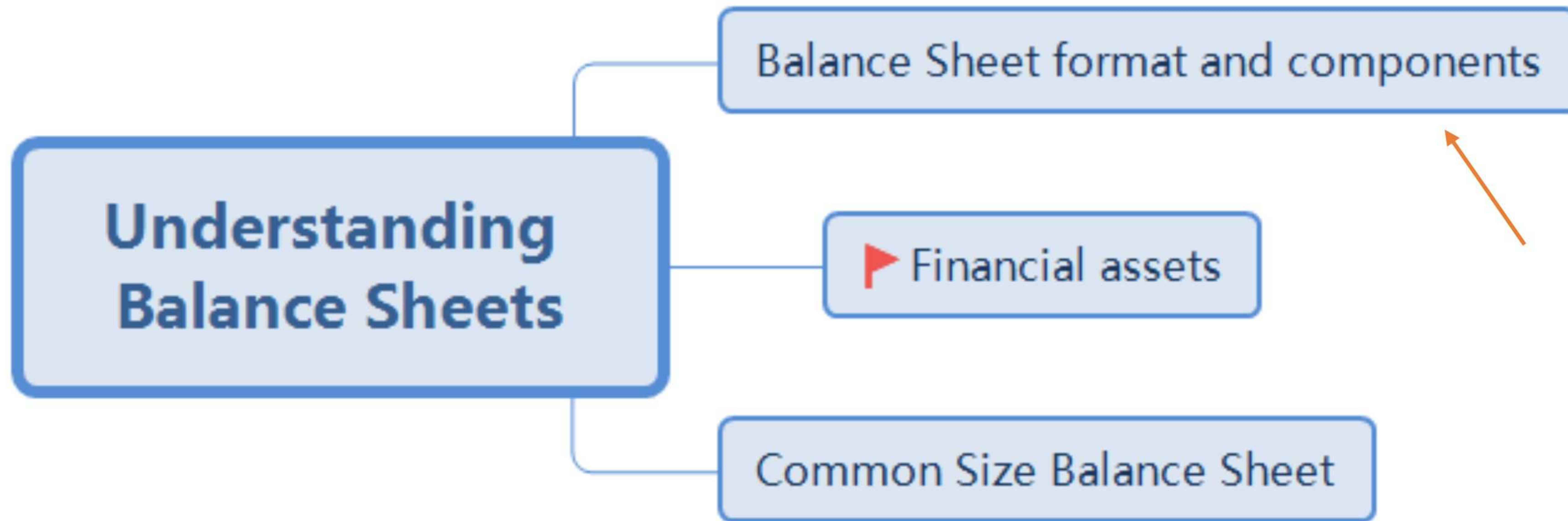


Components and Format – Asset

Tasks:

- **Describe** the elements of the balance sheet: assets.
- **Distinguish** between current and non-current assets.
- **Describe** different types of assets and the measurement bases of each.

Mindmap: Understanding the B/S



Components and Format

Assets

- Provide probable future economic benefits controlled by an entity as a result of previous transactions.
- Current and Non current assets (Long term assets)

Liabilities

- 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)

Equity

- Residual interest in assets that remains after subtracting a firm's liabilities.

Current Assets

- **Current assets** are held for the purpose of trading or expected to be sold, used up, or otherwise realized in cash within one year or one operating cycle of the business, whichever is greater.
 - ✓ **Cash and cash equivalents**
 - ✓ **Account receivable**
 - A **contra account** is **allowance for bad debts**.
 - ✓ **Inventory**
 - Unsold units of product on hand.
 - ✓ **Short-term marketable securities**

Non-Current Assets

➤ **Non-current assets** are not expected to be sold or used up within one year or one operating cycle of the business, whichever is greater.

✓ **Property, plant, and equipment (PP&E)**

- A contra account is **accumulated depreciation**.

✓ **Intangible assets**

- Patents, trademarks, copyright and **goodwill**.
- A contra account is **accumulated amortization**

✓ **Long – term investment**

✓ **Deferred tax assets**

Summary

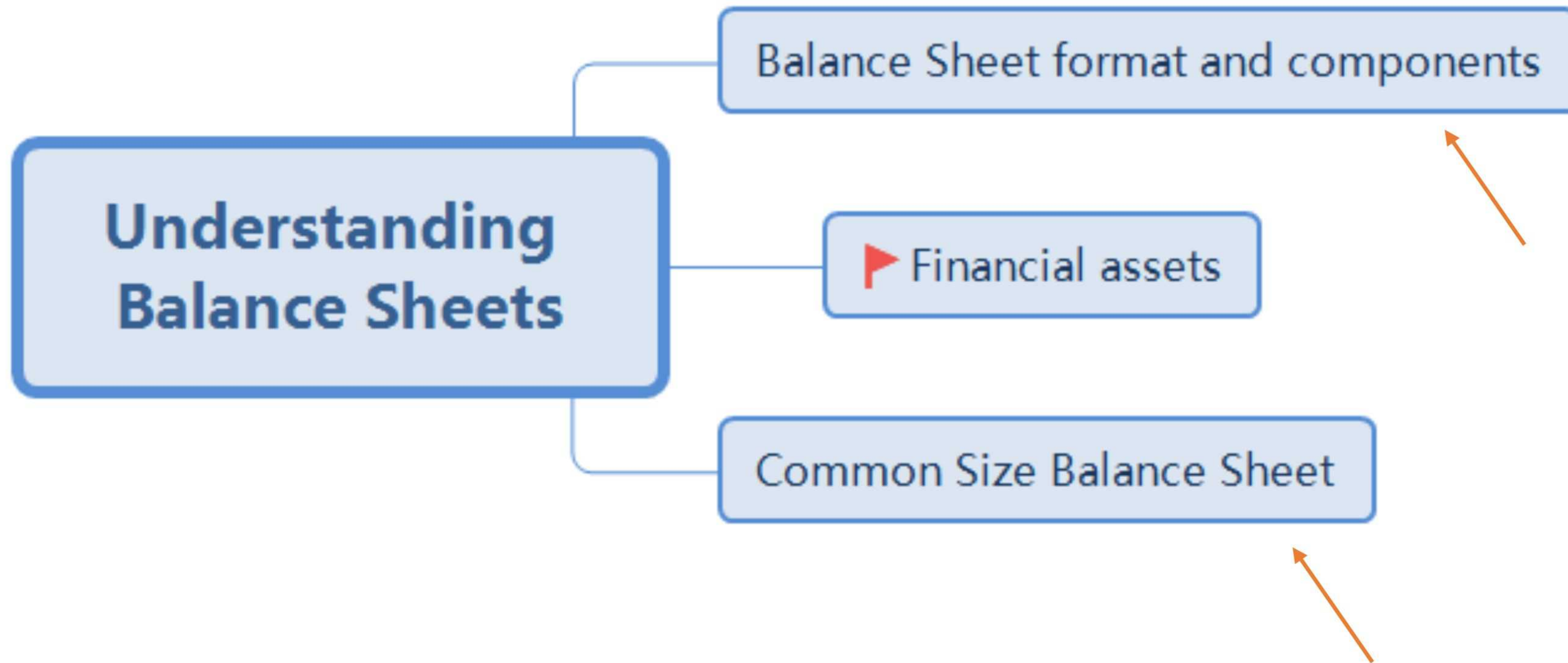
- **Importance:** ☆ ☆
- **Content:**
 - ✓ Elements of the balance sheet: assets.
 - ✓ Classified Balance Sheet.
- **Exam tips:**
 - ✓ 了解构成资产负债表的资产元素。
 - ✓ 了解资产负债表中各类measurement base。

Components and Format – Liability, Owner's Equity & Analysis of Balance Sheet

Tasks:

- **Describe** the elements of the balance sheet: liabilities, and equity.
- **Distinguish** between current and non-current liabilities.
- **Describe** common size Balance Sheet.

Mindmap: Understanding the B/S



Liability

- **Liabilities** are creditors' claims on the company's resource.
 - ✓ **Accounts payable**
 - ✓ **Unearned revenue**
 - Cash received in advance whereas the revenue will be recorded on future income statement.
 - ✓ **Accrued expense**
 - Cash paid later whereas the expense is recorded now.
 - ✓ **Tax payable**
 - Taxes accrued during the past year but not yet paid.
 - ✓ **Long-term debt**
 - Current portion of long term debt
 - ✓ **Deferred tax liabilities**

Measurement of Financial Elements

Measurement	Explanation
Historical cost	The amount originally paid for the asset.
Amortized cost	Historical cost adjusted for amortization of discount/premium.
Current cost	The amount the firm would have to pay today for the same asset.
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. (Willingness, Knowledgeable, Unrelated)

Owners' Equity

- **Owners' equity** is the residual claim on a company's resources ($E = A - L$).
- ✓ **Capital**
- ✓ **Additional paid-in-capital**
 - Capital in excess of par.
- ✓ **Treasury stock** (No voting right, no dividend)
 - Stock repurchased by the firm but not yet retired.
- ✓ **Retained earnings** (Net income - Dividend)
- ✓ **Accumulated other comprehensive income**
- ✓ **Minority interest**

Analysis of Balance Sheet

- A 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 ability to meet its **short-term** financial commitments.
 - Solvency is the ability to meet the company's **long-term** financial obligations.

Analysis of Balance Sheet

Common-size balance sheet

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

Assets	\$	Common size
Current assets	700	70%
Non-current assets	300	30%
Total assets	1000	100%
Liability & Equity	\$	Common size
Current liability	200	20%
Non-current liability	300	30%
Equity	500	50%
Total Equity & Liability	1000	100%

Summary

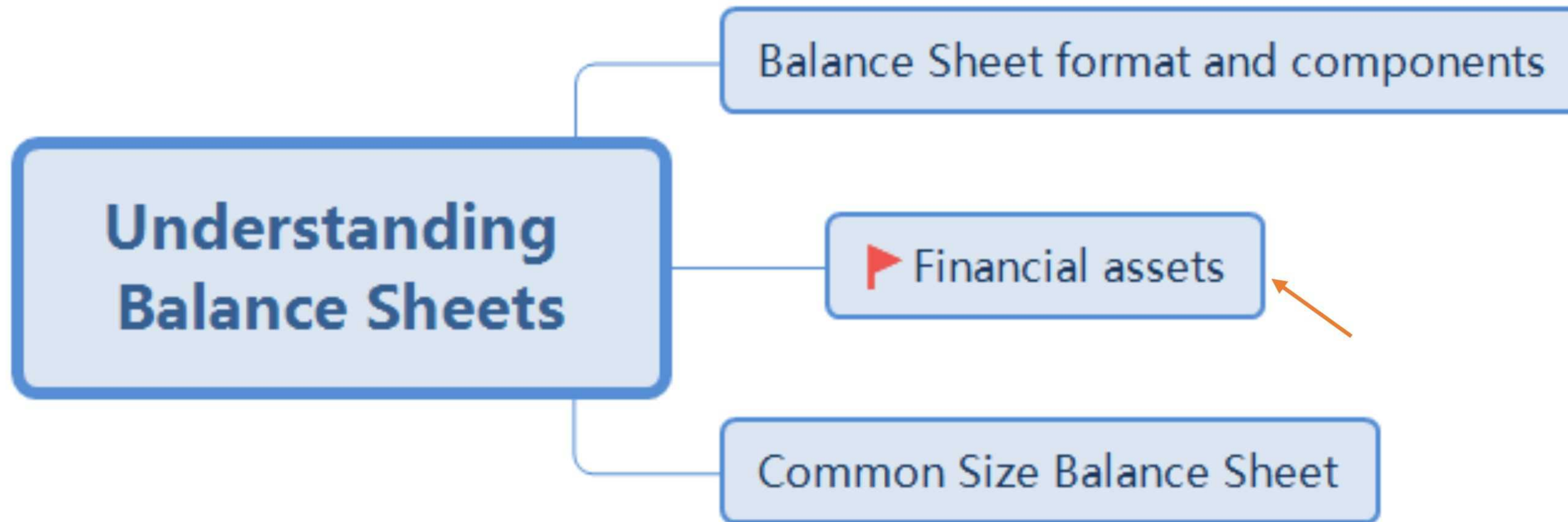
- **Importance:** ☆ ☆
- **Content:**
 - ✓ Elements of the balance sheet: liabilities, and equity.
 - ✓ Common Size Balance Sheet.
- **Exam tips:**
 - ✓ 了解构成资产负债表的负债、所有者权益元素。
 - ✓ 记忆Common Size 形式的资产负债表的记账方法。

Financial Assets

Tasks:

- **Describe** classification and accounting treatments of different types of financial assets.

Mindmap: Understanding the B/S



Classification of Financial Assets

分类	定义	资产类别
Held-to-Maturity 持有至到期的金融资产	企业有能力且有意愿持有至到期的金融资产	债券
Trading Security 交易性金融资产	企业以短期获利为目的持有的金融资产	债券、股票
Available-for-Sale 可供出售的金融资产	不满足以上两项定义的金融资产	债券、股票

Trading / AFS - Chen's Example - 1

	Trading Securities	Available for Sale Securities
Recognition	Fair value	Fair value
Unrealized G/L	I/S	OCI
Realized G/L	I/S	I/S

- ① T=0, buy 10 shares stocks @ \$10
- ② T=1, each stock pay cash dividend \$1, and price of the stock is still @ \$10
- ③ T=2, stock's price is @ \$12, and still hold them
 - Trading security
 - Available-for-sale security

Trading / AFS - Chen's Example - 2

	Trading Securities	Available for Sale Securities
Recognition	Fair value	Fair value
Unrealized G/L	I/S	OCI
Realized G/L	I/S	I/S

- ① T=0, buy 10 shares stocks @ \$10
- ② T=1, stock's price is @ \$12, and **sell 4 shares**
 - Trading security
 - Available-for-sale security

HTM - Chen's Example - 3

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

- T=0, buy a bond with coupon rate = 10% and par value = \$1000, market yield = 8%, the bond has two years for maturity.
- T=1, market price equals to \$1030.

HTM - Chen's Example - 4

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

- T=0, buy a bond with coupon rate = 10% and par value = \$1000, market yield = 12%, the bond has two years for maturity.
- T=1, market price equals to \$960.

Accounting Treatments of Financial Assets

	Trading Securities	Available for Sale Securities	Held to Maturity
Recognition	Fair value	Fair value	Amortized cost
Unrealized G/L	I/S	OCI	Not reported
Realized G/L	I/S	I/S	I/S

Example

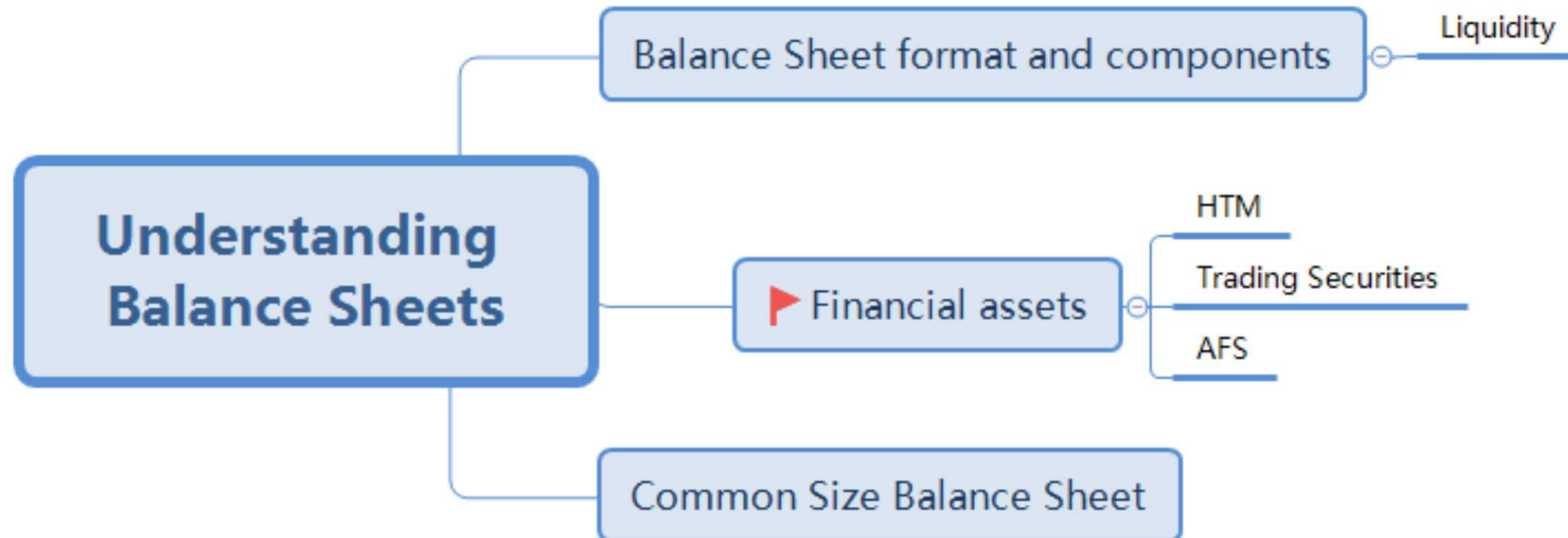
Purchase a 4% bond at par, for 1000 at the beginning of the year. Interest rate have recently increase and the market value declined to 930. Determine the bond's effect under each classification of securities:

	B/S	I/S	OCI
Held to Maturity	Financial asset 1000	Interest income 40	
Trading Securities	Financial asset 930	Interest Income 40 Unrealized loss -70	
Available for Sale Securities	Financial asset 930	Interest Income 40	Unrealized loss -70

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Classification of financial assets
 - ✓ Measurement of financial assets.
- **Exam tips:**
 - ✓ 金融资产三分类；
 - ✓ 金融资产记账方法具体记账方式。

Summary for the Whole Reading

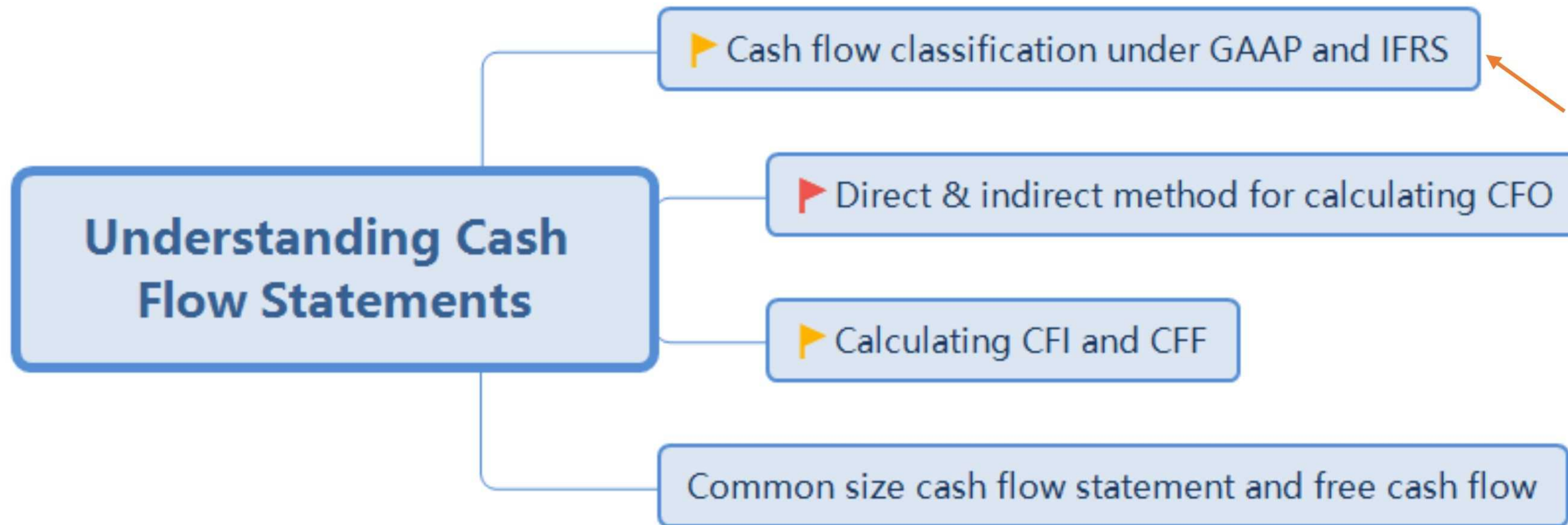


Cash Flow Classification

Tasks:

- **Compare** cash flows from operating, investing, and financing activities and classify cash flow items;
- **Contrast** cash flow statements prepared under GAAP and IFRS.

Mindmap: Understanding the C/F



Components and Format

- Information about a company's **cash receipts and cash payments** during an accounting period.
- Information on the CFS come from two sources
 - ✓ Income statement items
 - ✓ Changes in current 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

Components and Format

Cash flow from operating activities (CFO)

- include the company's **day-to-day activities** that create revenues and other activities that affect a firm's net income.

Cash flow from investing activities (CFI)

- Consists of activities of purchasing and selling **long-term assets** and **other investments**, **exclude** any securities considered cash equivalents and securities held for dealing or trading purposes.

Cash flow from financing activities (CFF)

- Include financing activities of **obtaining or repaying capital**.

U.S. GAAP Cash Flow Classification

Cash flows from operating activities <i>Cash flows resulting from major business of company</i>	
Inflows	Outflows
Cash received from customers	Cash paid to suppliers
Interest received	Interest paid
Dividend received	Cash expenses paid for ordinary business (salaries, taxes, advertising...)
Sale proceeds from trading securities	Acquisition of trading securities

U.S. GAAP Cash Flow Classification

Cash flows from investing activities <i>Cash flows resulting from acquisition and disposal of long-term asset and other investments</i>	
Inflows	Outflows
Sale proceeds from PP&E, intangible assets	Acquisition of PP&E, intangible assets
Sale proceeds from non-trading securities	Acquisition of non-trading securities
Principal received from loans made to others	Loans made to others

U.S. GAAP Cash Flow Classification

Cash flows from financing activities <i>Cash flows resulting from transactions that affect firm's capital structure</i>	
Inflows	Outflows
Principal amounts of debt issued	Principal paid on debt
Proceeds from issuing shares	Payment to repurchase shares
	Dividends paid to shareholders

US GAAP vs. IFRS

Items	U.S. GAAP	IFRS
Interest received	CFO	CFO or CFI
Dividends received	CFO	CFO or CFI
Interest paid	CFO	CFO or CFF
Dividends paid	CFF	CFO or CFF
Taxes paid	CFO	CFO, CFI or CFF

Practice

A company using IFRS reports its interest payments on long-term debt as a financing activity. If the company reported under US GAAP, the most likely effect would be a:

- A. higher cash flow from operations.
- B. higher cash flow from financing activities.
- C. lower cash flow from investing activities.

Answer: B

Summary

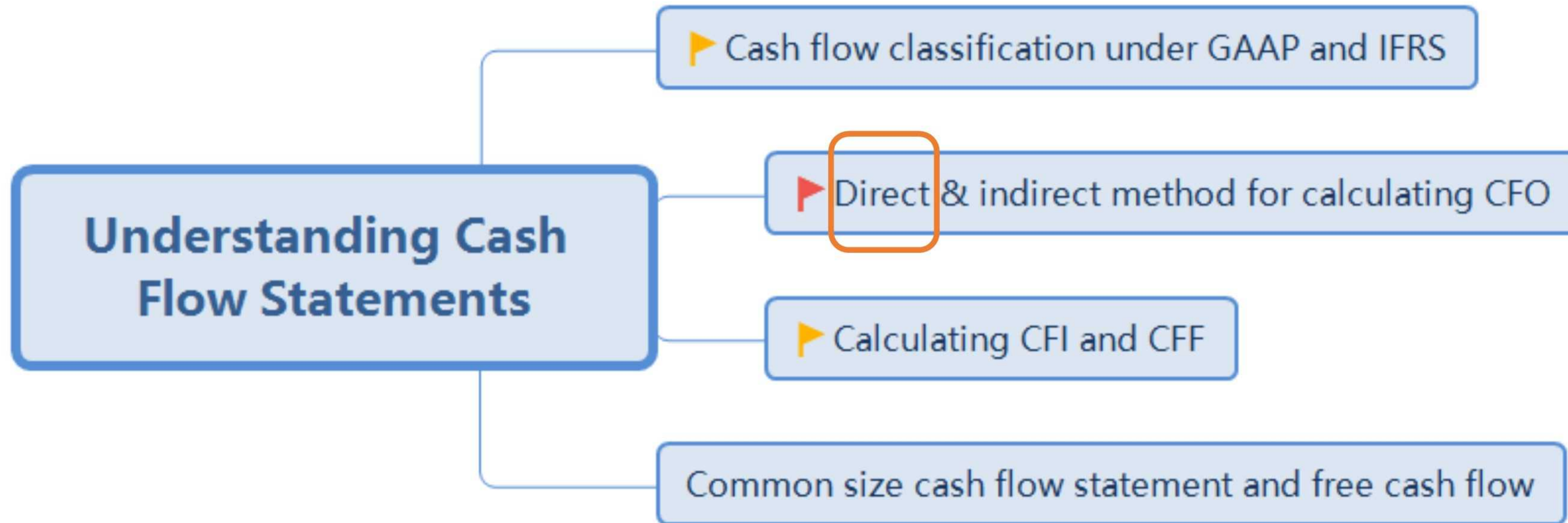
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Classification of CFO, CFI and CFF (US GAAP Vs. IFRS).
- **Exam tips:**
 - ✓ 辨析各种类型的现金流。
 - ✓ 辨析现金流分类在美国和国际准则间的差异。

Calculation of CFO – Direct Method

Tasks:

- **Distinguish** between the direct and indirect methods of presenting cash from operating activities;
- **Describe** the steps in the preparation of direct cash flow statements.

Mindmap: Understanding the C/F



Methods to Calculate Cash Flow

➤ CFO calculation

- **Direct method:** begin at the top of the income statement and identify cash inflows and outflows.
- **Indirect method:** begin at the bottom of the income statement with net income and make necessary adjustments.

➤ CFO / CFI calculation: **direct method**

CFO Calculation by Direct Method

Cash received from customers	Beginning A/R + Revenue – <i>Cash received</i> = Ending A/R
– Cash paid to suppliers	Beginning A/P + Purchase – <i>Cash paid</i> = Ending A/P Beginning Inventory + Purchase – COGS = Ending Inventory
– Cash paid to employees	Beginning wage payable + Wage expense – <i>Cash paid</i> = Ending wage payable
– Interest paid	Beginning interest payable + Interest expense – <i>Cash paid</i> = Ending interest payable
– Taxes paid	Beginning tax payable + taxable income × tax rate – <i>Cash paid</i> = Ending tax payable
= CFO	

Example

- Sales Revenue and COGS are 600, 300 Respectively

	Beginning	Ending
A/R	200	300
Inventory	400	200
A/P	500	550

- **Cash received from customer:**
- ✓ $\text{A/R beg} + \text{Sales} - \text{Cash received} = \text{A/R end}$
 - ✓ $200 + 600 - \text{Cash received} = 300$
 - ✓ $\text{Cash received} = 500$

Example

- Sales Revenue and COGS are 600, 300 Respectively

	Beginning	Ending
A/R	200	300
Inventory	400	200
A/P	500	550

- **Cash paid to supplier:**

- ✓ $\text{Inventory beg} + \text{Purchase} - \text{COGS} = \text{Inventory end}$
- ✓ $400 + \text{Purchase} - 300 = 200 \rightarrow \text{Purchase} = 100$
- ✓ $\text{A/P beg} + \text{Purchase} - \text{Cash paid to supplier} = \text{A/P end}$
- ✓ $500 + 100 - \text{Cash paid} = 550 \rightarrow \text{Cash paid to supplier} = 50$

Summary

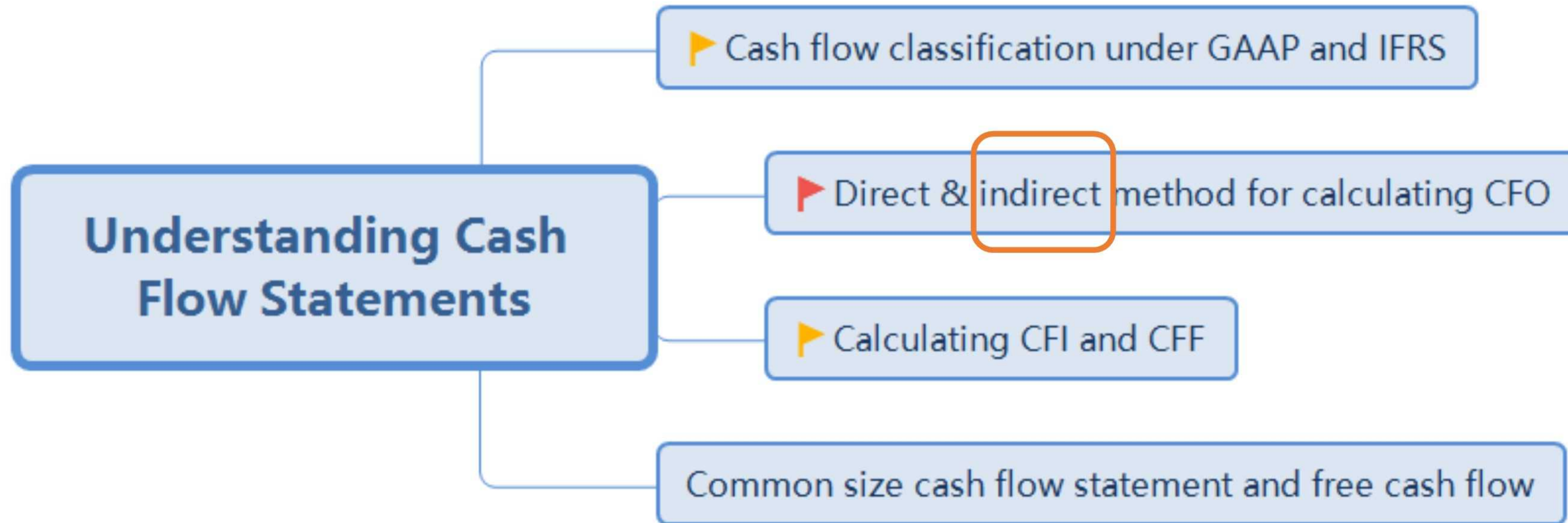
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Direct methods of presenting cash from operating activities.
- **Exam tips:**
 - ✓ 直接法计算经营性现金流。

Calculation of CFO – Indirect Method

Tasks:

- **Describe** the steps in the preparation of indirect cash flow statements;
- **Convert** cash flows from the indirect to direct method.

Mindmap: Understanding the C/F



CFO Calculation by Indirect Method

Net income	Income statement items
+ Non Cash Charge <i>(eg: depreciation, amortization)</i>	
+/- Non operating items <i>(eg: gain from selling the old machine)</i>	
- Increase in current asset accounts <i>(eg: A/R, Inventory)</i>	Balance sheet items
+ Increase in current liability accounts <i>(eg: A/P, Tax payable)</i>	
= CFO	

Practice 1

Net income \$100,000

Increase in accounts receivable 12,000

Increase in accounts payable 9,000

Depreciation and amortization 8,000

Items	Amounts
Net income	\$100,000
+Depreciation & amortization	8,000
–Increase in AR	12,000
+Increase in AP	9,000
Change in CFO	\$105,000

Practice 2

- Balances as of the year ended 31

	Dec 2008	2007
Retained earnings	140	120
Accounts receivable	43	38
Inventory	48	45
Accounts payable	29	36
- In 2008 the company paid cash dividends of \$5 million and recorded depreciation expense in the amount of \$25 million.
- The company's 2008 **cash flow from operations** is closest to:

$$\$20 + 5 \text{ (dividends)} + 25 \text{ (depreciation)} - 5 \text{ (increase in receivables)} - 3 \text{ (increase in inventory)} - 7 \text{ (decrease in payables)} = \$35 \text{ million}$$

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ indirect methods of presenting cash from operating activities.
- **Exam tips:**
 - ✓ 间接法计算经营性现金流。

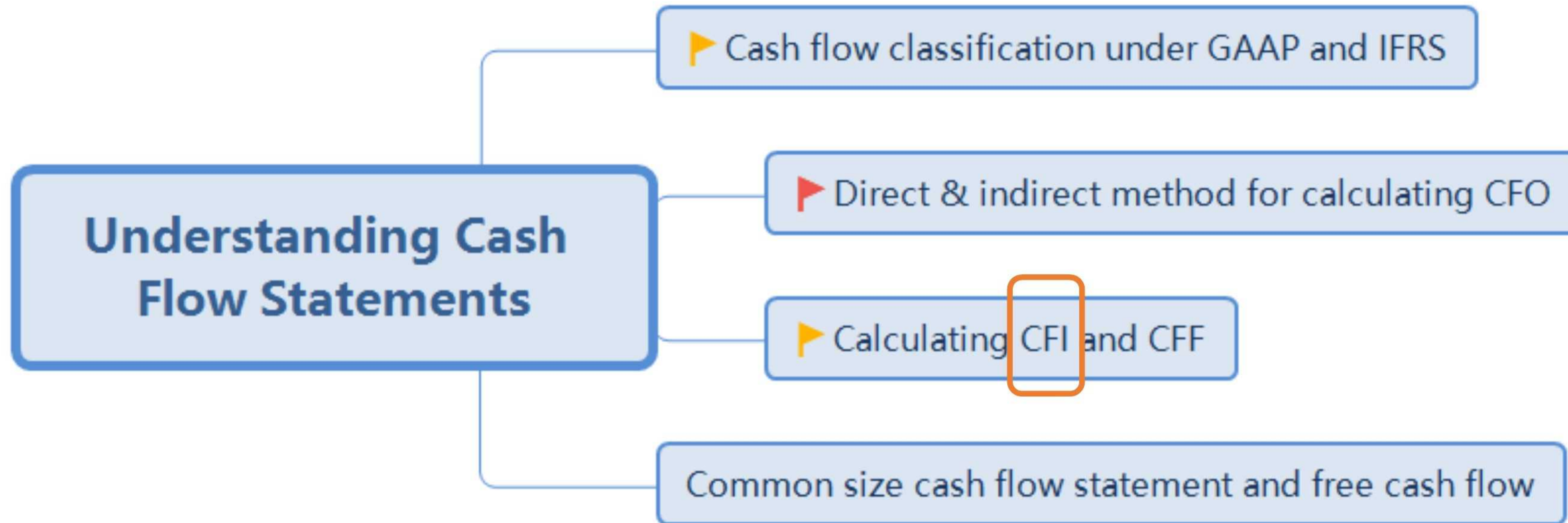
Understanding the C/F

Calculation of CFI

Tasks:

- Calculate CFI.

Mindmap: Understanding the C/F



Sources of CFI

- Long-lived assets
 - Cash used in purchase PPE and other intangible assets
 - Cash received from sale of PPE and other intangible assets
- Non-trading securities

CFI Calculation

➤ $CFI = \text{inflow} - \text{outflow}$

Chen's Example 1

- The Company sold a machine. Income statement shows 0.5 million gain from selling old machine and 4 million depreciation cost. The balance sheet shows:

	2012	2013
Machine Original cost	12	19
Accumulated Depreciation	(5)	(7)

- **During the year, company pay 10 million for new machine.**
1. How much cash did the company received from selling the old one?
 2. What is the CFI for this year?

Chen's Example 2

- The Company sold a machine. Income statement shows 0.5 million gain from selling old machine and 4 million depreciation cost. The balance sheet shows:

	2012	2013
Machine Original cost	12	19
Accumulated Depreciation	(5)	(7)

- What is the CFI for this year?

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculate CFI.
- **Exam tips:**
 - ✓ 计算投资性现金流。

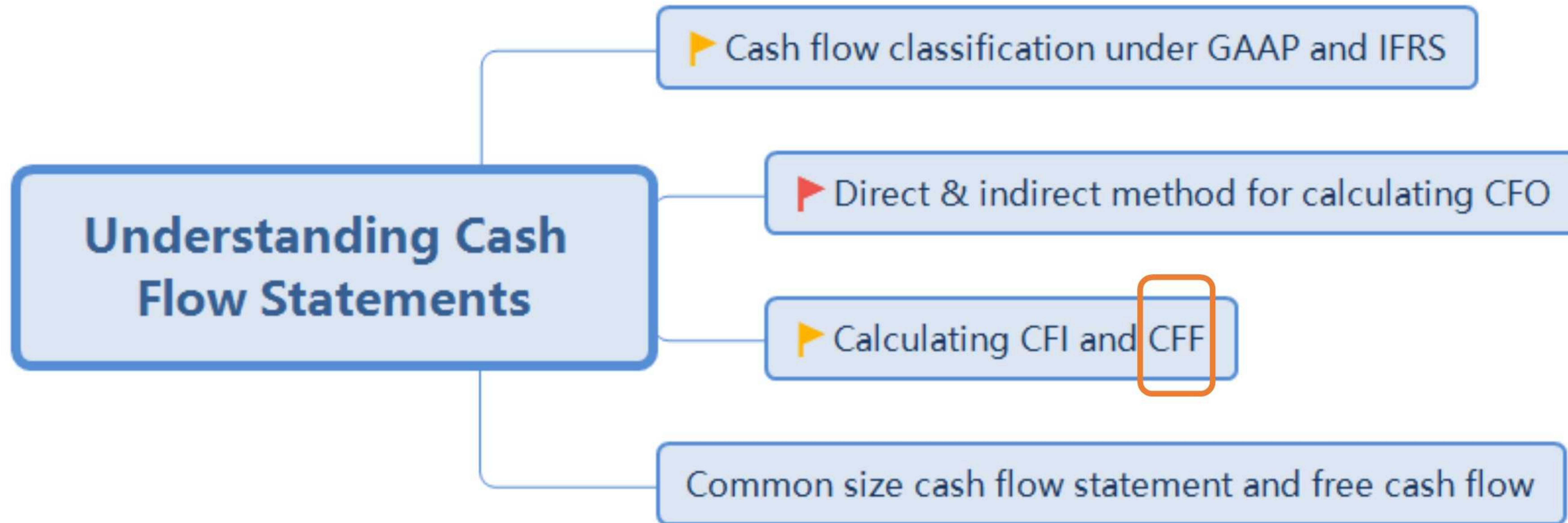
Understanding the C/F

Calculation of CFF

Tasks:

- Calculate CFF.

Mindmap: Understanding the C/F



CFF Calculation

Step 1: Review long-term debt and stock

- Increases supply cash and decreases use cash.

Step 2: Dividend paid

- Dividend payable end

$$= \text{Dividend payable beg} + \text{Dividend declared} - \text{Dividend paid}$$

- Retained earning end

$$= \text{Retained earning beg} + \text{Net Income} - \text{Dividend declared}$$

Example

- Net Income 1000

	2012	2013
Beginning Retained Earning	500	1000
Dividend Payable	300	200

- How much cash dividend paid during 2013?

Answer:

- $R/E \text{ end} = R/E \text{ beg} + \text{Net Income} - \text{Dividend declared}$
- $1000 = 500 + 1000 - \text{Dividend Declared} \rightarrow \text{Div. Decl.} = 500$
- $\text{Div. payable}_{\text{end}} = \text{Div. payable}_{\text{beg}} + \text{Dividend declared} - \text{Div. paid}$
- $200 = 300 + 500 - \text{Div. paid} \rightarrow \text{Div. paid} = 600$

Summary

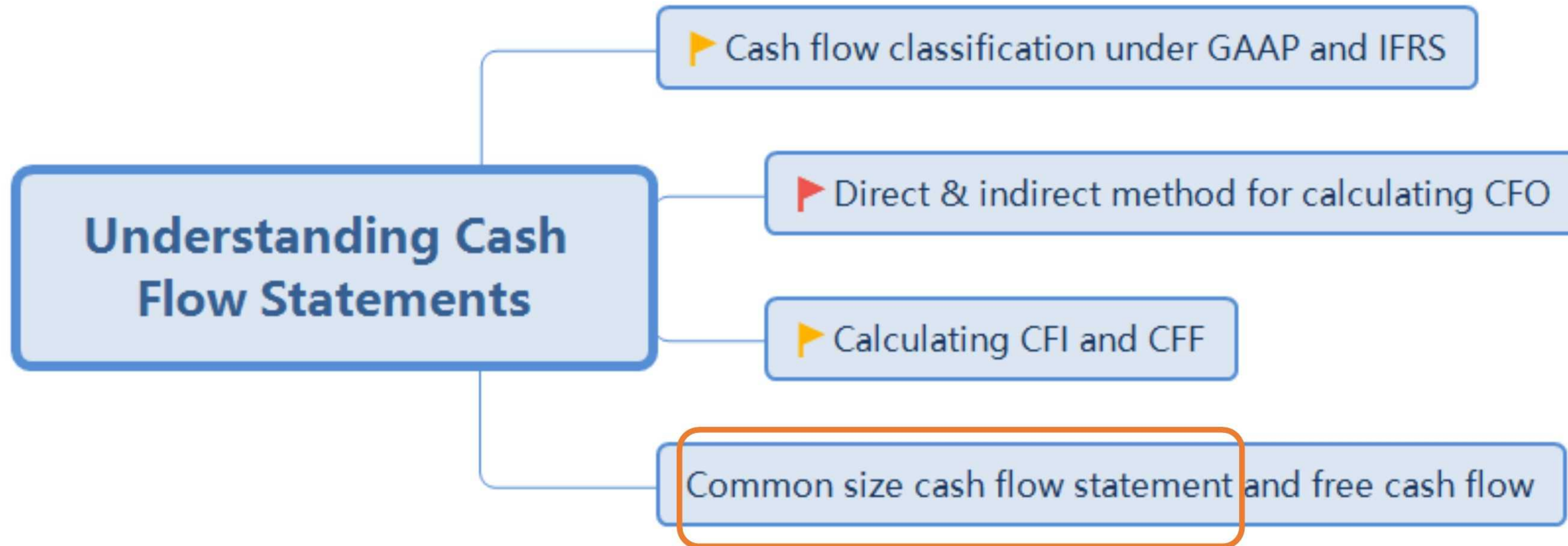
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculate CFF.
- **Exam tips:**
 - ✓ 计算融资性现金流。

Analysis of Cash Flow

Tasks:

- **Analyze and interpret** both reported and common-size cash flow statements.

Mindmap: Understanding the C/F



Analysis of Cash Flow

- Analyst should evaluate the **sources, uses and main drivers** of each type of cash flow:
 - ✓ Evaluate where the major **sources and uses** of cash flow are between operating, investing, and financing activities.
 - ✓ Evaluate the primary determinants of CFO/CFI/CFF.

Analysis of Cash Flow

Examine the major sources and uses of cash

- Operating Cash Flow
 - ✓ An indication of the company's **earning quality**.
- Investing Cash Flow
 - ✓ Increasing **capital expenditures**, a use of cash, is usually an **indication of growth**.
- Financing Cash Flow
 - ✓ The nature of company's capital sources.
 - ✓ Cash requirement for debt repayments, share repurchase, or dividend payments.

Common Size Cash Flow Statement

- Show each item as a % of Revenue

$$\frac{\text{Cash flow statement account}}{\text{Revenue}}$$

- Show each inflow as a % of total inflows; Show each outflow as a % of total outflows

$$\frac{\text{Cash inflow}}{\text{Total cash inflows}}$$

$$\frac{\text{Cash outflow}}{\text{Total cash outflows}}$$

Summary

- **Importance:** ☆
- **Content:**
 - ✓ Common-size cash flow statements.
- **Exam tips:**
 - ✓ 转化 common size cash flow statement

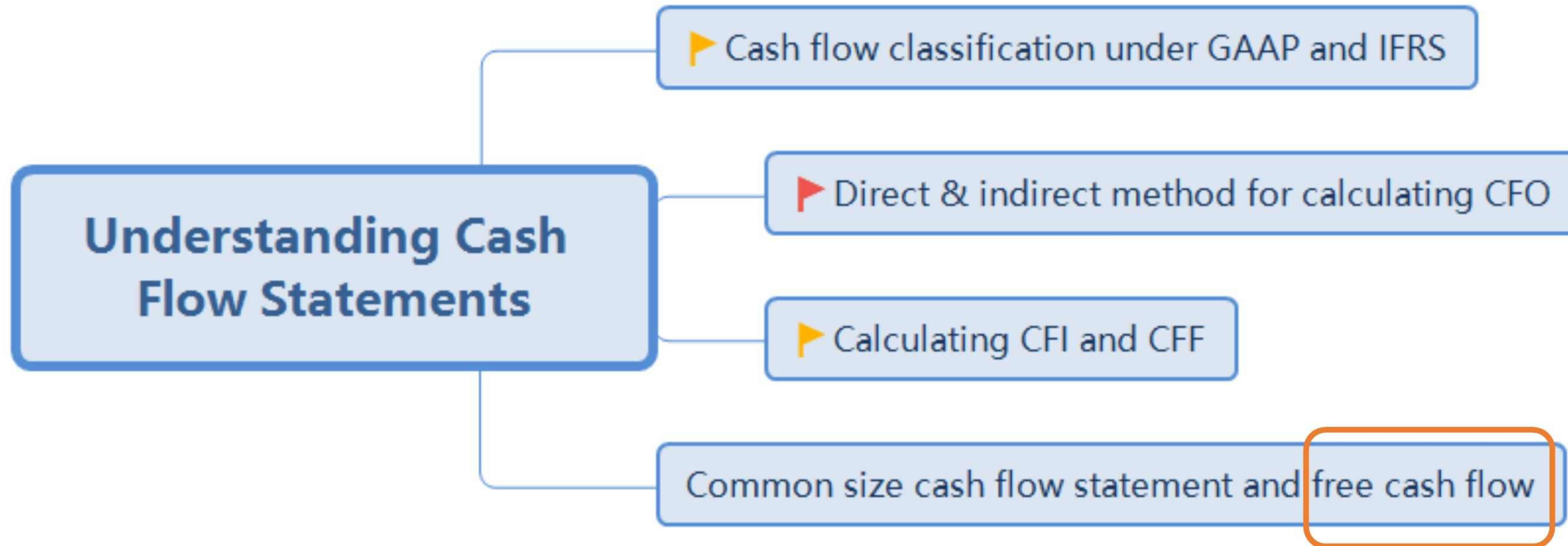
Understanding the C/F

Free Cash Flow

Tasks:

- Calculate and interpret free cash flow to the firm, free cash flow to equity.

Mindmap: Understanding the C/F



Free Cash Flow

- **Free cash flows** are the cash flows **available** for distribution after fulfilling all obligations (operating expenses and taxes) and without impacting on the future growth plans of the company (working capital and fixed capital)
- ✓ **Free cash flow to firm (FCFF)**: Cash available to **creditors and shareholders** after all operating expenses and necessary investments have been made.
- ✓ **Free cash flow to equity (FCFE)**: Cash available to **common stockholders** after all borrowing costs (principal and interest) have been paid from FCFF.

FCF Formulas

$$\text{FCFF} = \text{NI} + \text{NCC} - \text{WC Inv.} - \text{FC Inv.} + [\text{Interest exp.} \times (1 - \text{tax rate})]$$



$$\text{FCFF} = \text{CFO} - \text{FC Inv.} + [\text{Interest exp.} \times (1 - \text{tax rate})]$$

$$\text{FCFE} = \text{FCFF} - [\text{Interest exp.} \times (1 - \text{tax rate})] + \text{Net debt borrowing}$$

$$\text{FCFE} = \text{CFO} - \text{FC Inv.} + \text{Net debt borrowing}$$

- NI = net income
- NCC = noncash charges (depreciation and amortization)
- FC Inv. = fixed capital investment (net capital expenditure)
- WC Inv. = working capital investment
- Net debt borrowing = debt issued – debt repaid

Practice

- The following selected data are available for a firm:
- Net income 90.0
 - Non-cash charges 15.2
 - Interest expense 28.0
 - Capital expenditures 34.3
 - Working capital expenditures 13.0
- If the firm's tax rate is 40%, the free cash flow to the firm (FCFF) is closest to:
- $$\text{FCFF} = \text{NI} + \text{NCC} - \text{WC Inv.} - \text{FC Inv.} + [\text{Interest exp.} \times (1 - t)]$$
$$= 90 + 15.2 - 13 - 34.3 + 28 \times (1 - 40\%) = 74.7$$

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Free cash flow to the firm, free cash flow to equity.
- **Exam tips:**
 - ✓ 计算两种自由现金流（公司和股东）。

Summary for the Whole Reading

Understanding Cash Flow Statements

Cash flow classification

★ general classification

★ special classification

Direct and indirect method for calculating

★ direct : BASE 法则

★ indirect : 三步法

Calculating CFI and CFF

★ 通过classification考察计算

★ 考察BASE法则

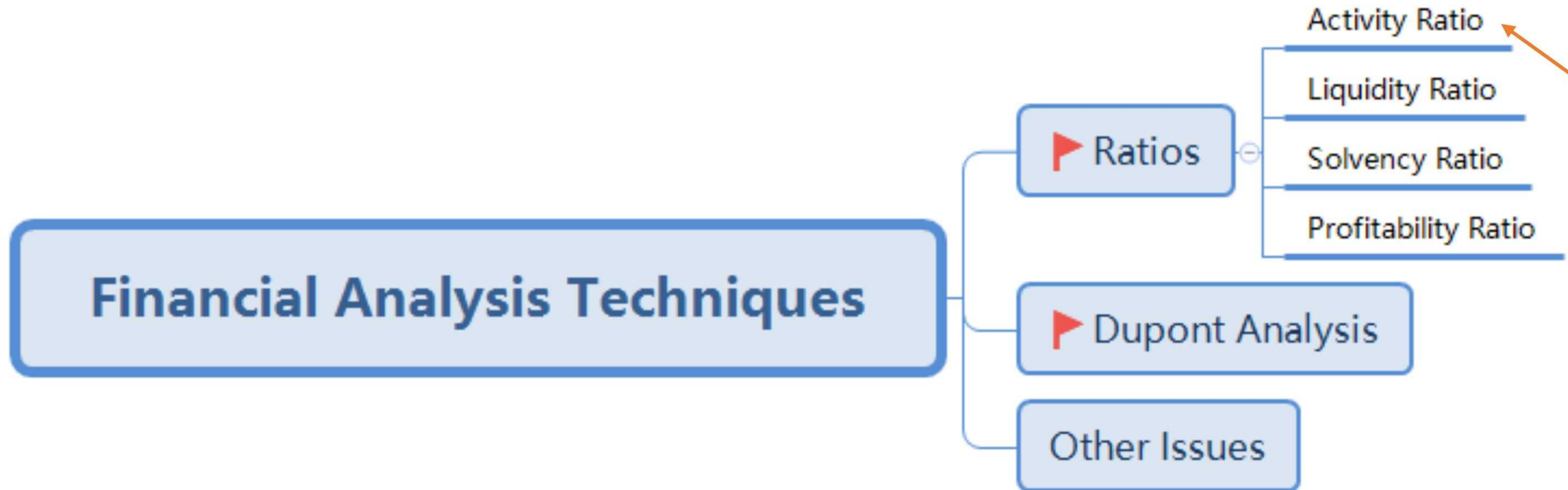
Common size cash flow and free cash flow

Ratio Analysis – Activity Ratios

Tasks:

- Classify, calculate, and interpret activity ratios.
- Describe relationships among ratios and evaluate a company using ratio analysis.

Mindmap: Financial Analysis Techniques



Categories of Common Ratios

- **Activity** ratio
 - ✓ Efficiency in using assets to generate revenue.
- **Liquidity** ratio
 - ✓ Ability to meet short-term obligations.
- **Solvency** ratio
 - ✓ Ability to meet long-term obligations.
- **Profitability** ratio
 - ✓ Ability to generate profit.

Activity Ratios

- **Inventory turnover** = $\text{COGS} / \text{Average inventory}$
 - **Days of inventory on hand (DOH)** = $365 / \text{Inventory turnover}$
- **Receivable turnover** = $\text{Revenue} / \text{Average Receivable}$
 - **Days of sales outstanding (DSO)** = $365 / \text{Receivable turnover}$
- **Payable turnover** = $\text{Purchase} / \text{average Accounts payable}$
 - **Number of days of payable** = $365 / \text{Payable turnover}$
- **Total asset turnover** = $\text{Revenue} / \text{Average total assets}$
- **Fixed asset turnover** = $\text{Revenue} / \text{Average net fixed assets}$
- **Working capital turnover** = $\text{Revenue} / \text{Average WC}$
 - ✓ **Working capital** = $\text{Current assets} - \text{Current liabilities}$

Operating Cycle & Cash Conversion Cycle

Inventory	Account receivable	Account payable
Inventory turnover = COGS / average inventory	Receivable turnover = Revenue / average Receivable	Payable turnover = Purchase / average A/P
Days of inventory on hand (DOH) = 365 / Inventory turnover	Days of sales outstanding (DSO) = 365 / Receivable turnover	Number of days of payable = 365 / Payable turnover
Operating cycle = DOH + DSO		
Cash conversion cycle = DOH + DSO – Number of days of payables		

Practice

Selected information for a company is provided below.

Sales	4,800
Cost of goods sold	2,880
Average receivables	625
Beginning inventory	500
Ending inventory	1,200
Average payables	145

The company's cash conversion cycle (in days) is closest to:

- A. 170.
- B. 140.
- C. 137.

Practice

Answer: B

Cash conversion cycle = DOH + DSO – Number of days of payables

$$\begin{aligned}\text{DOH} &= 365 / \text{Inventory turnover} = 365 / (\text{COGS} / \text{Average inventory}) \\ &= 365 / (2880 / 850) = 107.7 \text{ days}\end{aligned}$$

$$\begin{aligned}\text{DSO} &= 365 / \text{Sales turnover} = 365 / (\text{Revenue} / \text{Average receivable}) \\ &= 365 / (4800 / 625) = 47.53 \text{ days}\end{aligned}$$

$$\begin{aligned}\text{Number of days of payable} &= 365 / \text{Payable turnover} = 365 / \\ &(\text{Purchase} / \text{Average payables})\end{aligned}$$

$$\text{Inventory ending} = \text{Inventory beg.} + \text{Purchase} - \text{COGS}$$

$$\begin{aligned}\text{Purchase} &= \$3580, \text{ Number of days of payable} = 365 / (3580 / 145) \\ &= 14.78 \text{ days}\end{aligned}$$

$$\text{Cash conversion cycle} = 107.7 + 47.53 - 14.78 = 140 \text{ days}$$

Summary

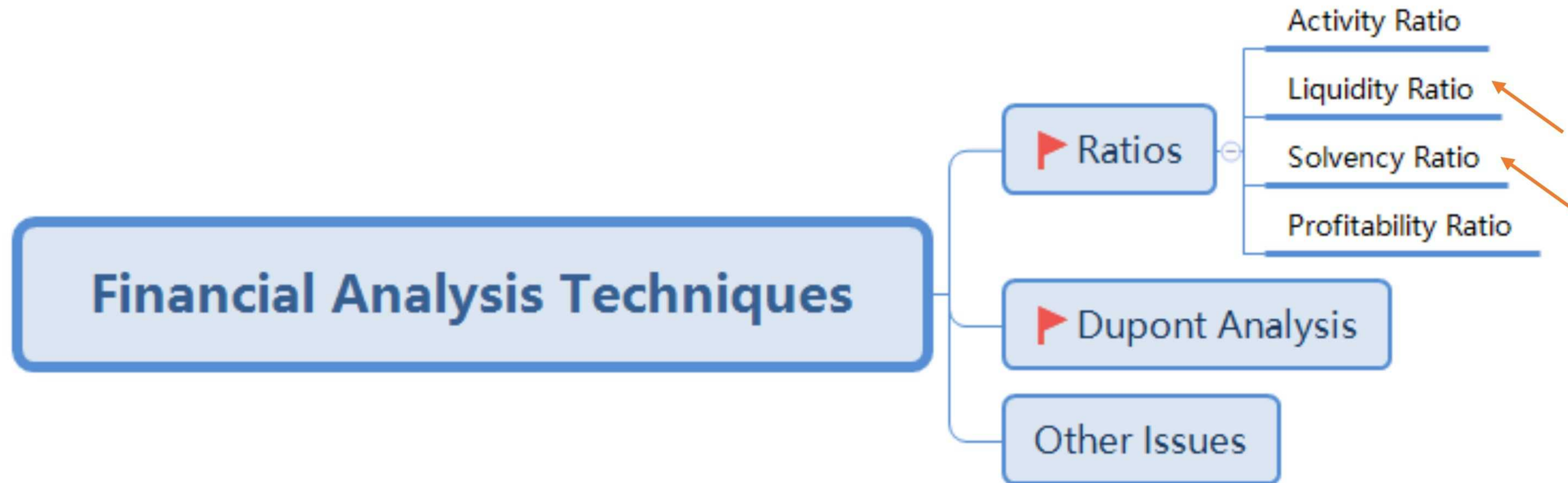
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Activity ratios.
- **Exam tips:**
 - ✓ 辨析各类典型的财务比率;
 - ✓ 计算Cash/Operating conversion cycle.

Ratio Analysis – Liquidity Ratios & Solvency Ratios

Tasks:

- **Classify, calculate, and interpret** liquidity and solvency ratios.
- **Describe** relationships among ratios and evaluate a company using ratio analysis.

Mindmap: Financial Analysis Techniques



Liquidity Ratios

A firm's ability to meet short-term obligations

- **Current Ratio** = Current assets / Current liabilities
- **Quick Ratio** = (Cash + short-term marketable security + Receivable) / Current liabilities
- **Cash Ratio** = (Cash + short-term marketable security) / Current liabilities
- **Defensive interval** = (Cash + short-term marketable security + Receivable) / Daily cash expenditures

Solvency Ratios

A firm's ability to pay long – term debt

- Debt-to-equity ratio = Total Debt / Total shareholder's Equity
- Debt-to-capital = Total Debt / (Total Debt + Total shareholder's Equity)
- Debt-to-assets = Total Debt / Total Assets
- Debt-to-EBITDA = Total Debt / EBITDA
- **Financial leverage** = Average total assets / Average total Equity

*Total debt is the sum of interest-bearing short-term & long-term debt.

Coverage Ratios

- **Interest coverage** = $\text{EBIT} / \text{Interest}$
- **Fixed charge coverage**
= $(\text{EBIT} + \text{lease payments}) / (\text{Interest} + \text{lease payments})$

Practice

- An analyst gathered following data:
 - ✓ EBIT = 250
 - ✓ EBITDA = 275
 - ✓ Interest payment = 100
- The analyst found that fixed charge coverage ratio was 2.
What's the lease payments during the year?
- Fixed charge coverage = $(\text{EBIT} + \text{lease payments}) / (\text{Interest} + \text{lease payments})$
 - ✓ $2 = (250 + \text{Lease payments}) / (100 + \text{Lease payments})$
- Lease Payment = \$50.

Summary

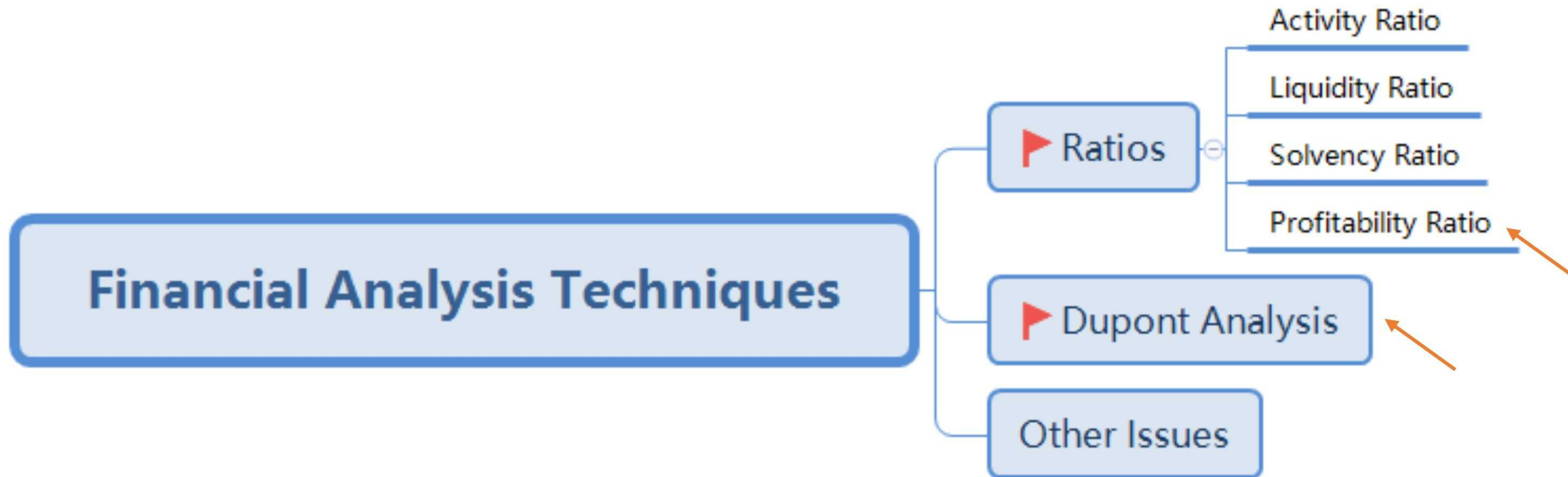
- **Importance:** ☆☆☆
- **Content:**
 - ✓ liquidity, solvency ratios.
- **Exam tips:**
 - ✓ 辨析各类典型的财务比率.

Ratio Analysis – Profitability Ratios & Dupont Analysis

Tasks:

- Classify, calculate, and interpret profitability ratios.
- Describe relationships among ratios and evaluate a company using ratio analysis.
- Demonstrate the application of DuPont analysis of return on equity, and calculate and interpret effects of changes in its components.

Mindmap: Financial Analysis Techniques



Profitability Ratios: Profit / IS Items

- **Gross profit margin** = Gross profit / Net revenue
- **Operating profit margin** = EBIT / Net revenue
- **Pretax margin** = EBT / Net revenue
- **Net profit margin** = Net income / Net revenue

Profitability Ratios: Profit / BS Items

- **Return on asset (ROA)** = $NI / \text{Average total assets}$ (*Definition*)
- $ROA = [NI + \text{Int}(1-t)] / \text{Average total assets}$ (*For analysis*)
- **Operating ROA** = $EBIT / \text{Average total assets}$
- **Return on equity (ROE)** = $NI / \text{Average total equity}$

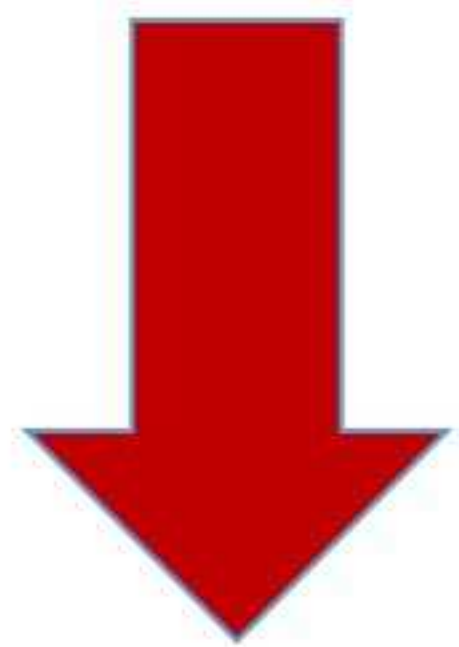
DuPont System of Analysis

TWO-part approach

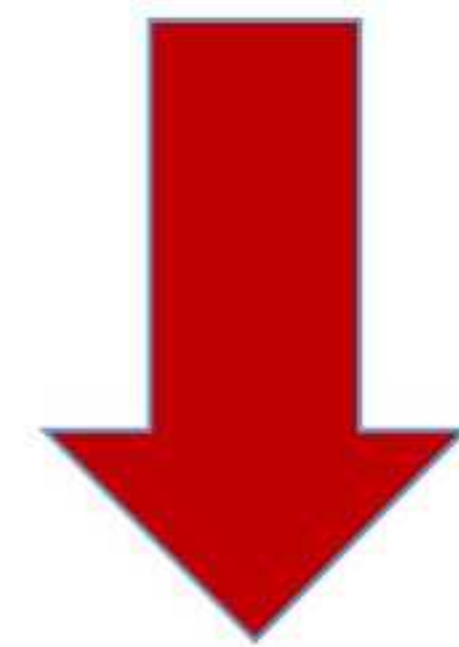
$$\text{ROE} = \text{ROA} \times \text{Financial Leverage Ratio}$$

THREE-part approach

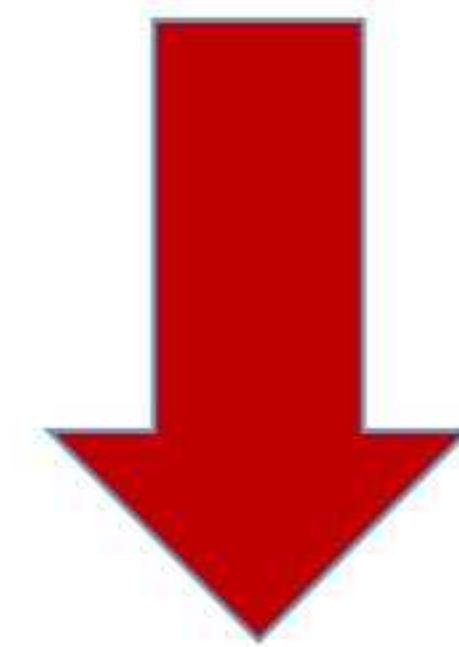
$$\text{ROE} = \frac{\text{Net income}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Average shareholders' equity}}$$



Net profit margin



Asset turnover

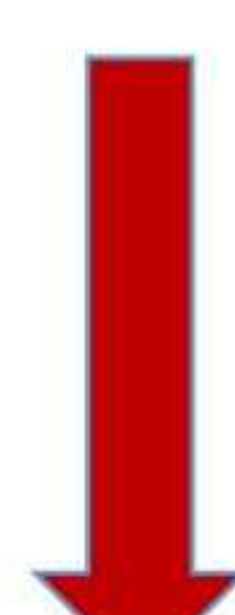


Financial Leverage

DuPont System of Analysis

FIVE-part approach

$$ROE = \frac{\text{net income}}{EBT} \times \frac{EBT}{EBIT} \times \frac{EBIT}{\text{revenue}} \times \frac{\text{revenue}}{\text{assets}} \times \frac{\text{assets}}{\text{equity}}$$



tax burden × *interest burden* × *EBIT margin* × *asset turnover* × *leverage ratio*

➤ Tax burden = 1 – tax rate

Practice

- The following information (U.S. \$ millions) for two companies operating in the same industry during the same time period is available:

	Company A	Company B
• Net sales	240	600
• Total assets	140	280
• Total liabilities	50	80

- If both companies achieve a return on equity of 15% for the period, which of the following statements is most likely correct? Compared to Company B, Company A has a:
- A. higher net profit margin.
 - B. higher total asset turnover.
 - C. lower financial leverage multiplier.

Practice

Answer: A

- $ROE = \text{Net profit margin} \times (\text{Revenue} / \text{Equity})$
 - ✓ Net profit margin for company A: $(140 - 50) \times 15\% / 240 = 5.625\%$
 - ✓ Net profit margin for company B: $(280 - 80) \times 15\% / 600 = 5\%$
- $ROE = \text{Net profit margin} \times \text{total assets turnover} \times \text{financial leverage}$
 - ✓ T.A.T A = $15\% / [5.625\% \times 140 / (140 - 50)] = 1.7$
 - ✓ T.A.T B = $15\% / [5\% \times 280 / (280 - 80)] = 2.1$
 - ✓ Financial Leverage A = $140 / (140 - 50) = 1.56$
 - ✓ Financial Leverage B = $280 / (280 - 80) = 1.4$

Summary

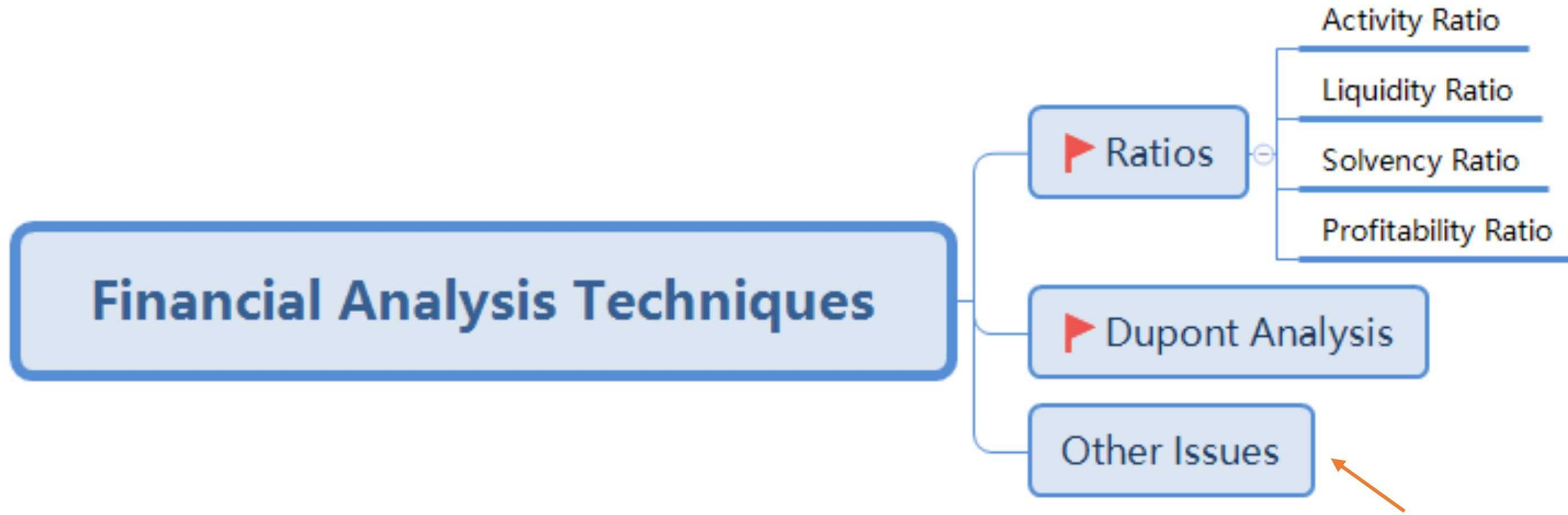
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Profitability ratios.
 - ✓ DuPont analysis of return on equity.
- **Exam tips:**
 - ✓ 辨析各类典型的财务比率；
 - ✓ 使用杜邦分析分解ROE（计算题）。

Equity, Credit Analysis & Segment Analysis

Tasks:

- Calculate and interpret ratios used in equity analysis and credit analysis.
- Explain the requirements for segment reporting and calculate and interpret segment ratios.

Mindmap: Financial Analysis Techniques



Equity Analysis

- **Dividend payout ratio** = dividends / net income
- **Retention rate** = 1- dividend payout ratio
- **Sustainable Growth Rate**
 - = ROE × Retention Ratio
 - = ROE × (1- Dividend payout ratio)

Practice

The following financial data is available for Golden Investment Co.:

Return on assets (ROA)	6.2%
Total asset turnover	1.7
Financial leverage	1.75
Net income	\$1,500,000
Dividend paid	\$400,000

The company's sustainable growth rate is closest to:

- A. 2.89%.
- B. 8.00%.
- C. 4.92%.

Practice

Answer: B

$$g = \text{ROE} \times \text{Retention Ratio}$$

$$\text{ROE} = \text{ROA} \times \text{Financial Leverage ratio} = 6.2\% \times 1.75 = 10.85\%$$

$$\text{Retention ratio} = (\text{NI} - \text{Dividend paid}) / \text{NI} = (\$1,500,000 - 400,000) / 1,500,000 = 73.3\%$$

$$g = 10.85\% \times 73.3\% = 7.96\% \approx 8\%$$

Credit Analysis

Credit risk

- The risk of loss caused by a counterparty's or debtor's failure to make a promised payments.

Credit analysis

- **Z – score**

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

$$A = WC / TA$$

$$B = RE / TA$$

$$C = EBIT / TA$$

$$D = MV \text{ of Equity} / BV \text{ of Debt}$$

$$E = Revenue / TA$$

- **If $Z < 1.81$ → Bankruptcy**

Segment Reporting

- A company must disclose separate information about any operating segment which the segment constitutes 10% or more of the company's revenue, asset or profit.
- For each reportable segment, the following information should be disclosed:
 - ✓ Segment revenue;
 - ✓ Capital expenditure during the current year;
 - ✓ Depreciation and amortization expense;
 - ✓ Interest revenue and interest expense;
 - ✓ Income tax expense or income.

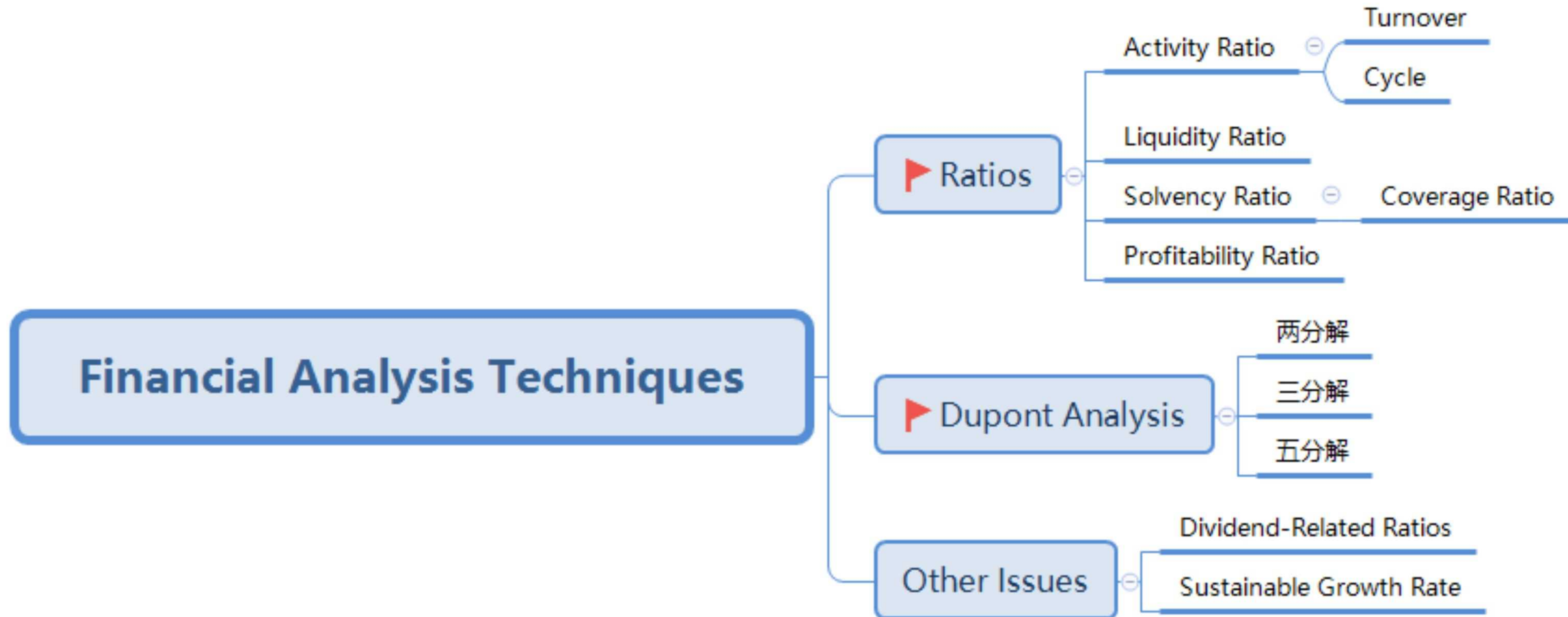
Segment Ratios

- Segment Margin = Segment Profit / Segment Revenue
- Segment Turnover = Segment Revenue / Segment Assets
- Segment ROA = Segment Profit / Segment Assets
- Segment Debt Ratio = Segment Liabilities / Segment Assets

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Ratios used in equity analysis and credit analysis;
 - ✓ Segment reporting.
- **Exam tips:**
 - ✓ 股票估值和信用分析中所用到的财务比率（结合权益）。

Summary for the Whole Reading

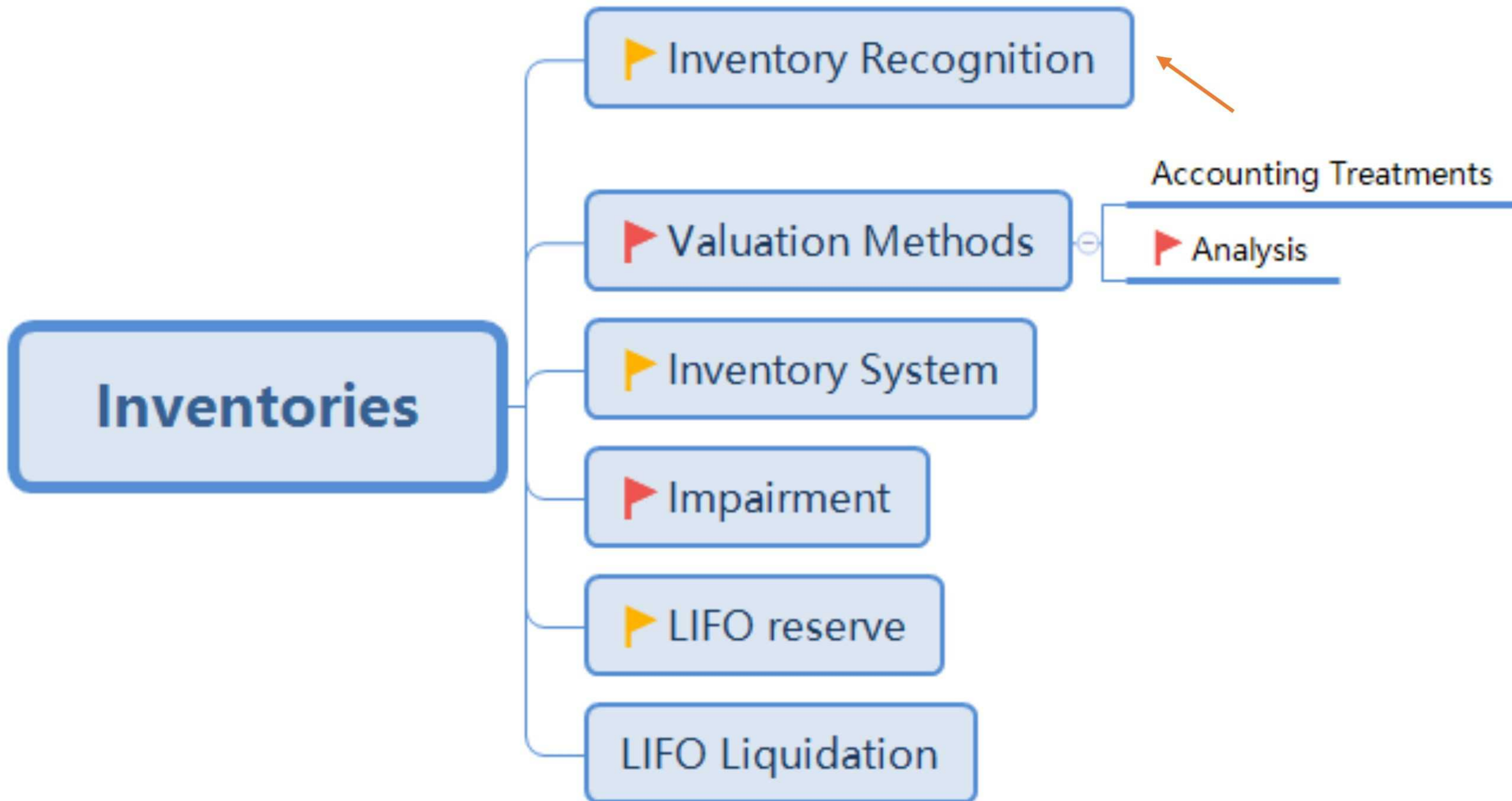


Inventory Recognition

Tasks:

- **Distinguish** between costs included in inventories and costs recognized as expenses in the period in which they are incurred.

Mindmap: Inventories



Inventory Recognition

- **Following costs are included in inventory cost:**
 - ✓ Purchase cost (Including import and tax-related duties, transport and related insurance, handling fee) less trade discounts and rebates.
 - ✓ Conversion costs including direct labor, fixed and variable overhead costs.

Period Costs

- **Following costs are expensed in the period incurred:**
 - ✓ Abnormal waste of materials, labor, or overhead.
 - ✓ Storage costs (unless required as part of production).
 - ✓ Administrative overhead and selling costs.

Cost of Good Sold (COGS)

- When the inventory is sold, inventory goes to income statement as COGS.
- **Beginning inventory + Purchases – COGS = Ending inventory**

Practice

- SAD TEA, a tea manufacturer, has operated at full capacity throughout the year. SAD's inventory records for the period showing below:
- Fixed production overhead \$160,000
 - Direct labor \$100,000
 - Raw material purchase price \$700,000 with 5% discount
 - Transporting fee of raw material \$20,000 & handling fee \$5,000
 - Storage costs incurred during production \$40,000
 - Advertising cost \$300,000
 - Abnormal waste costs \$190,000
- The total capitalized costs to inventory during the year are:

Practice

Items	Amounts
Raw material purchase price net of discount	\$665,000*
Raw material transporting fee and handling fee	\$25,000
Direct labor	\$100,000
Fixed production overhead	\$160,000
Storage costs incurred during production	\$40,000
Total capitalized costs to inventory	\$990,000

original price X (1-discount) = \$700,000(1-5%) = \$700,000*95%=\$665,000

Summary

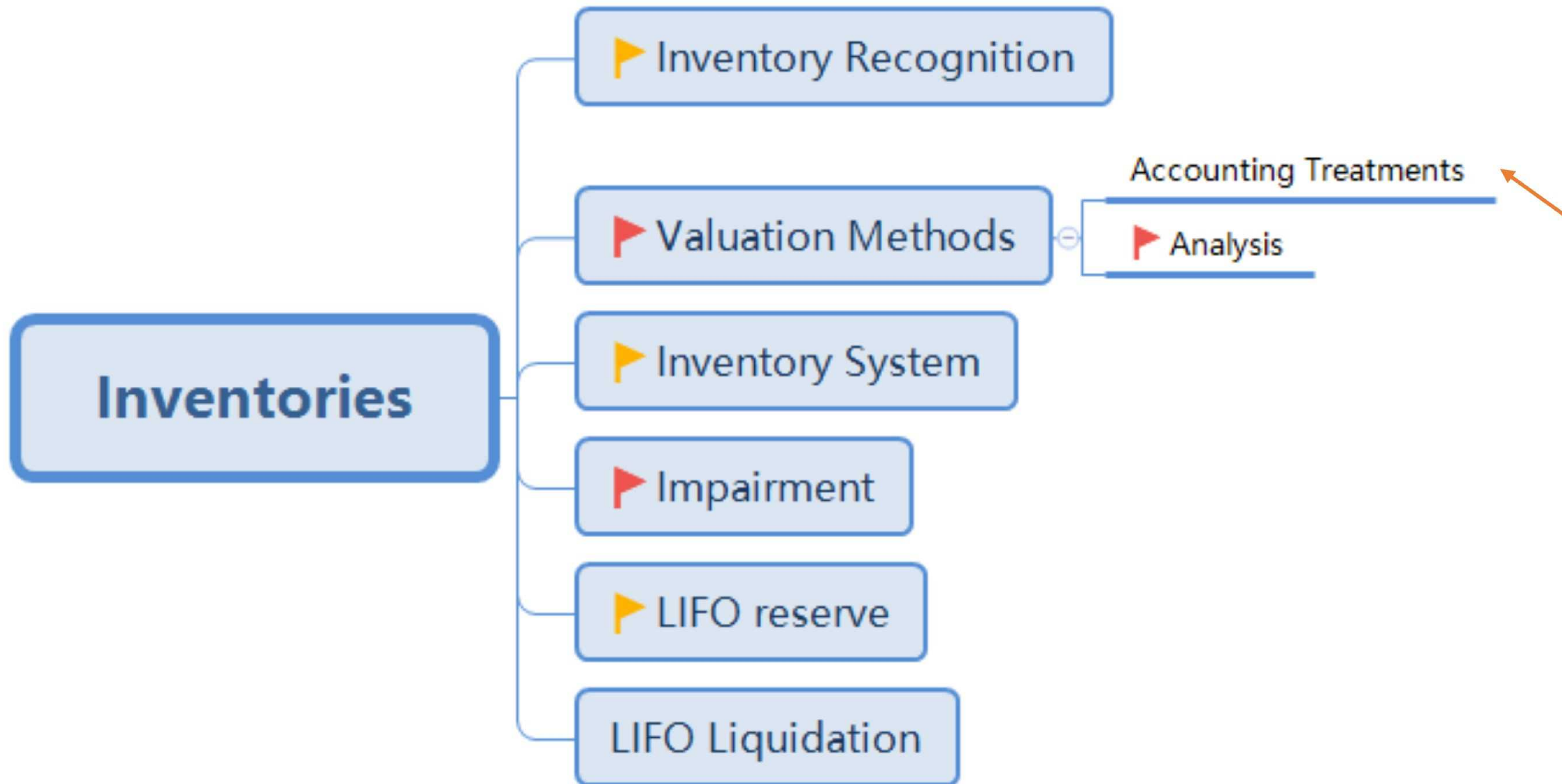
- **Importance:** ☆ ☆
- **Content:**
 - ✓ Accounting for inventories.
- **Exam tips:**
 - ✓ 辨析存货的资本化和费用化（存货的资本化过程）。

Valuation Methods

Tasks:

- **Describe** different inventory valuation methods (cost formulas).

Mindmap: Inventories



Inventory Valuation Methods

- Under **IFRS**, the permissible methods are:
 - ✓ Specific identification.
 - ✓ First-in, first-out. (FIFO)
 - ✓ Weighted average cost.

- Under **GAAP**, the permissible methods are:
 - ✓ Specific identification.
 - ✓ First-in, first-out. (FIFO)
 - ✓ Last-in, first-out. (LIFO)
 - ✓ Weighted average cost.

Example

- Purchase A, B, C, D on Jan 1, 2, 3, 4 respectively for \$5, \$6, \$7, \$8 and then sold A, C on Jan 30

	Ending Inventory	COGS
Specific Identification	$6+8=14$	$5+7=12$
FIFO	$7+8=15$	$5+6=11$
LIFO	$5+6=11$	$7+8=15$
Weight Ave.	$(5+6+7+8)/4*2=13$	$(5+6+7+8)/4*2=13$

Chen's Advanced Questions

- Which method is the most accurate one?
- Under which condition the specific method will be suitable?
- Which method (FIFO/LIFO) is better and why LIFO is forbidden by IFRS (and also PRC ASBE)?
- What conclusion is sure about the weighted average method?
- As a CFA charter holder, how will Mr. Chen prefer to calculate inventory turnover ratio?

Summary

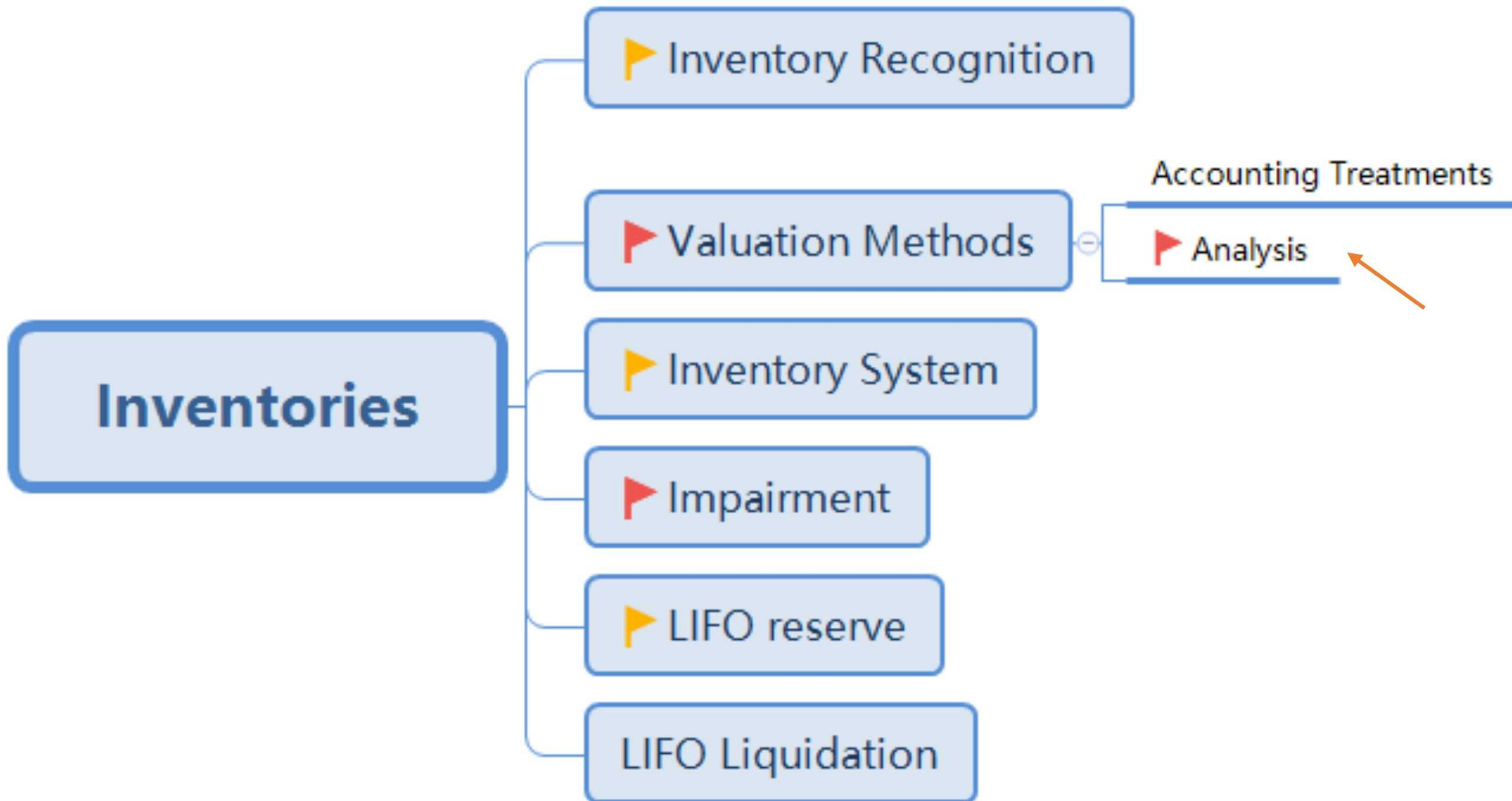
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Inventory valuation methods.
- **Exam tips:**
 - ✓ 熟练掌握和对比四种存货计量方法（主要是FIFO和LIFO）。

Analysis of Inventory Valuation Method

Tasks:

- **Calculate and compare** cost of sales, gross profit, and ending inventory using different inventory valuation methods.
- **Calculate and explain** how inflation and deflation of inventory costs affect the financial statements.

Mindmap: Inventories



Inventory Valuation Methods

- 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 Methods

In periods of **rising prices**

Statements	LIFO	FIFO
Income statement	Higher COGS	Lower COGS
	Lower EBIT	Higher EBIT
	Lower Tax	Higher Tax
	Lower net income	Higher net income
Balance sheet	Lower inventory balance	Higher inventory balance
	Lower working capital	Higher working capital
Cash flow statement	Higher CFO (Less tax paid)	Lower CFO (More tax paid)

Inventory Valuation Methods

In periods of **rising prices**

Ratios	LIFO	FIFO
Profitability	Lower gross and net margins	Higher gross and net 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

Practice

TWG Co. uses the FIFO inventory accounting method, and HBP Co. uses the LIFO method. During periods of rising prices the cost of goods sold reported by:

- A. HBP is too low.
- B. TWG is too low.
- C. HBP is too high.

Answer: B

Practice

During a period of rising inventory costs, Golden cake manufacturer decides to change its inventory method from FIFO to the weighted average cost method. Which of the following financial ratios will most likely increase as a result of this change?

- A. Current ratio
- B. Debt-to-equity ratio
- C. Number of days in inventory

Answer: B

Summary

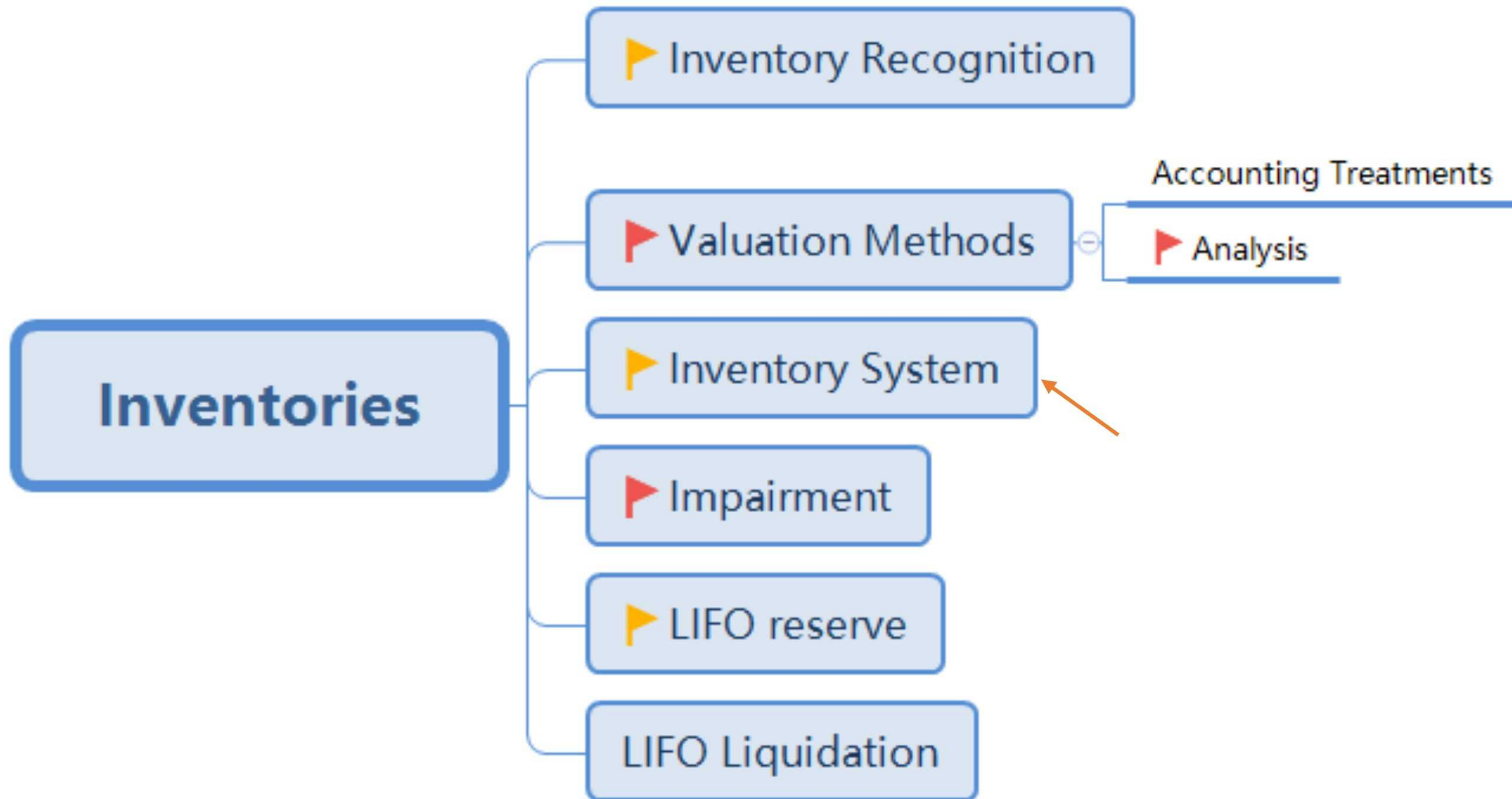
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Analysis of financial statement in inflationary and deflationary environment.
- **Exam tips:**
 - ✓ 辨析不同的存货计量方法在通胀和通缩的环境下是如何影响财务报表的。

Periodic & Perpetual Assumption

Tasks:

- Calculate and compare cost of sales and ending inventory using perpetual and periodic inventory systems.

Mindmap: Inventories



Periodic & Perpetual Assumption

Periodic inventory system

- COGS and inventory ending value are determined at the end of an accounting period.
- Need a “purchase” Account.

Perpetual inventory system

- COGS and inventory ending value are updated continuously.
- “Purchase” Account is not needed.

Inventory Valuation Methods



Beginning inventory	8 units @\$2 each
Jan 8 purchase	4 units @ \$4 each
Jan 13 sale	5 units
Jan 20 purchase	6 units @ \$6 each
Jan 21 sale	5 units

	Periodic	Perpetual
FIFO	Inv end = \$44	Inv end = \$44
	COGS = \$24	COGS = \$24
LIFO	Inv end = \$16	Inv end = \$20
	COGS = \$52	COGS = \$48

Chen's Advanced Questions

- Using FIFO/LIFO/Weighted Ave/Specific method, would two inventory systems get the same result?
- Are the results from two inventory systems always different when using LIFO/Weighted Ave?
- If the results are the same when using LIFO/Weighted Ave, do they reflect the real facts?

Inventory Valuation Methods

Summary of periodic & perpetual inventory system

- Same result for FIFO & Specific identification method
- May be different result for LIFO & AVCO

	Periodic Inventory System	Perpetual Inventory System
FIFO or Specific identification	COGS =	COGS
	Ending Inventory =	Ending Inventory
LIFO or Weighted Average Cost	COGS may \neq	COGS
	Ending Inventory may \neq	Ending Inventory

Summary

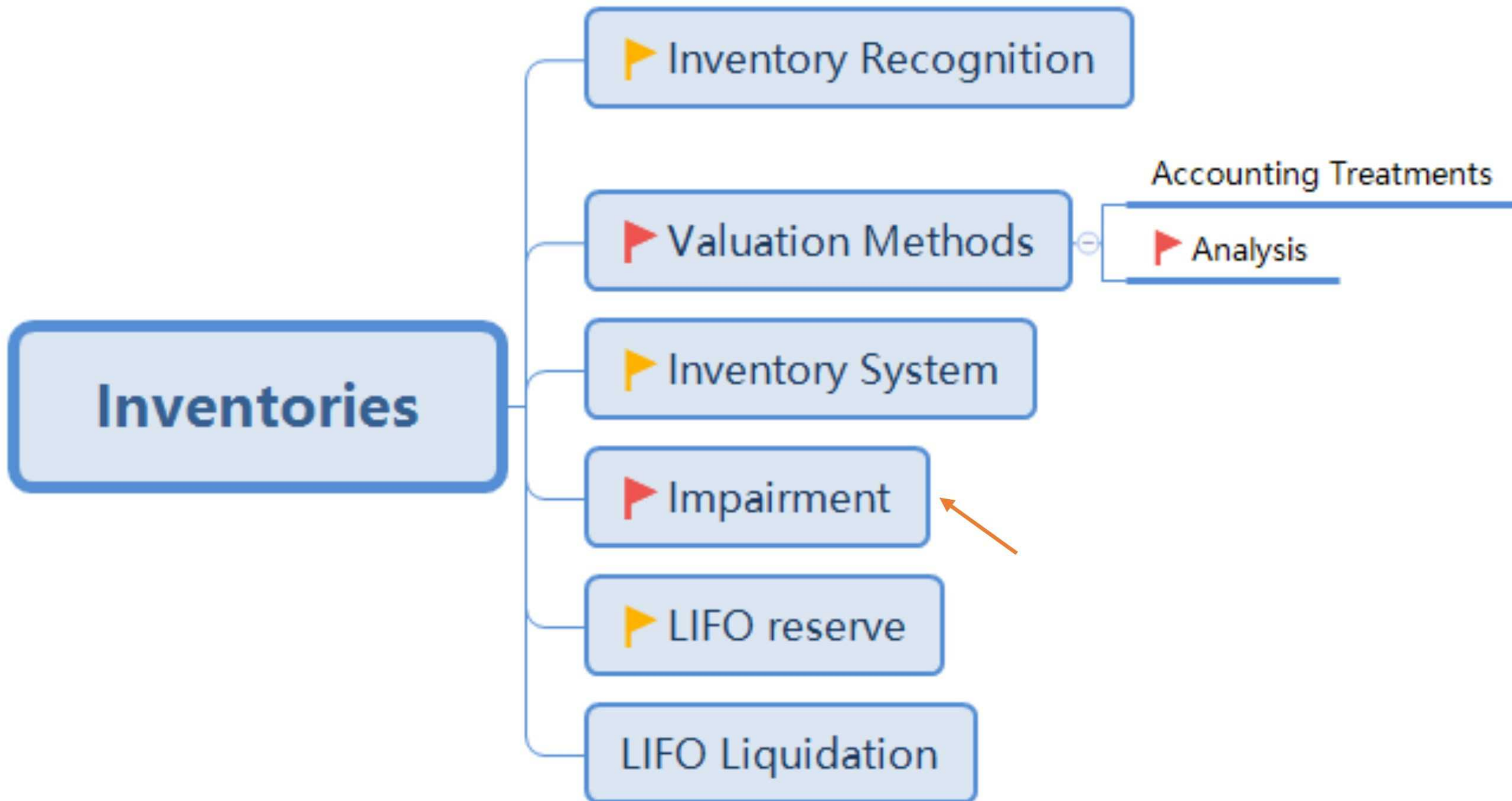
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculation of ending inventory and COGS under different inventory systems.
- **Exam tips:**
 - ✓ 两种存货计量假设体系下计算期末存货以及销货成本。

Impairment of Inventory under IFRS & GAAP

Tasks:

- **Describe** the measurement of inventory at the lower of cost and net realizable value;
- **Describe** implications of valuing inventory at net realizable value for financial statements and ratios.

Mindmap: Inventories



Inventory Impairment in IFRS

- Inventory should be measured at the lower of the cost or **Net realizable value**.
 - ✓ **NRV = Selling price – Selling cost**
- If cost > NRV
 - ✓ Inventory is written down to NRV on B/S.
 - ✓ A loss is recognized in I/S.
 - ✓ **Can be** written up but limited to the amount of the original write-down and a gain is recognized in I/S.

Inventory Impairment in GAAP

- Inventory is the lower of the cost or **market**.
 - ✓ If replacement cost > NRV (net realizable value)
 $market = NRV$
 - ✓ If replacement cost < NRV – normal profit margin
 $market = NRV - normal\ profit\ margin$
 - ✓ If NRV – normal profit margin < replacement cost < NRV
 $market = replacement\ cost$
- If cost > market
 - ✓ Inventory is written down to market on B/S.
 - ✓ A loss is recognized in I/S.
 - ✓ **No** subsequent written up is allowed.

Example

- The following information relates to TWG Co. in current year

Original cost \$4,200

Estimated selling price \$4,400

Estimated selling cost \$300

Replacement cost \$3,940

Normal profit margin \$240

- What are the per unit carrying value of TWG's inventory under IFRS and U.S.GAAP current year?

Example

Answer: in current year

➤ Under IFRS

- ✓ $NRV = \$4,400 - 300 = \$4,100$
- ✓ Original cost = \$4,200
- ✓ B/S: The carrying value should be \$4,100
- ✓ I/S: an impairment loss of \$100.

Example

Answer: in current year

➤ Under U.S.GAAP

- ✓ Replacement cost = \$3,940
- ✓ NRV— normal profit margin = \$4,100 - \$240 = \$3,860
- ✓ NRV = \$4,100
- ✓ $\text{NRV— normal profit margin} < \text{Replacement cost} < \text{NRV}$
- ✓ Market = RC = \$3,940
- ✓ B/S: The carrying value should be \$3,940
- ✓ I/S: an impairment loss of \$260.

Example (Cont.)

- Assume that in the year after the write-down in the previous example, net realizable value and replacement cost both increase by \$200. What is the impact of the recovery under IFRS and under U.S. GAAP?

Example (Cont.)

Answer:

➤ Under IFRS

- ✓ Even though the NRV increase by \$200 to \$4,300, TWG Co. only permitted to write up inventory to \$4,200 per unit and recognize a \$100 gain in its income statement.
- ✓ The write-up (gain) is limited to the original write-down of \$100. The carrying value cannot exceed original cost.

➤ Under U.S. GAAP

- ✓ No write-up is allowed. The per-unit carrying value will remain at \$3,940. TWG Co. will simply recognize higher profit when the inventory is sold.

Impact of Inventory Impairment

- Inventory write-down reduces both profit and the carrying value of inventory.
- Inventory write-down has negative effect on profitability, liquidity, and solvency ratios.
- Inventory write-down has positive effect on activity ratios (inventory turnover, total asset turnover).

Analysis on Inventory

Inventory turnover ratio & days of inventory on hand

- Ratios should be compared with industry benchmark and across several years.
- High inventory turnover and low DOH indicate high inventory management efficiency. But, it may indicate the company doesn't keep adequate inventory along with a low sale growth rate.
- Inventory written down also results in high inventory turnover and low DOH which indicate poor inventory management.

Inventory Adjustments

- If there is an active market exists, for the agricultural and forest products, minerals and mineral products, it may be measured at **net realizable value** (fair value – costs to sale and complete).
- Any gain or losses resulting from changing in value should be recognized in I/S both under IFRS and US GAAP.

Inventory Report and Disclosure (U.S. GAAP & IFRS)

- Cost flow method used (LIFO, FIFO, etc.)
- Total carrying amount of inventories
- Disclose the carrying value of inventory which is valued at net realizable value (Fair value – selling costs)
- COGS for the period
- The amount of inventory **write downs**
- The amount of **reversal** of inventory write downs and the events or circumstances of reversal (**IFRS only**)

Summary

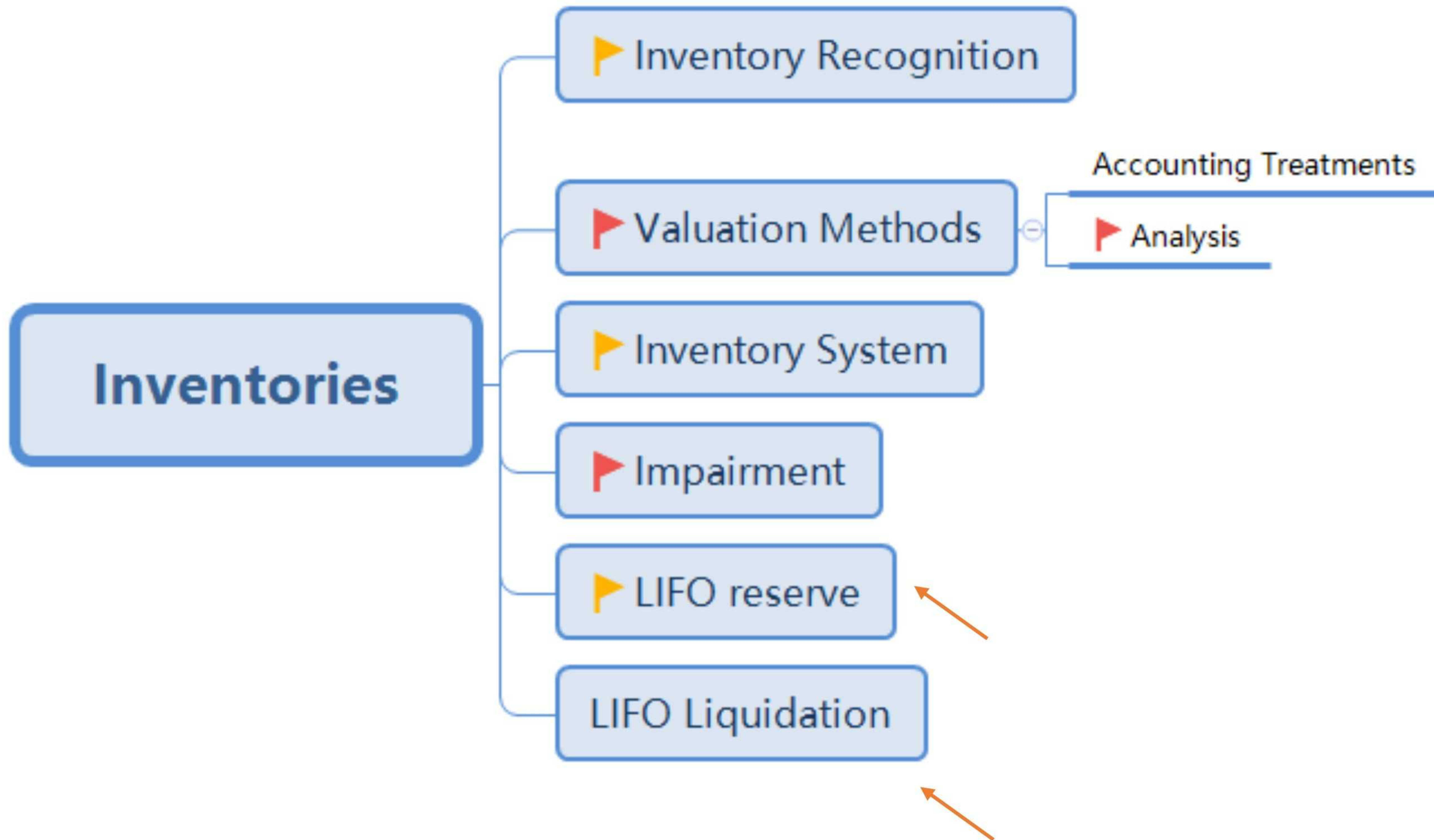
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Measurement of inventory at the lower of cost and net realizable value.
 - ✓ Impacts of inventory written-down.
- **Exam tips:**
 - ✓ 美国和国际准则下存货的减值测试以及减值损失计量。
 - ✓ 了解存货减值对报表以及比率的影响。

LIFO Reserve & LIFO Liquidation

Tasks:

- **Explain** LIFO reserve & LIFO liquidation and their effects on financial statements and ratios;
- **Convert** a company's reported financial statements from LIFO to FIFO for purposes of comparison;
- **Analyze and compare** the financial statements of companies, including companies that use different inventory methods.

Mindmap: Inventories



LIFO Reserve

- LIFO reserve is 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**
- **FIFO COGS = LIFO COGS – Δ LIFO Reserve**

Changes in Inventory Valuation

- Changes in **accounting policy**
 - ✓ From other methods to LIFO ➡ **Prospective application**
 - ✓ Other changes ➡ **Retrospective application**
- Disclosure in footnotes – Useful in facilitating comparisons with other firms or industry average

LIFO & FIFO Conversion

➤ Income statement changes

✓ $\text{COGS}_{\text{FIFO}} = \text{COGS}_{\text{LIFO}} - \Delta \text{LIFO Reserve}$

✓ $\text{NI}_{\text{FIFO}} = \text{NI}_{\text{LIFO}} + \Delta \text{LIFO Reserve} \times (1 - \text{Tax Rate})$

➤ Balance sheet changes

✓ $\text{Inventory}_{\text{FIFO}} = \text{Inventory}_{\text{LIFO}} + \text{LIFO Reserve}$

✓ $\text{RE}_{\text{FIFO}} = \text{RE}_{\text{LIFO}} + \text{LIFO Reserve}_{\text{Ending}} \times (1 - \text{Tax Rate})$

✓ $\text{Cash}_{\text{FIFO}} = \text{Cash}_{\text{LIFO}} - \text{LIFO Reserve}_{\text{Ending}} \times (\text{Tax Rate})$

Chen's Example

LIFO→FIFO	LIFO Reserve	Tax Rate
Year 0	0	
Year 1	90	30%
Year 2	100	30%

Chen's Advanced Example

LIFO→FIFO	LIFO Reserve	Tax Rate
Year 0	0	
Year 1	90	30%
Year 2	100	40%

Practice 1

- A company using the LIFO inventory method reports a LIFO reserve at year-end of \$85,000, which is \$20,000 lower than the prior year. If the company had used FIFO instead of LIFO in that year, the company's financial statements would have reported:
- A. a lower cost of goods sold, but a higher inventory balance.
 - B. a higher cost of goods sold, but a lower inventory balance.
 - C. both a higher cost of goods sold and a higher inventory balance.

Practice 1

Answer=C

- The negative change in the LIFO reserve would increase the cost of goods sold under FIFO compared to LIFO.
 - $\text{FIFO COGS} = \text{LIFO COGS} - \text{Change in LIFO reserve}.$
- The LIFO reserve has a positive balance so that FIFO inventory would be higher than LIFO inventory.
 - $\text{FIFO inventory} = \text{LIFO inventory} + \text{LIFO reserve}.$

Practice 2

Golden Tea Co. prepared its financial statements in compliance with US GAAP. LIFO inventory valuation was adopted and related information showing as below:

(In millions)	2015	2016
Inventory at year end	\$500	\$700
COGS during the year	\$1,400	\$2,100
LIFO reserve at year end	\$200	\$400

If adjust the inventory from LIFO to FIFO, what is the inventory turnover ratio for 2016?

Practice 2

$$\begin{aligned}\text{COGS}_{\text{FIFO } 2016} &= \text{COGS}_{\text{LIFO } 2016} - \Delta \text{LIFO Reserve} \\ &= \$2,100 - (\$400 - 200) = \$1,900\end{aligned}$$

$$\begin{aligned}\text{Inventory}_{\text{FIFO } 2016} &= \text{Inventory}_{\text{LIFO } 2016} + \text{LIFO Reserve}_{2016} \\ &= \$700 + 400 = \$1,100\end{aligned}$$

$$\begin{aligned}\text{Inventory}_{\text{FIFO } 2015} &= \text{Inventory}_{\text{LIFO } 2015} + \text{LIFO Reserve}_{2015} \\ &= \$500 + 200 = \$700\end{aligned}$$

$$\text{Inventory turnover}_{2016} = \$1,900 / [(1,100 + 700) / 2] = 2.1 \text{ times}$$

LIFO Liquidation

- In normal situation (prices are rising and inventory quantities are stable or increasing), the LIFO reserve will increase.
- A **LIFO liquidation** occurs when purchased volume is less than sales volume.
 - ✓ Even if the price is rising, LIFO reserve may decline.
 - ✓ COGS no longer reflects recent prices, and an analyst should adjust COGS for decrease in LIFO reserve.
 - ✓ LIFO liquidation results in **higher profit margin** and **higher income tax**, and higher profits can not be sustainable.

Practice

- In case of a decline in LIFO reserve, to obtain a better analysis an analyst should:
- A. adjust the income statement, only if such a decline is due to LIFO liquidation.
 - B. adjust the income statement, regardless of the reasons for the decline.
 - C. not make any adjustments.

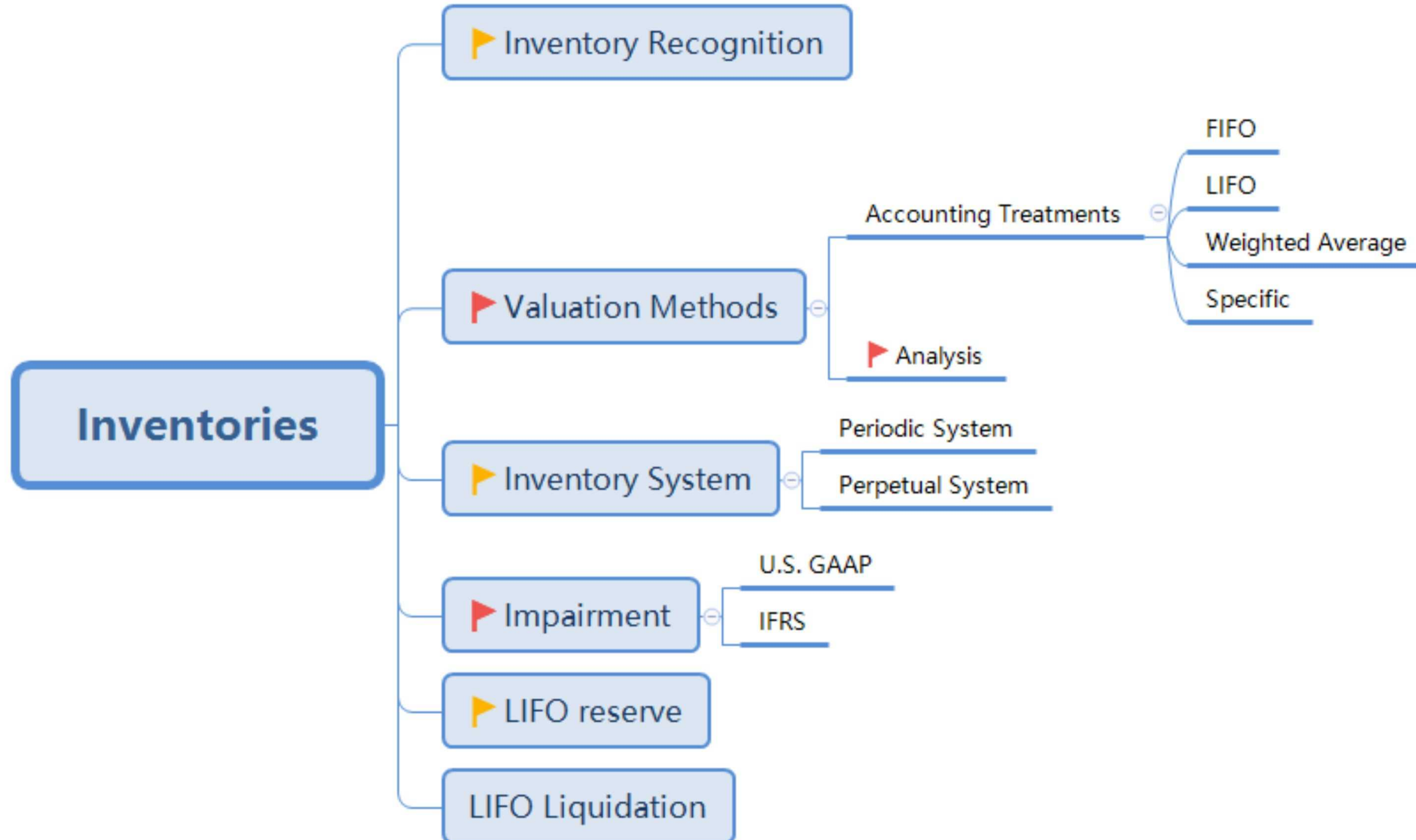
Answer=A

- A decline in LIFO reserve is due to either falling prices or LIFO liquidations. In the case of LIFO liquidation, the income statement does not reflect the current costs and should be adjusted. In the case of falling prices, the LIFO income statement amounts are current and do not need adjustment.

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ LIFO reserve and LIFO liquidation.
 - ✓ LIFO & FIFO Conversion.
- **Exam tips:**
 - ✓ 掌握LIFO和FIFO的互相转化，并理解如何影响利润表及资产负债表。
 - ✓ 了解LIFO Liquidation对报表的影响。

Summary for the Whole Reading

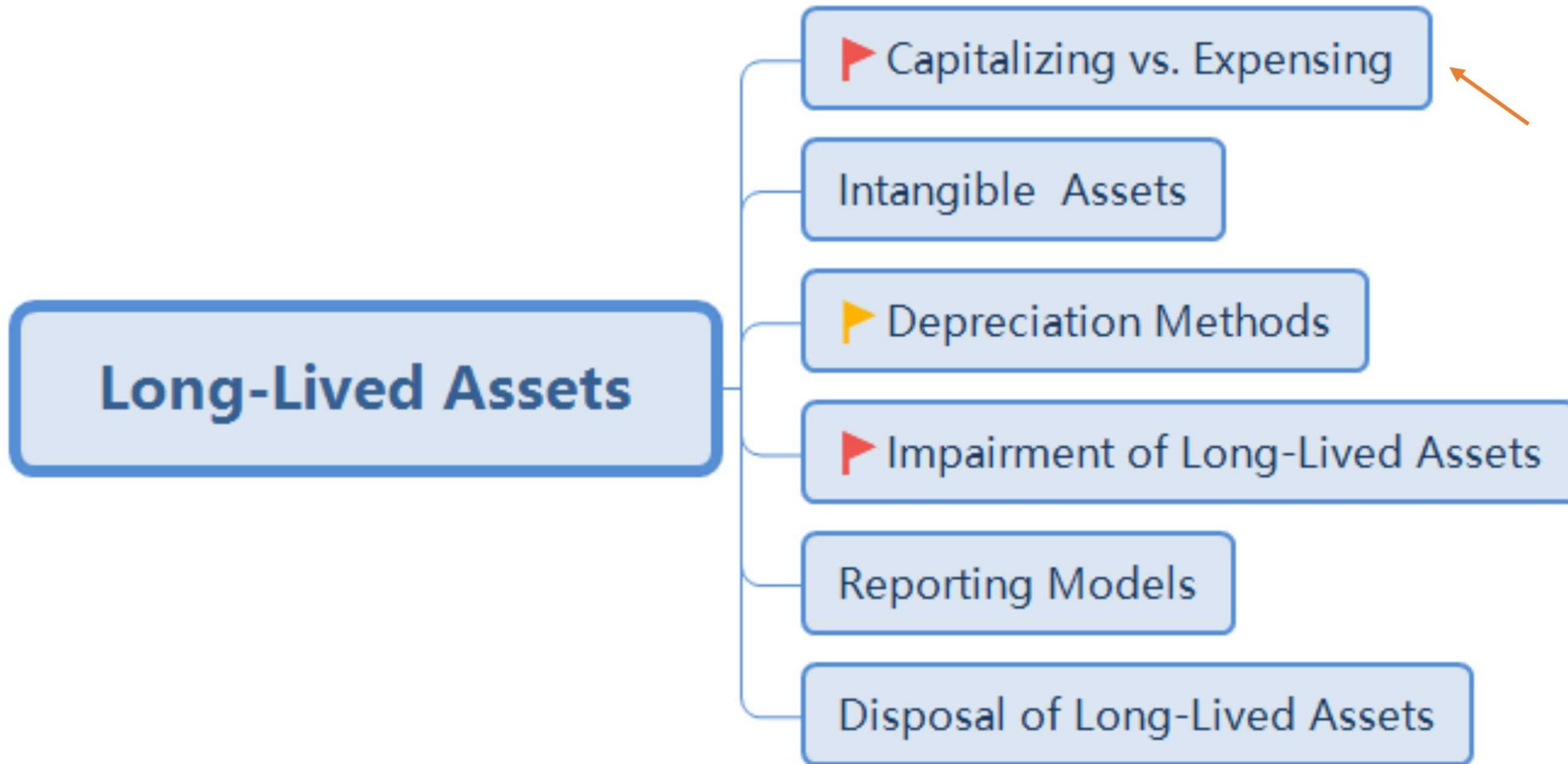


Capitalizing vs. Expensing

Tasks:

- **Distinguish** between costs that are capitalized and costs that are expensed in the period in which they are incurred.

Mindmap: Long-Lived Assets



Capitalizing vs. Expensing

- How to treat an expenditure depending on the nature of the expenditure
 - ✓ **Capitalize** as an asset on the B/S
 - ✓ Recognize as an **expenses** in the I/S
- The asset 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**

Capitalizing vs. Expensing

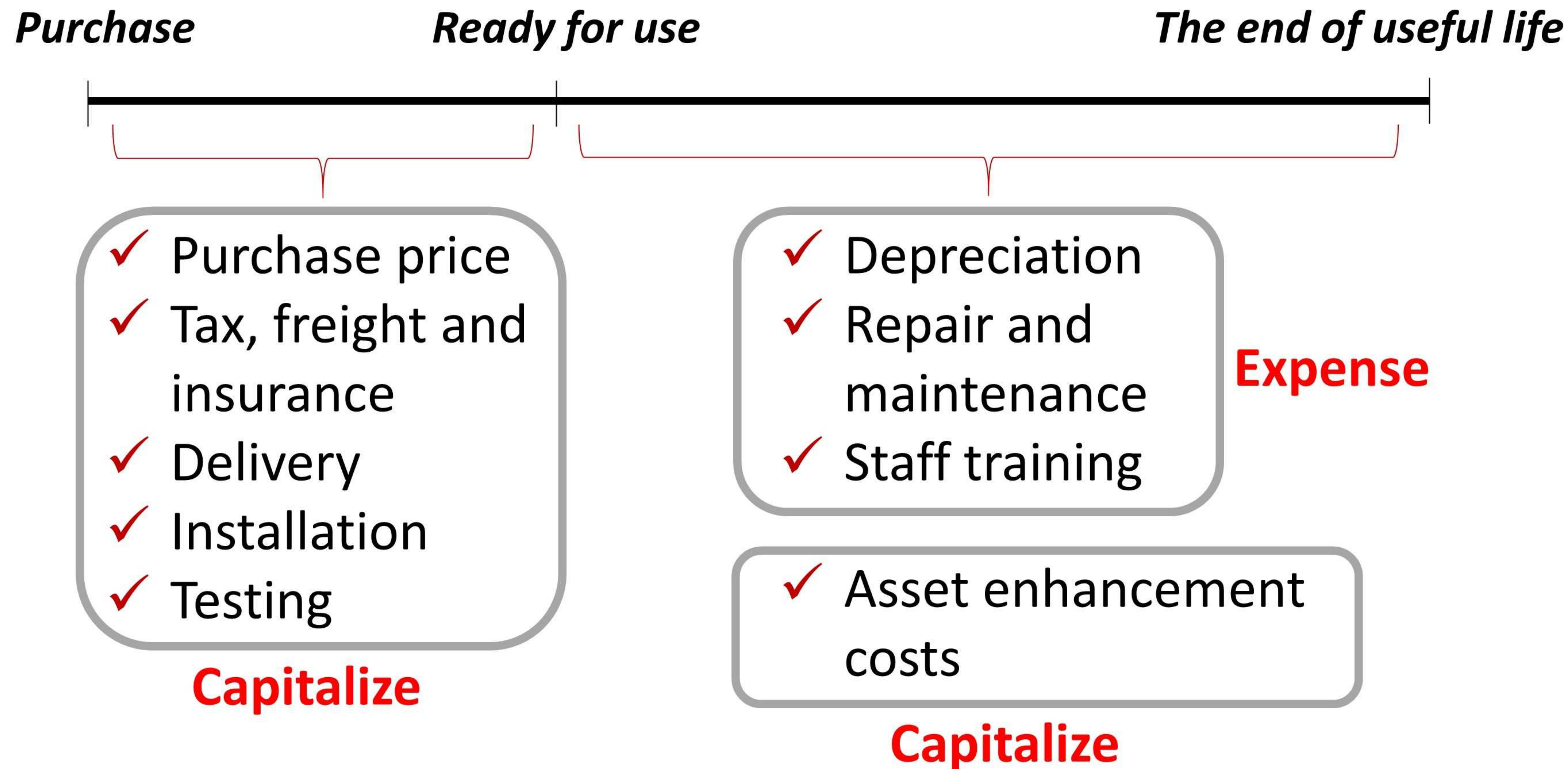
Is there any future economic benefit for expenditure?	YES	Recognize assets in B/S	Inventory		COGS
			Non current assets	Tangible assets	Depreciation
				Intangible assets	Amortization
	NO	Recognized expenses in the income statement when incurred	eg: Selling expenses Administrative cost General expenses		Net Income of current year

Capitalizing vs. Expensing

Statements	Items	Capitalizing	Expensing
B/S	Total assets	Higher	Lower
	Total equity	Higher	Lower
	D/A, D/E	Lower	Higher
I/S	Net income – first year	Higher	Lower
	Net income – later year	Lower	Higher
	ROA, ROE – first year	Higher	Lower
	ROA, ROE – later year	Lower	Higher
	Net Income volatility	Lower	Higher
Cash flow statement	CFO	Higher	Lower
	CFI	Lower	Higher
	Total cash flow	Same	Same

Costs of Tangible Assets

- Only costs necessary for the machine to be ready for use can be capitalized.



Practice

SAD TEA Co. has recently purchased and installed a new machine for manufacturing extension project.

Purchase price	\$15,980
Freight and insurance	\$1,500
Installation	\$900
Testing	\$300
Maintenance staff training cost	\$1,000

The total cost of the machine to be shown on SAD's balance sheet is $15,980 + 1,500 + 900 + 300 = \$18,680$

Capitalizing Interest Costs

- During the asset construction period, incurred interest must be capitalized as that asset's cost.
- Under IFRS, interest income earned from temporary investment of borrowed fund can be deducted from capitalized interest.
- Capitalized interest expenditures are classified as CFI under both IFRS and US GAAP.
 - Expensed interest may be classified as CFO or CFF under IFRS, but classified as CFO under US GAAP.

Chen's Questions

	Capitalized Interest	Expensed Interest
NI		
EBIT		
Interest Expense		
Interest Coverage Ratio		
CFI		
CFO		

Capitalizing Interest Costs

- **Implication for analysis: treat as normal interest**
 - ✓ For interest coverage ratio, analyst should include both the capitalized interest portion and the expensed portion
 - ✓ If a company is depreciating interest that it capitalized in a previous period, income should be adjusted to eliminate the effect of that depreciation.

Chen's Example

- Total asset=\$2000, in which capitalized interest costs=\$50
- EBIT=\$900, Interest expense in I/S=\$150, Tax rate=10%
- Depreciation expense due to the capitalizes interest is \$10
- CFO=\$450, CFI=—\$250
- As a CFA charter holder, Mr. Chen should do the following adjustments:

✓ I=

✓ EBIT =

✓ NI =

✓ Total asset =

✓ CFO =

CFI =

Summary

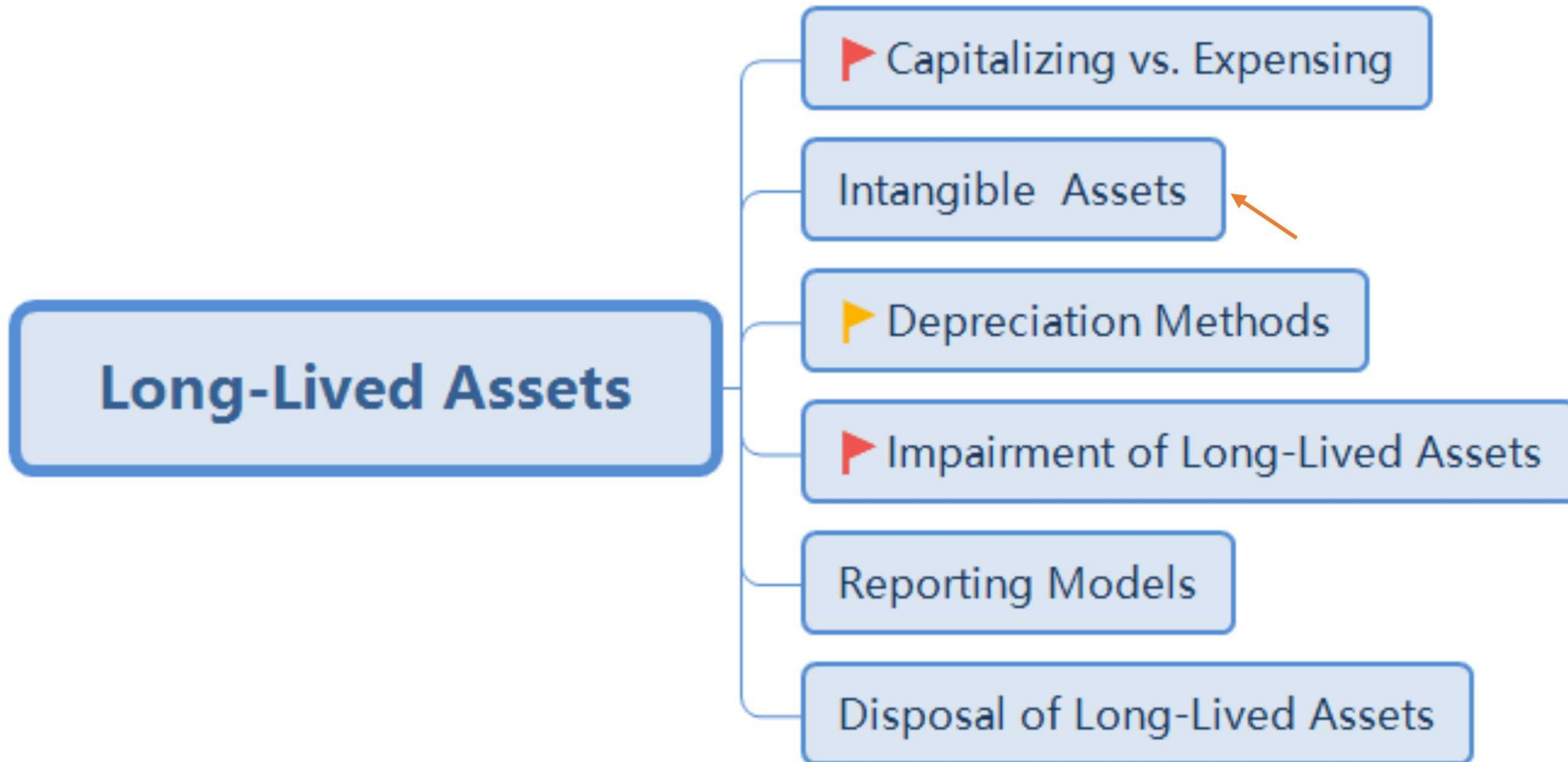
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Capitalizing versus expensing measurement.
- **Exam tips:**
 - ✓ 辨析资本化和费用化的会计处理。
 - ✓ 辨析资本化和费用化对于财务报表和比率的影响。

Intangible Assets

Tasks:

- **Distinguish** between costs that are capitalized and costs that are expensed in the period in which they are incurred;
- **Compare** the financial reporting of the following types of intangible assets: purchased, internally developed, acquired in a business combination.

Mindmap: Long-Lived Assets



Intangible Assets

- **Internally generated**
 - ✓ Generally cannot be capitalized on balance sheet
 - ✓ R&D costs
- **purchased separately**
 - ✓ Patents, Copyrights, Trademarks, Franchises, Licenses.
- **Unidentifiable intangible asset**
 - ✓ Goodwill

Research & Development

➤ Research

- ✓ **IFRS & GAAP:** should be **expensed** as incurred

➤ Development

- ✓ **IFRS:** **Expensed** as incurred **except for** certain criteria are met – **technical feasibility** of completing the intangible assets.
- ✓ **GAAP:** **Expensed** as incurred **except for cost of software development.**

Research & Development

➤ Software development cost under US GAAP

✓ For sales

- **Expensed** as incurred.
- Once technological feasibility is established, subsequent production costs **can be capitalized**.

✓ For own use

- **Expensed** as incurred.
- **Can be capitalized** if the project will be completed and the software will be used as intended.

Goodwill

- **Goodwill** = total cost to purchase the target company – Fair value of acquiree's net identifiable assets
 - **Net identifiable assets** = fair value of identifiable assets – fair value of the liabilities and contingent liabilities
- If the purchase price less than the fair value of acquiree's net identifiable assets, it's called "**bargain purchase**". Any gain from bargain purchase is recognized in I/S.

Practice

Sad Tea Co. purchased 100% shares of Haha Tea Inc. for a consideration of \$3 million at the beginning of 2016. At the acquisition date, Haha Tea's financial data gathered as following:

Items	Book Value	Fair Value
Total Assets	\$2,000,000	The same as book value except for \$500,000 fair value appreciation of PP&E.
Total Liabilities	\$600,000	The same as book value.

Haha Tea had \$100,000 contingent liability which disclosed in notes. What goodwill is closed to for this acquisition transaction?

Practice

Net identifiable assets

= fair value of identifiable assets – fair value of the liabilities and contingent liabilities

$$= \$2,500,000 - 600,000 - 100,000 = \$1,800,000$$

Goodwill

= total cost to purchase the target company – Fair value of acquiree's net identifiable assets

$$= \$3,000,000 - 1,800,000 = \$1,200,000$$

Summary

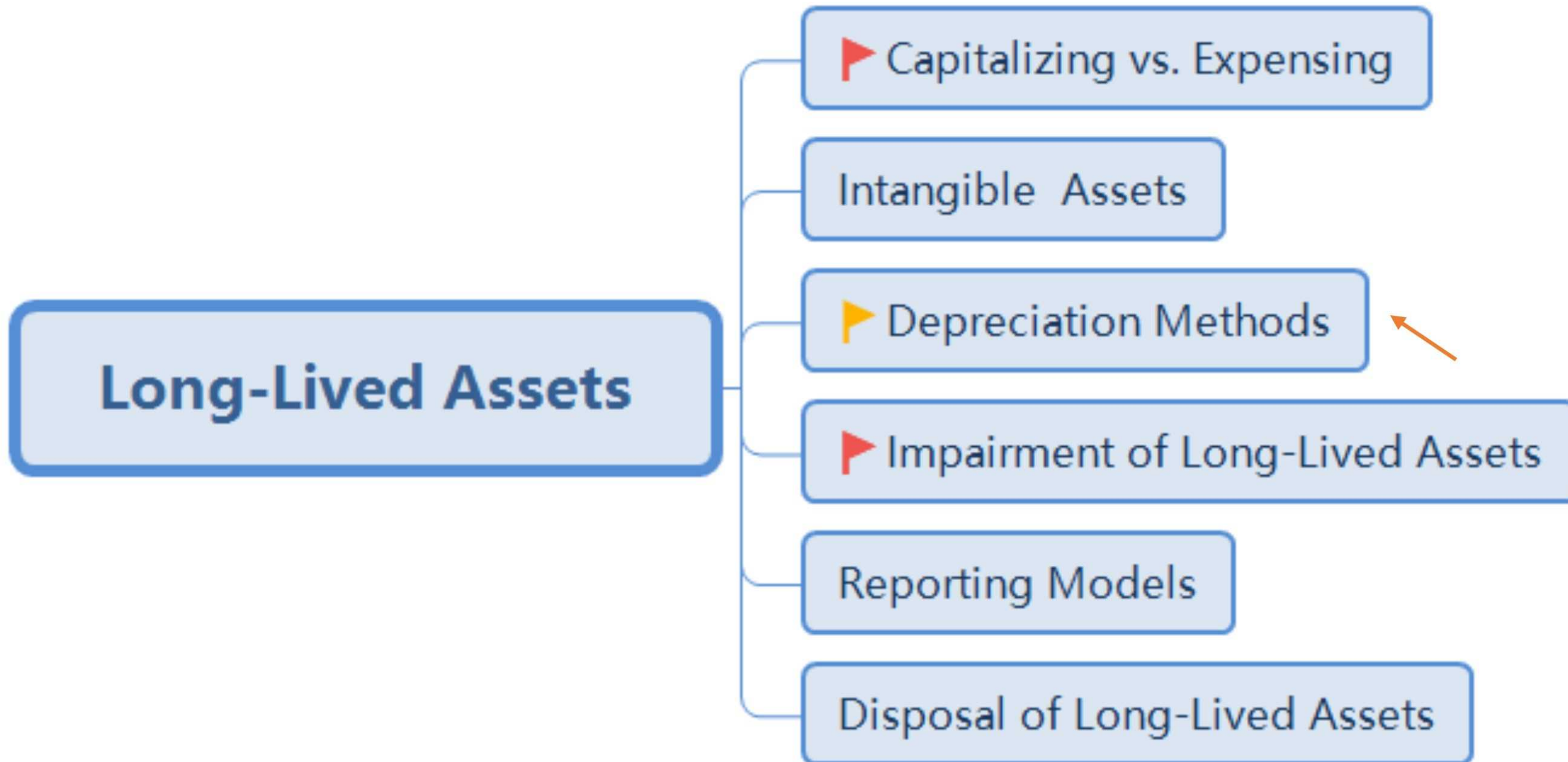
- **Importance:** ☆ ☆
- **Content:**
 - ✓ Intangible assets.
- **Exam tips:**
 - ✓ 记忆无形资产的分类以及做账特征。
 - ✓ 商誉的计算。

Depreciation Methods

Tasks:

- **Calculate** depreciation expense.
- **Describe** how the choice of depreciation (amortization) method and assumptions concerning useful life and residual value affect financial ratios.

Mindmap: Long-Lived Assets



Depreciation Methods

➤ Straight-line depreciation

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

➤ Accelerated depreciation

$$\begin{aligned} &\text{Depreciation expense} \\ &= \frac{2}{\text{useful life}} \times (\text{original cost} - \text{accumulative depreciation}) \end{aligned}$$

➤ Units of production

$$\begin{aligned} &\text{Depreciation expense} \\ &= \frac{(\text{original cost} - \text{residual value})}{\text{Total capacity during the useful life}} \times \text{Actual output in current period} \end{aligned}$$

Example

- Golden Inc. is computing the depreciation expense of a piece of manufacturing equipment which is acquired on 1 January 2013. Information is as shown below:

Cost of the equipment	\$900,000
Estimated residual value	\$100,000
Expected useful life	4 years
Total production capacity	800,000 units
Production in FY2013 & 14	250,000 units
Production in FY2015	200,000 units
Production in FY2016	100,000 units

- Calculate the depreciation expense recognized in the income statement each year using three depreciation methods.

Straight Line Method

➤ Depreciation exp.

$$= (\$900,000 - \$100,000) / 4 = \$200,000 \text{ annually. (I/S)}$$

Balance Sheet	FY 2013	FY 2014	FY 2015	FY 2016
PP&E	\$900,000	\$900,000	\$900,000	\$900,000
Accumulated depreciation	200,000	400,000	600,000	800,000
Carrying Value	\$700,000	\$500,000	\$300,000	\$100,000

Double Declining Balance (DDB) Method

FY13 Dep. Exp. = $\$900,000 \times (2/4) = \$450,000$

FY14 Dep. Exp. = $\$450,000 \times (2/4) = \$225,000$

FY15 Dep. Exp. = $\$225,000 \times (2/4) = \$112,500$

FY16 Dep. Exp. = $\$112,500 - \$100,000 = \$12,500$

Balance Sheet	FY 2013	FY 2014	FY 2015	FY 2016
PP&E	\$900,000	\$900,000	\$900,000	\$900,000
Accumulated depreciation	\$450,000	\$675,000	\$787,500	\$800,000
Carrying Value	\$450,000	\$225,000	\$112,500	\$100,000

Units of Production Method

$$\begin{aligned}\text{FY13\&14 Dep. exp.} &= (\$900,000 - 100,000)/800,000 \times 250,000 \\ &= \$250,000\end{aligned}$$

$$\text{FY15 Dep. exp.} = (\$900,000 - 100,000)/800,000 \times 200,000 = \$200,000$$

$$\text{FY16 Dep. exp.} = (\$900,000 - 100,000)/800,000 \times 100,000 = \$100,000$$

Balance Sheet	FY 2013	FY 2014	FY 2015	FY 2016
PP&E	\$900,000	\$900,000	\$900,000	\$900,000
Accumulated depreciation	\$250,000	\$500,000	\$700,000	\$800,000
Carrying Value	\$650,000	\$400,000	\$200,000	\$100,000

Depreciation Methods

Items	DDB	Straight line
Depreciation expense (Early, Later)	Higher(E), Lower(L)	Lower(E), Higher(L)
Net income (Early, Later)	Lower(E), Higher(L)	Higher(E), Lower(L)
Assets	Lower	Higher
Equity	Lower	Higher
ROA (Early, Later)	Lower(E), Higher(L)	Higher(E), Lower(L)
ROE (Early, Later)	Lower(E), Higher(L)	Higher(E), Lower(L)
Total asset turnover	Higher	Lower
Cash flow (Ignore Tax)	Same	Same

Accounting Treatments of Depreciation

- Allocation of depreciation expense
 - ✓ COGS → Affect gross profit margin
 - ✓ SG&A → Affect operating expense

- **longer** useful life & **higher** residual value
 - ✓ Lower depreciation expense and higher net income.
 - ✓ Estimation of residual value:
 - IFRS: allowed either upward or downward
 - GAAP: downward only

Amortization of Intangible Asset

- Intangible asset with a **finite** useful life
 - ✓ Amortization over useful life
 - ✓ Similar amortization methods as depreciation methods for tangible assets
- Intangible asset with an **indefinite** useful life
 - ✓ Do not amortization
 - ✓ Impairment tested at least annually

Summary

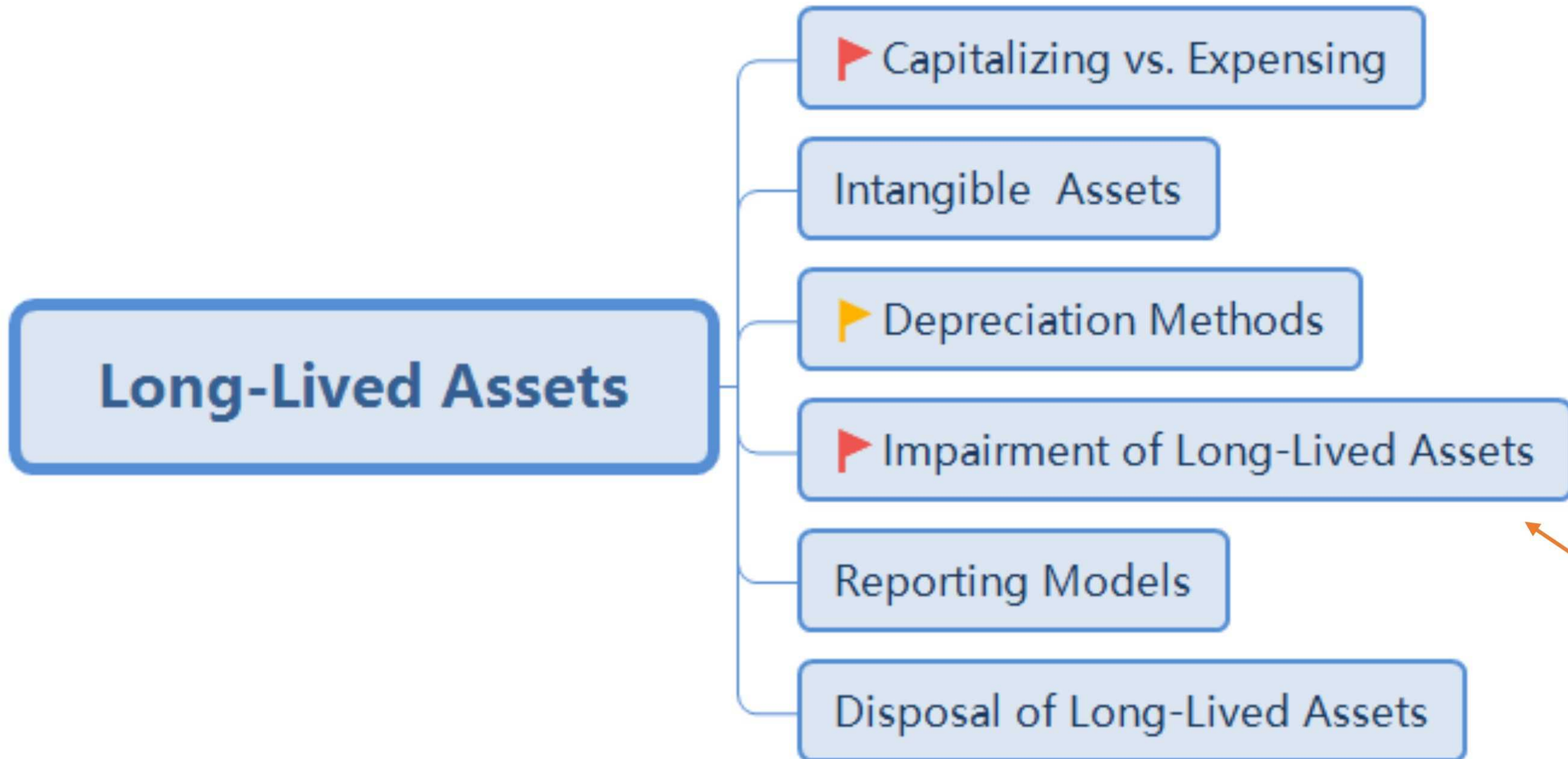
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Calculate depreciation and amortization expense.
 - ✓ Analysis of Depreciation Effect.
- **Exam tips:**
 - ✓ 掌握三种折旧方法的计算。
 - ✓ 定性了解不同折旧方法如何影响财务报表和比率。
 - ✓ 使用年限和残值是如何影响折旧费用和净利润的。

Impairment of Long-Lived Assets

Tasks:

- Explain and evaluate how impairment affects PP&E.

Mindmap: Long-Lived Assets



Impairment of Long-Lived Assets

- Held for use → Impairment test
 - ✓ Different treatment for **GAAP** and **IFRS**

- Held for sale
 - ✓ A long-lived asset reclassified as held for sale from held for use should do the impairment test when reclassified.
 - ✓ Test to see if **Carrying value > NRV (= fair value - cost to sell)**.
 - ✓ No depreciation from reclassification on.

Impairment of Long-Lived Assets Held-for-Use: IFRS

➤ Impairment happened if:

Carrying value of assets > Recoverable amount



The higher of

fair value – selling cost

Value in use
(PV of future cash flows)

Impairment of Long-Lived Assets Held-for-Use: GAAP

- **Step one:** DO the impairment test

Carrying value of assets $>$ Undiscounted future cash flows generated by assets

- **Step two:** IF pass the test, THEN measure the loss

Carrying value of assets $-$ Fair market value or PV of future CF

Recoveries of Impairment

- Under U.S.GAAP
 - ✓ Held for use: Recoveries **are not** allowed
 - ✓ Held for sale: Recoveries **are** allowed, but is limited to the previous impairment loss.
- Under IFRS
 - ✓ The impairment loss **can be** reversed (**except for goodwill**), but is limited to the previous impairment loss.

Example

- The following information is relating to the equipment owned by Golden Service Inc.:

Original cost	\$1,000,000
Accumulated depreciation	\$400,000
Expected future cash flow	\$625,000
Fair value	\$590,000
Value in use	\$585,000
Selling cost	\$30,000

- Assuming Golden Service Inc. will continue to use the equipment in the future, test the asset for impairment under U.S. GAAP and IFRS.

Example

Under IFRS

- Carrying value = $\$1,000,000 - \$400,000 = \$600,000$
- Fair value less cost to sell = $\$590,000 - \$30,000 = \$560,000$
- Value in use = $\$585,000$
- Recoverable amount = $\$585,000$
- Carrying value > recoverable amount, the equipment is impaired. The B/S value of the equipment is reduced to $\$585,000$ with a impairment loss of $\$15,000$ in I/S.

Example

Under U.S. GAAP

- Carrying value = $\$1,000,000 - \$400,000 = \$600,000$
- Expected future cash flow = $\$625,000$
- Since Carrying value < Expected future cash flow, the equipment is not impaired.
- The B/S value of the equipment remains at $\$600,000$.

Impairment of Long-Lived Assets

Impairment Effects	
Assets	Decrease
Equity	Decrease
Debt / Equity	Increase
Current income, ROA, ROE	Decrease
Future income, ROA, ROE	Increase
Future depreciation expense	Decrease
Future asset turnover ratios	Increase
Cash flow	Same

Summary

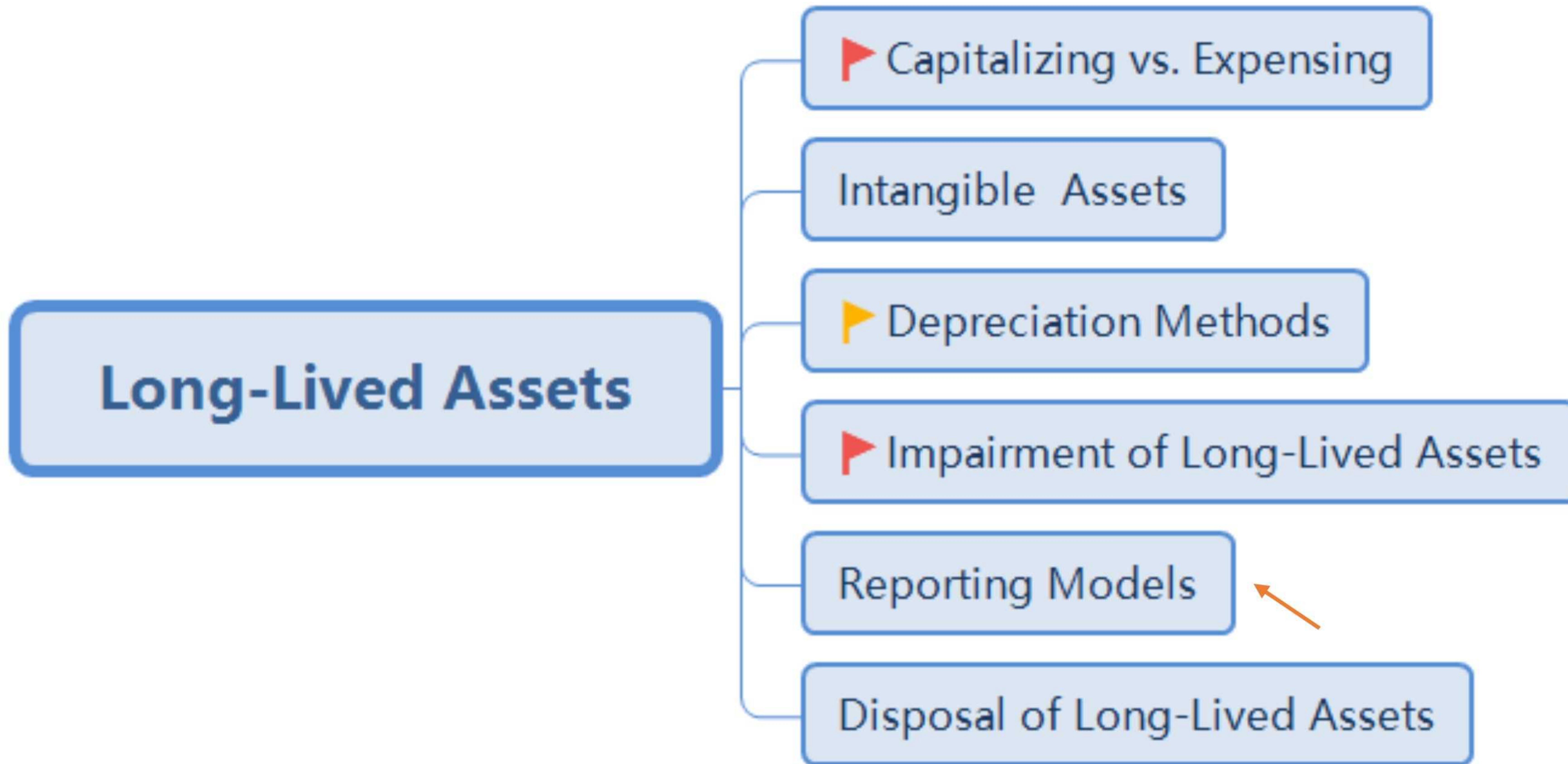
- **Importance:** ☆☆☆
- **Content:**
 - ✓ Impairment rules in U.S. GAAP and IFRS.
- **Exam tips:**
 - ✓ 掌握美国准则和国际准则的减值测试以及减值损失的计量方法（考查计算）。
 - ✓ 会判断减值对报表以及比率的影响（定性考察）。

Reporting Models of Long-Lived Assets & Disposal of Long-Lived Assets

Tasks:

- **Explain and evaluate** reporting model, and derecognition of PP&E.

Mindmap: Long-Lived Assets



Reporting Models of Long-Lived Assets

U.S. GAAP:

- Historical Cost

IFRS:

➤ Investment property

- Historical Cost
- Fair Value

➤ Other long-lived assets

- Historical Cost
- Revaluation Model

Historical Cost Model (both IFRS and GAAP)

- Long-lived assets on the balance sheet are reported at amortized cost.
- Amortized cost
= original cost – accumulated depreciation – impairment charges

Fair Value Model (IFRS only)

- IFRS allows to value **investment properties** using either cost model or fair value model.
 - ✓ Investment property held for the purpose of earning rental income or capital appreciation or both.
- Using the fair value model:
 - ✓ Investment property is carried at fair value.
 - ✓ Any gain or loss arising from a change in the fair value of the investment property is recognized in profit and loss.
 - ✓ Don't depreciate the assets

Revaluation Model (IFRS only)

- Carrying amounts of Long-lived assets are the **fair values** at the date of revaluation, and should consider accumulated depreciation and amortization.
- If the fair value initially increase after purchase, the difference between the fair value and purchase cost should be reported in revaluation surplus as O.C.I in equity.
- Subsequent decrease in fair value should write-off the revaluation surplus recorded previously first until zero and then go to income statement.

Revaluation Model (IFRS only)

- If the fair value initially decrease after purchase, the decrease should be reported as losses in Income Statement.
- Subsequent increase in fair value should reverse the losses recorded previously first and then, any amount in excess of the losses previously recorded should go to revaluation surplus as O.C.I. in equity.
- When an asset is retired or disposed of, any related amount of revaluation surplus included in equity is **transferred directly to retained earnings.**

Chen's Basic Example

1. A company purchased a land for \$10,000 at the beginning of the period.
 - At the end of first year, the fair value changed to \$11,000.
 - At the end of second year, fair value changed to \$7,000.

2. A company purchased a land for \$10,000 at the beginning of the period.
 - At the end of first year, the fair value changed to \$7,000.
 - At the end of second year, the fair value changed to \$11,000
 - Then the company sell the land at the fair value

Chen's Advanced Example

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

	Fair value at revaluation day	Carrying amount before revaluation	Carrying amount after revaluation	I/S		Revaluation surplus in OCI
				Dep. Expense	G/L	
Y1	\$81					
Y2	\$88					
Y3	\$60					

Disposal of Long-Lived Assets

If a long-lived asset is sold

- A G/L of disposal, the difference between cash proceeds and book value of the assets sold at the time of sale, should be reported in **income statement**.

If a long-lived asset is abandoned

- A loss, the book value of disposed long-lived assets at the time of abandoned, should be reported in **income statement**.

Disposal of Long-Lived Assets

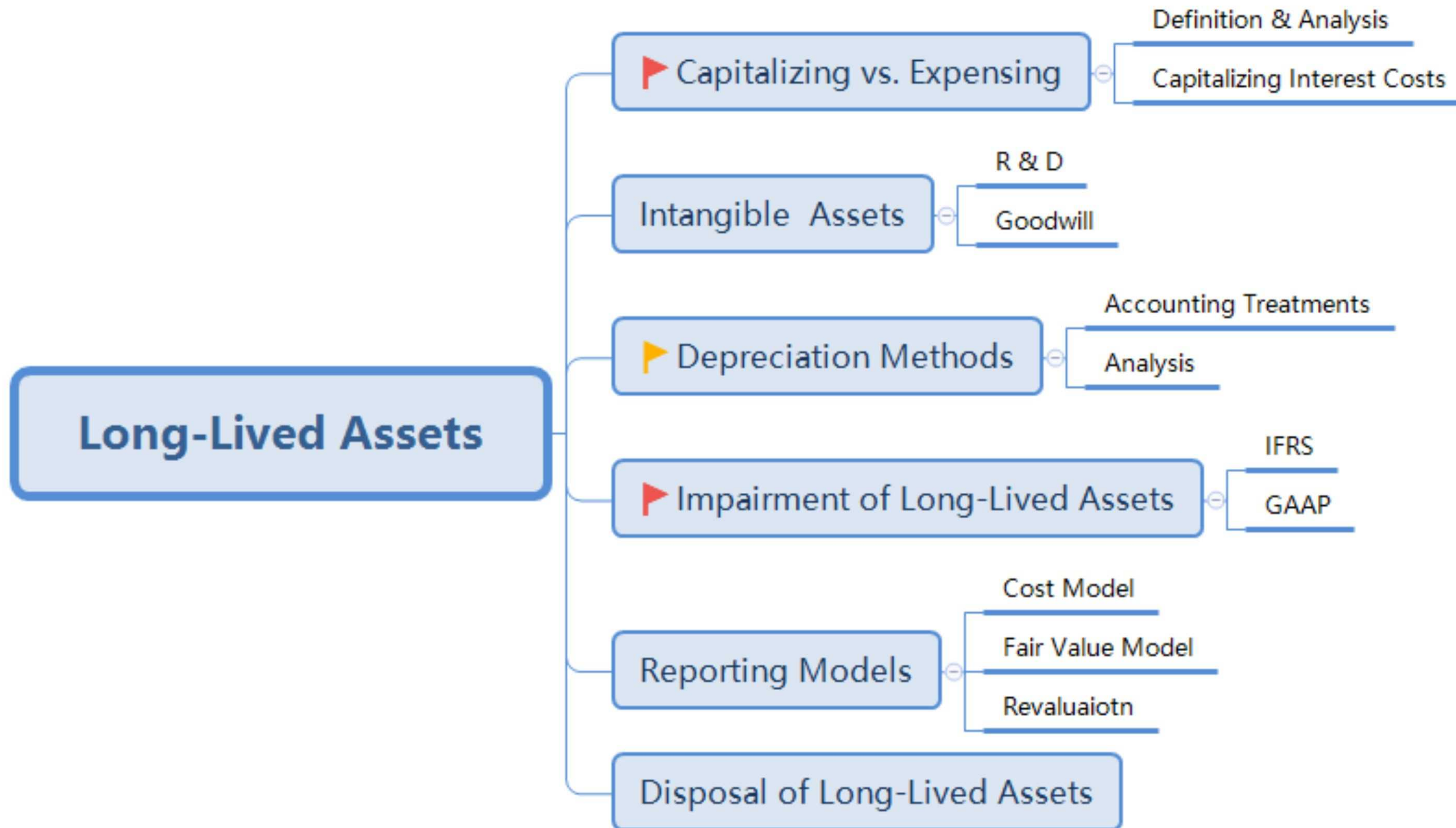
If a long-lived asset is exchanged

- A G/L is reported **at fair value of the asset given up** (or fair value of asset newly acquired).

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Three reporting models of long lived assets.
- **Exam tips:**
 - ✓ 掌握国际准则下的三个模型，特别是Revaluation Model的计算和披露方法。

Summary for the Whole Reading



Tax Reporting & Financial Reporting

Tasks:

- **Define** key terms for both tax and financial reporting.
- **Explain** how deferred tax liabilities and assets are created.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

Effective Tax Rate & Statutory Tax Rate

▶ Tax Base & Carrying Value

▶ Calculations

Changes in Income Tax Rates

▶ Income Tax Analysis

Differences between Two Systems

Income Statement	Tax Return
Revenue	Taxable Revenue
– Expense	– Deductible expenses
EBT	Taxable Income
– Income Tax Expense	→ Current Tax Payable
Net Income	

Deferred Tax Items

Sources of Differences

- Temporary / Timing differences → **Deferred Tax Items**
- Permanent differences
 - Deferred Tax Liability
 - Deferred Tax Asset
- **Deferred tax liability (DTL)**
 - A liability caused by temporary differences.
- **Deferred tax asset (DTA)**
 - An asset caused by temporary differences.
- Both DTLs and DTAs are presented on the balance sheet

Not Netted

Chen's Example: Illustration for Timing Difference

Financial reporting

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Revenue	6000	6000	6000	6000	6000	30000
Other Expense	(3000)	(3000)	(3000)	(3000)	(3000)	(15000)
Accounting Depreciation expense	(1000)	(1000)	(1000)	(1000)	(1000)	(5000)
Earning before tax	2000	2000	2000	2000	2000	10000
Income tax expense (30%)	(600)	(600)	(600)	(600)	(600)	(3000)
Net income	1400	1400	1400	1400	1400	7000

Tax reporting

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Revenue	6000	6000	6000	6000	6000	30000
Other Expense	(3000)	(3000)	(3000)	(3000)	(3000)	(15000)
Tax depreciation expense	(2200)	(1320)	(800)	(500)	(180)	(5000)
Taxable income	800	1680	2200	2500	2820	10000
Tax payable (30%)	(240)	(504)	(660)	(750)	(846)	(3000)
Net income	560	1176	1540	1750	1974	7000

Tax reporting & Financial Reporting

Tax reporting

- Taxable income = Taxable revenue – Tax deductible expense
- Taxes payable = Taxable income \times Tax rate
- Income tax paid = Actual cash outflow for income tax.

(Actual cash outflow for tax in CFS)

Financial reporting

- Pretax income (Accounting profit) = Earning before tax
- **Income tax expense = current taxes payable + Δ DTL – Δ DTA**

Chen's Example: Illustration for Calculation

	Tax Rate = 30%	Year 1	Year 2	Year 3	Year 4	Year 5
Financial	Accounting Depreciation expense	1000	1000	1000	1000	1000
	Accounting Accumulated Depreciation	1000	2000	3000	4000	5000
	Income tax expense	600	600	600	600	600
Tax	Tax depreciation expense	2200	1320	800	500	180
	Tax Accumulated Depreciation	2200	3520	4320	4820	5000
	Tax payable	240	504	660	750	846

I/S	Year 1	Year 2	Year 3	Year 4	Year 5
Income tax expense	600	600	600	600	600
	=	=	=	=	=
Current tax payable	240	504	660	750	846
	+	+	+	+	+
Deferred tax expense	360	96	(60)	(150)	(246)
B/S	Year 1	Year 2	Year 3	Year 4	Year 5
Deferred tax liability	360	456	396	246	0
Δ Deferred tax liability	360	96	(60)	(150)	(246)

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Terminology of tax and financial reporting.
 - ✓ Difference between tax and financial reporting.
- **Exam tips:**
 - ✓ 掌握财务报表和税务报表（主要是利润表）使用的术语。
 - ✓ 了解财务报表和税务报表的差异以及导致递延税的过程。

Effective Tax Rate & Statutory Tax Rate

Tasks:

- **Define** effective tax rate and statutory tax rate.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

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Statutory Tax Rate

➤ Chen's questions:

✓ Which one is correct? And what is the nature of the tax rate in ①?

① $\text{Taxes payable} = \text{Taxable income} \times \text{Tax rate}$

② $\text{Tax Expense} = \text{EBT} \times \text{Tax rate}$

✓ When will ② be correct?

Statutory Tax Rate and Effective Tax Rate

Accounting		Statutory Tax Rate = 30%, DTA _{beg} = DTL _{beg} = 0
Revenue	100	Unrealized gain for trading securities=10, others are taxable
Expense	(40)	All are deductible
EBT	60	→ Tax Expense =

Statutory Tax Rate and Effective Tax Rate

Accounting		Statutory Tax Rate = 30%, DTA beg = DTL beg = 0
Revenue	100	T-notes' Coupon Income=10, others are taxable
Expense	(40)	All are deductible
EBT	60	→ Tax Expense =

Permanent Differences

- Permanent differences: differences in tax and financial reporting that will not reverse in the future.
- Permanent differences will not cause deferred tax items
- Reasons for permanent differences:
 - ✓ Income or expense items not allowed by tax legislation
 - ✓ Tax credits for some expenditures
- It will results **statutory rate \neq effective tax rate**
- Tax disclose

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Effective Tax Rate & Statutory Tax Rate
- **Exam tips:**
 - ✓ 区分实际税率和法定税率，并掌握两种税率的应用场景。

Tax Base & Carrying Value

Tasks:

- **Calculate** the tax base of a company's assets and liabilities.
- **Describe** the situations that will create DTA or DTL.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

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Tax Base

➤ Tax base

- ✓ **Tax base of asset:** amount deductible for tax purposes in future periods as economic benefits are realized
- ✓ **Tax base of liability:** the carrying value of the liability minus any amounts that will be deductible on the tax return in the future.

➤ Permanent differences

→ **tax base** and **carrying value** will be the same

➤ Timing differences

→ **tax base** and **carrying value** will be different

Tax Base and Accounting Base of Assets

Depreciable assets

➤ **Accounting base**

= Original cost – accumulated accounting depreciation – impairment

➤ **Tax base** = Original cost – accumulated tax depreciation

Research in R&D

➤ **Accounting base** (Expensed as incurred) = Zero

➤ **Tax base** (Capitalized) = Original cost – accumulated amortization

Account receivable

➤ **Accounting base** = Invoiced amount – allowance for bad debt

➤ **Tax base** = Invoiced amount (do not recognize allowance)

Tax Base and Accounting Base of 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**

Determine DTA / DTL

Items	Carrying value > Tax Base	Carrying value < Tax Base
Assets	DTL	DTA
Liability	DTA	DTL

➤ Tax loss carrying forward also results in a DTA.

Exercise

- I. €300,000 of rental revenue is received in advance on a two-year lease. It is taxed on a cash basis, but deferred for accounting purposes.
- Rent received in advance creates a liability on the financial statements with a carrying value of €300,000 but with a tax base of €0. The temporary difference creates a deferred tax asset.
- Alternatively an excess amount has been paid for income taxes based on the cash received (taxable income exceeded accounting income) and the company expects to recover this difference during the course of future operations.

Exercise

- II. €480,000 of installment sales. No payments are required and collections will be made on an equal basis over 2 years and taxed on a cash basis. The entire sale and related profit will be recognized for financial reporting purposes in the year of sale.
- The accounts receivable for financial statement purposes has a carrying value of €480,000 but with a tax base of €0. The temporary difference creates a deferred tax liability.
 - Alternatively, accounting income tax expense exceeded taxes payable and the firm expects to eliminate this difference over the course of future operations.

Practice

Golden Bread Manufacturer Co. had a capital expenditure that amortized over five years for accounting purposes, whereas over four years for tax purposes. The company would most likely record:

- A. a deferred tax asset.
- B. a deferred tax liability.
- C. no deferred tax asset or liability.

Answer: B

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.

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Calculation of tax base and accounting base.
 - ✓ Situations that will create DTA or DTL.
- **Exam tips:**
 - ✓ 计算资产和负债的税基，会通过比较税基和账面价值判断产生DTA还是DTL。

Calculation of Deferred Tax Items & Calculation of Income Tax Expense

Tasks:

- Balance Sheet approach and Income Statement approach to **calculate** DTA or DTL.
- **Calculate** income tax expense.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

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Calculation of Deferred Tax Items

Determine deferred tax amount – I/S approach

- Identify the difference between **Taxable Income** and **Accounting Profit** for the year
- If the difference is timing difference, changes of DTA or DTL is generated

Determine deferred tax amount – B/S approach

- Identify the difference between **Accounting Base** and **Tax Base** for every asset and liability item on balance sheet,
- Calculate DTA or DTL ending balance based on the difference.

Income Statement Approach / Balance Sheet Approach

➤ Original costs of PPE is \$6, and $DTL_0 = 0$

Tax Rate = 30%	Y1	Y2	Y3
Accounting Dep.	(2)	(2)	(2)
Tax Dep.	(3)	(2)	(1)
Δ DTL			
DTL			
Carrying Base	4	2	0
Tax Base	3	1	0
DTL			
Δ DTL			

Chen's Advanced Example

➤ Original costs of PPE is \$6, and $DTL_0 = 0$, Tax rate changes in Y2 from 30% to 40%

	Y1	Y2	Y3
Accounting Dep.	(2)	(2)	(2)
Tax Dep.	(3)	(2)	(1)
Δ DTL			
DTL			
Carrying Base	4	2	0
Tax Base	3	1	0
DTL			
Δ DTL			

Income Statement Approach / Balance Sheet Approach

➤ Warrant expense=\$10 each year and CF out=\$30 at Y3

Tax Rate = 30%	Y1	Y2	Y3
Warranty Expense	(10)	(10)	(10)
Tax Expense	0	0	(30)
Δ DTA			
DTA			
Warranty Liability	10	20	0
Tax Base	0	0	0
DTA			
Δ DTA			

Calculation of Income Tax Expense

$$\text{Income tax expense} = \text{current tax payable} + \Delta \text{DTL} - \Delta \text{DTA}$$

Example:

	2018	2019
Deferred tax assets	300	560
Deferred tax liabilities	650	460
Taxes payable	1000	1200

$$\begin{aligned}\text{Income tax expense} &= \$1,200 + (460 - 650) - (560 - 300) \\ &= \$1,200 + (-190) - (260) \\ &= \$750\end{aligned}$$

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Balance Sheet and Income Statement approach.
 - ✓ Calculation of income tax expense.
- **Exam tips:**
 - ✓ 使用资产负债表法计算存量递延税以及当期发生的递延税。
 - ✓ 计算所得税费用。

Changes in Statutory Income Tax Rate

Tasks:

- **Describe** the effects of changing the statutory income tax rate.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

Effective Tax Rate & Statutory Tax Rate

▶ Tax Base & Carrying Value

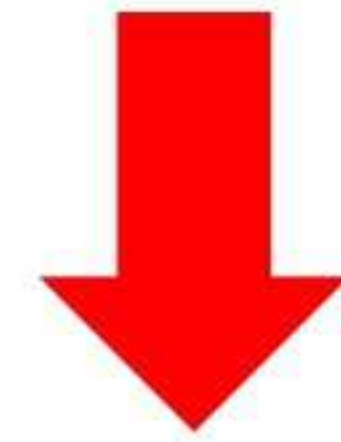
▶ Calculations

Changes in Income Tax Rates

▶ Income Tax Analysis

Calculation of Income Tax Expense

Income tax expense = current tax payable + Δ DTL – Δ DTA



taxable income \times current tax rate

- Current tax payable, the ending balance of DTL or DTA are both calculated at the end of each fiscal year
- ✓ Current tax payable should use the **current tax rate**.
- ✓ Calculate DTL and DTA should use **future tax rate** that expected to apply when the asset is realized or the liability settled.

When the Tax Rate Changes

- $DTA \text{ or } DTL_{\text{ending}} = \text{Temporary difference}_{\text{ending}} \times \text{New tax rate}$
- ✓ When the tax rate changes, temporary difference_{ending} **does not change**, but the DTA ending or DTL ending **will change** with the tax rate.
- ✓ ΔDTA and ΔDTL is generated

Chen's Tough Example

- BM Inc. had a deferred tax liability of \$30,000 on January 1, 2012 that is expected to reverse in 2014.
- In 2012, BM Inc. generated pretax financial income of \$400,000 and taxable income of \$250,000 due to a difference in depreciation.
- The tax rate for 2012 is 40% but Congress enacted a reduction in tax rates effective January 1, 2013 to 30%.
- Big Mother's income tax expense for 2012 is closest to:

Method ONE

- ✓ income tax expense = Current tax payable + Δ DTL – Δ DTA
- ✓ Current tax payable = current taxable income \times current tax rate =
 $\$250,000 \times 40\% = \$100,000$
- ✓ Δ DTL comes from two sources, one is the change of existing DTL due to tax rate adjustment, and the other is the incremental DTL incurred in 2012.
 - Incremental DTL in 2012 = $(\$400,000 - 250,000) \times 30\% = 45,000$
 - Change in DTL = $\$30,000 \times (30\%/40\%) - 30,000 = -7,500$
- ✓ Δ DTL = $45,000 + (-7,500) = 37,500$
- ✓ Income tax expense = $100,000 + 37,500 = 137,500$

Method TWO

- ✓ Current tax payable = current taxable income × current tax rate = $\$250,000 \times 40\% = \$100,000$
- ✓ Temporary difference balance at the end of 2012
= Temporary difference beginning + incremental in 2012
= $\$30,000 / 40\% + (\$400,000 - \$250,000) = \$225,000$
- ✓ $\Delta \text{DTL} = 225,000 \times 30\% - 30,000 = 37,500$
- ✓ Income tax expense = $100,000 + 37,500 = 137,500$

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Describe the effect on income tax expense when tax rate changes.
- **Exam tips:**
 - ✓ 辨析当税率发生改变后如何影响所得税费用和净利润。

Income Tax Analysis

Tasks:

- **Describe** the valuation allowance for deferred tax assets.

Mindmap: Income Taxes

Income Taxes

▶ Financial Reporting & Tax Reporting

Effective Tax Rate & Statutory Tax Rate

▶ Tax Base & Carrying Value

▶ Calculations

Changes in Income Tax Rates

▶ Income Tax Analysis

Recognition of DTA

- DTA should be assessed at every balance sheet date to see whether the deferral will be recovered entirely.
- The carrying value of DTA should be reduced to the expected recoverable amount by increasing the amount of **a contra account valuation allowance** under US GAAP.
- If any subsequent recovery of the deferral is expected to realize (future earning power is expected to increase), reduction of valuation allowance is **allowed** under US GAAP.

Recognition of DTA

- A valuation allowance reduces a deferred tax asset
 - **Net DTA = DTA – Valuation allowance**
- Allowance is based on likelihood that the asset will not be realized (e.g. no taxable income expected)
- Valuation allowance can be used to manipulate income:

Valuation Allowance	Net DTA	Tax expense	Net income	Equity
Increase	↓	↑	↓	↓
Decrease	↑	↓	↑	↑

Recognition of DTL

- If DTL is to be reversed:
 - ✓ Treated as true **liability**

- If DTL is unlikely to be reversed:
 - ✓ Treated as **equity**

Classification

- GAAP: Either current or non current on B/S, base on the classification of the related non-tax assets or liabilities.
- IFRS: Non current on B/S.

Chen's Advanced Question (Finally\(^o^)/)

- Whether “Income Tax Expense” is always be listed on I/S ?

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Recognition of DTA/DTL.
 - ✓ Valuation allowance for deferred tax assets.
- **Exam tips:**
 - ✓ 知道DTA和DTL相关确认问题;
 - ✓ 了解Valuation Allowance是如何产生, 及其影响。

Summary for the Whole Reading

Income Taxes

▶ Financial Reporting & Tax Reporting

EBT & Taxable Income

Tax Expense & Taxpayable

Effective Tax Rate & Statutory Tax Rate

Timing Difference

Permanent Difference

▶ Tax Base & Carrying Value

Deferred Tax Asset

Deferred Tax Liability

▶ Calculations

Calculation of Deferred Tax Items

Calculation of Income Tax Expense

B/S Approach
I/S Approach

Changes in Income Tax Rates

Current Tax Rate

Future Tax Rate

▶ Income Tax Analysis

Recognition of DTA

Recognition of DTL

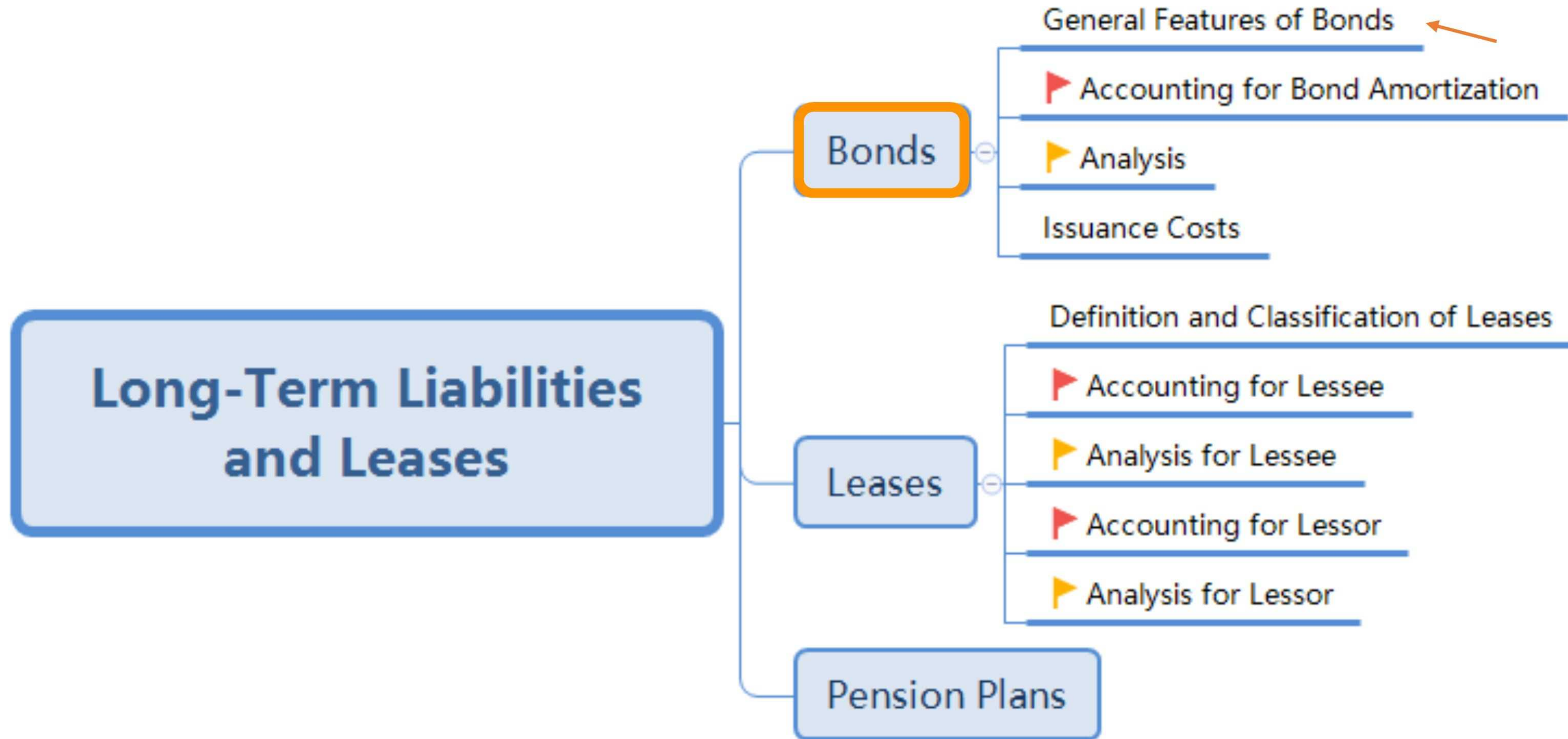
Long-Term Liabilities and Leases

General Features of Bonds

Tasks:

- Describe the terminology of bonds.
- Describe the role of debt covenants in protecting creditors.

Mindmap: Long-Term Liabilities and Leases



Terminology

Face value (Par value)

- the value of principal that the bondholder receives at maturity

Coupon rate

- the interest rate which is stated in the bond

Coupon payments

- periodic interest payments given to the bondholders

Effective rate of interest

- the interest rate which equates PV of future CF and the issue price

Interest expense

- Interest expense reported in income statement, is calculated by multiplying book value of bond liability at the beginning of period with the effective interest rate

Bond Issuance

At issuance date:

- When the market rate = the coupon rate
→ the bond is par bond (priced at face value)
- When the market rate > the coupon rate
→ the bond is discount bond (priced below par)
- When the market rate < the coupon rate
→ the bond is premium bond (priced above par)

Debt covenants

- Covenants are restrictions imposed on the borrower to protect the lender.
- **Affirmative covenants: required actions**
 - ✓ Make principal and interest payments in time.
 - ✓ Maintain certain ratios (Liquidity and solvency ratios) above specified levels.
 - ✓ Maintain collateral.
- **Negative covenants: restricted actions**
 - ✓ Increase dividends or repurchasing shares.
 - ✓ Make new borrowings.
 - ✓ Engage in M&A transactions.

Summary

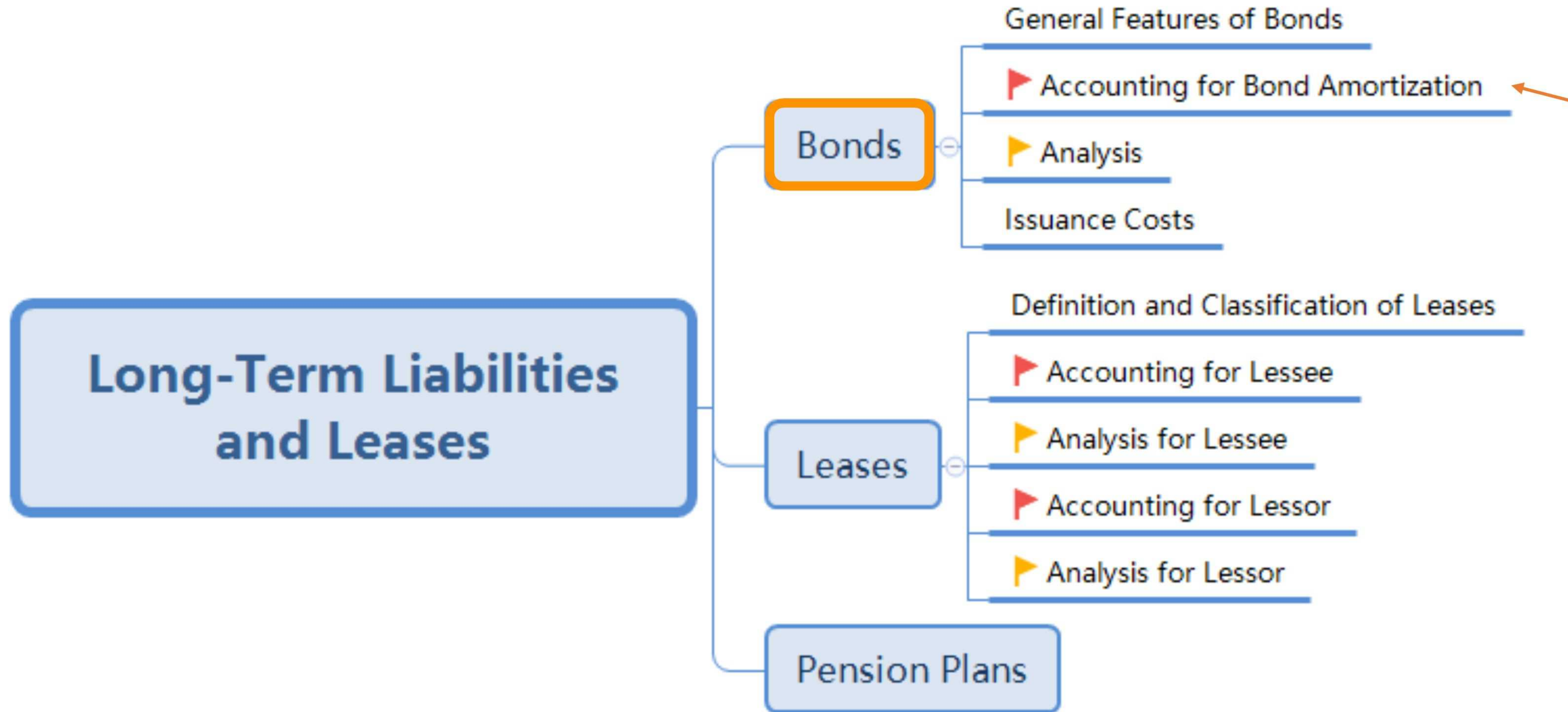
- **Importance:** ☆
- **Content:**
 - ✓ Review for the basic features of bonds.
 - ✓ Role of debt covenants in protecting creditors.
- **Exam tips:**
 - ✓ 结合一级固收科目，学（复）习债券基本特性。
 - ✓ 熟练掌握债券折价、平价、溢价发行的条件。
 - ✓ 了解债券发行的条款特征。

Accounting for Bond Amortization

Tasks:

- **Determine** the initial measurement and subsequent measurement of bonds.
- **Describe** the effective interest method and **calculate** interest expense.

Mindmap: Long-Term Liabilities and Leases



Example

- On 31 Dec 2002, a company issued a three year 10% annual coupon bond with a face value of \$1000.
- If:
 1. Market interest rate at issuance is 10%
 2. Market interest rate at issuance is 8%
 3. Market interest rate at issuance is 12%
- How to do the accounting treatments?

Issue at Par (market interest rate is 10%)

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

	2003 初	2003 末	2004 末	2005 末		2003 初	2003 末	2004 末	2005 末
Cash					Bonds Payable				
					RE				

Issue at Premium (market interest rate is 8%)

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

	2003 初	2003 末	2004 末	2005 末		2003 初	2003 末	2004 末	2005 末
Cash					Bonds Payable				
					RE				

Issue at Discount (market interest rate is 12%)

	BV 1 st Jan	Interest expense (12%)	Coupon (10%)	BV 31 st Dec
2003	951.96	114.24	(100)	966.20
2004	966.20	115.94	(100)	982.14
2005	982.14	117.86	(100)	1000

	2003 初	2003 末	2004 末	2005 末		2003 初	2003 末	2004 末	2005 末
Cash					Bonds Payable				
					RE				

Chen's Important Summary

- Two ways to calculate the amortized costs of bond

1. Bond amortization schedule

✓ $BV_t = BV_{t-1} + \text{Interest expense}_t - \text{Coupon payments}$

- $\text{Interest expense}_t = BV_{t-1} \times \text{Effective market rate}$
- $\text{Coupon payments} = \text{Coupon rate} \times \text{Par value}$

✓ $\text{Amortization} = \text{Interest expense} - \text{Coupon payments}$

2. Using financial calculator

✓ $FV = \text{Par Value}, PMT = \text{Coupon Payment},$

$I/Y = \text{Effective market rate}, N = T - t \rightarrow (-) PV_t$

- $T = \text{total period to maturity}, t = \text{the } t^{\text{th}} \text{ period from issue}$

Practice

Golden Investment Inc. issued \$100 million face value, 10-year bonds with 6% coupon paid annually. The effective market interest rate was 4% at issuance. What's the interest expense for the fourth year and bonds payable at the end of fourth year after issuance (in million)?

Interest expense	Bonds payable
A. \$4.42	\$112
B. \$6.63	\$110.48
C. \$4.48	\$110.48

Practice

Answer: C

- Interest expense_t = $BV_{t-1} \times \text{Effective market rate}$
- Interest exp₄ = $BV_3 \times \text{effective market rate}$
 - BV_3 : PMT = -6, FV = -100, N = 7, I/Y = 4 \rightarrow $PV_3 = \$112$
 - Interest exp₄ = $\$112 \times 4\% = \4.48
- Bonds payable₄: PMT = -6, FV = -100, N = 6, I/Y = 4 \rightarrow $PV_4 = \$110.48$

Chen's Questions: Compare Issuer with Investor

	BV 1 st Jan	Interest expense (12%)	Coupon (10%)	BV 31 st Dec
2003	951.96	114.24	(100)	966.20
2004	966.20	115.94	(100)	982.14
2005	982.14	117.86	(100)	1000

	2003 初	2003 末	2004 末	2005 末		2003 初	2003 末	2004 末	2005 末
Cash					Bonds Payable				
					RE				
Cash									
FA (HTM)					RE				



Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Initial measurement and subsequent measurement of bonds.
 - ✓ Calculate interest expense.
- **Exam tips:**
 - ✓ 了解公司发行公司债券时应该如何记账（重点掌握负债端的摊销过程）。
 - ✓ 计算每年会产生财务费用。

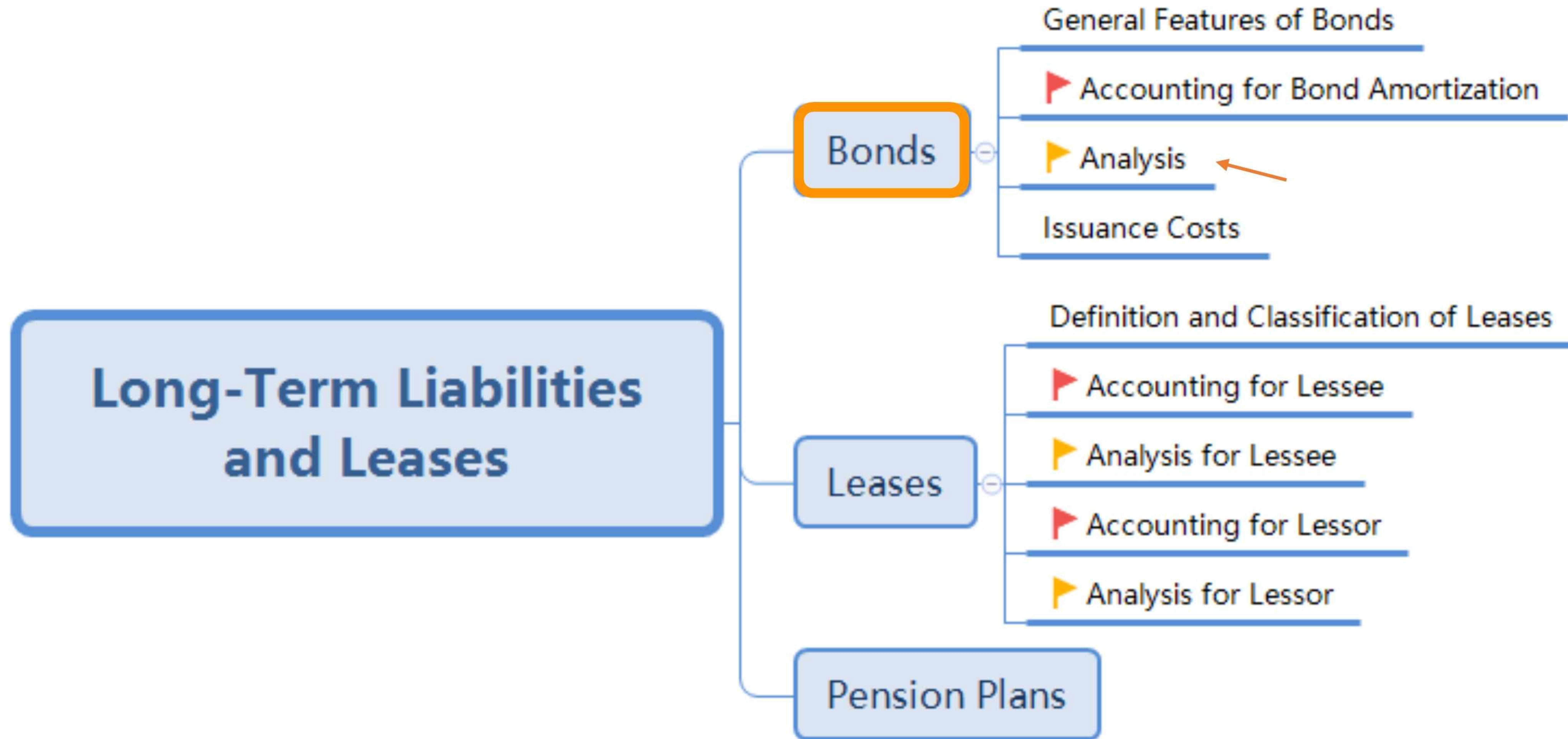
Long-Term Liabilities and Leases

Analysis for Accounting Treatments

Tasks:

- **Describe** the amortization features of the bond.
- **Distinguish** between analyst's view of the cash flow and accounting standards.

Mindmap: Long-Term Liabilities and Leases



Chen's Questions

- When the bond is issued at premium / discount
 - ✓ How will the coupon payments change?
 - ✓ How will the interest expenses change?
 - What's the speed of the above changes?
 - ✓ For each period, which is larger, interest expense or coupon payment?
- What will happen if the market rate changes in the following year?

Chen's Questions

	BV 1st Jan	Interest expense (12%)	Coupon (10%)	BV 31st Dec
Y1	951.96	114.24	(100)	966.20
Y2	966.20	115.94	(100)	982.14
Y3	982.14	117.86	(100)	1000

	BV 1st Jan	Interest expense (8%)	Coupon (10%)	BV 31st Dec
Y1	1051.54	84.12	(100)	1035.66
Y2	1035.66	82.85	(100)	1018.52
Y3	1018.52	81.48	(100)	1000

Practice

Golden Investment Inc. raises \$100 million by issuing zero-coupon bonds, its interest expense 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

Cash Flow of Bond: C P A 's View

- Periodic payment of Coupon:
 - ✓ **CFO outflow (GAAP)***
 - ✓ **CFO outflow or CFF outflow (IFRS)**

- Principal: **CFF**
 - ✓ Amount received at issuance: **CFF inflow**
 - ✓ Principal repayment at maturity: **CFF outflow**

* Assume U.S. GAAP applies unless otherwise noted.

Cash Flow of Bond: C F A 's View for Bonds Issued at Discount

- For analysis purpose, the interest expense and the amortization of the premium/discount should be separated.

	BV 1 st Jan	Interest expense	Coupon	BV 31 st Dec
Y1	951.96	114.24	(100)	966.20

Cash Outflow in Y1	Original CFO		CFO for F/A		CFF for F/A
	100	=	114.24	–	14.24

- For bonds issued at discount if without analyst's adjustment
 - ✓ CFO is **overstated** and CFF is **understated**.

Cash Flow of Bond: C F A 's View for Bonds Issued at Premium

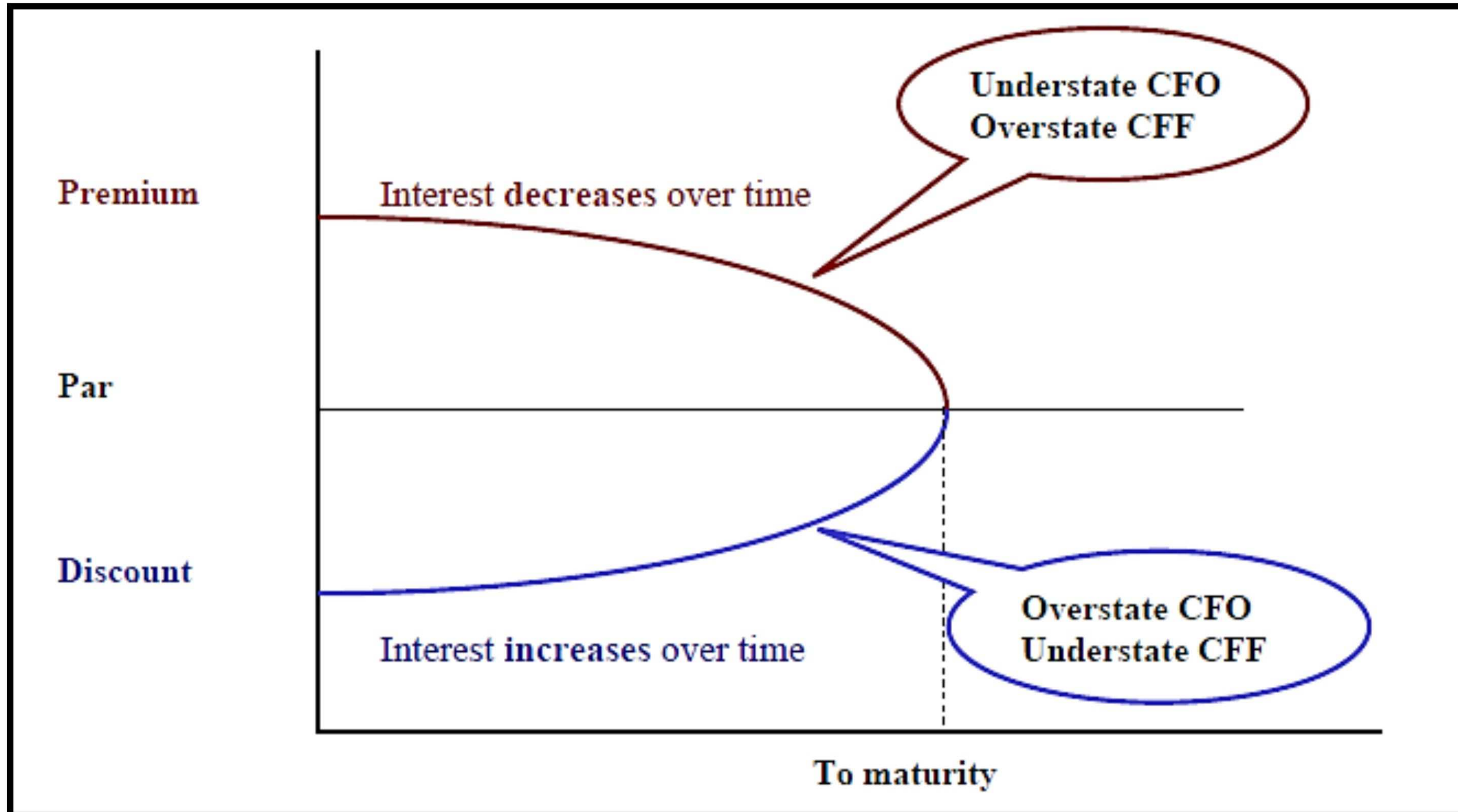
- For analysis purpose, the interest expense and the amortization of the premium/discount should be separated.

	BV 1 st Jan	Interest expense	Coupon	BV 31 st Dec
Y1	1051.54	84.12	(100)	1035.66

Cash Outflow in Y1	Original CFO		CFO for F/A		CFF for F/A
	100	=	84.12	+	15.88

- For bonds issued at premium, if without analyst's adjustment
- ✓ CFO is **understated** and CFF is **overstated**.

Summary - Carrying Value of Bond on Balance Sheet



Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Features of the amortization;
 - ✓ Analyst's view of the cash flow.
- **Exam tips:**
 - ✓ 掌握债券摊销的特征。
 - ✓ 知道分析师对于现金流的重分类处理。

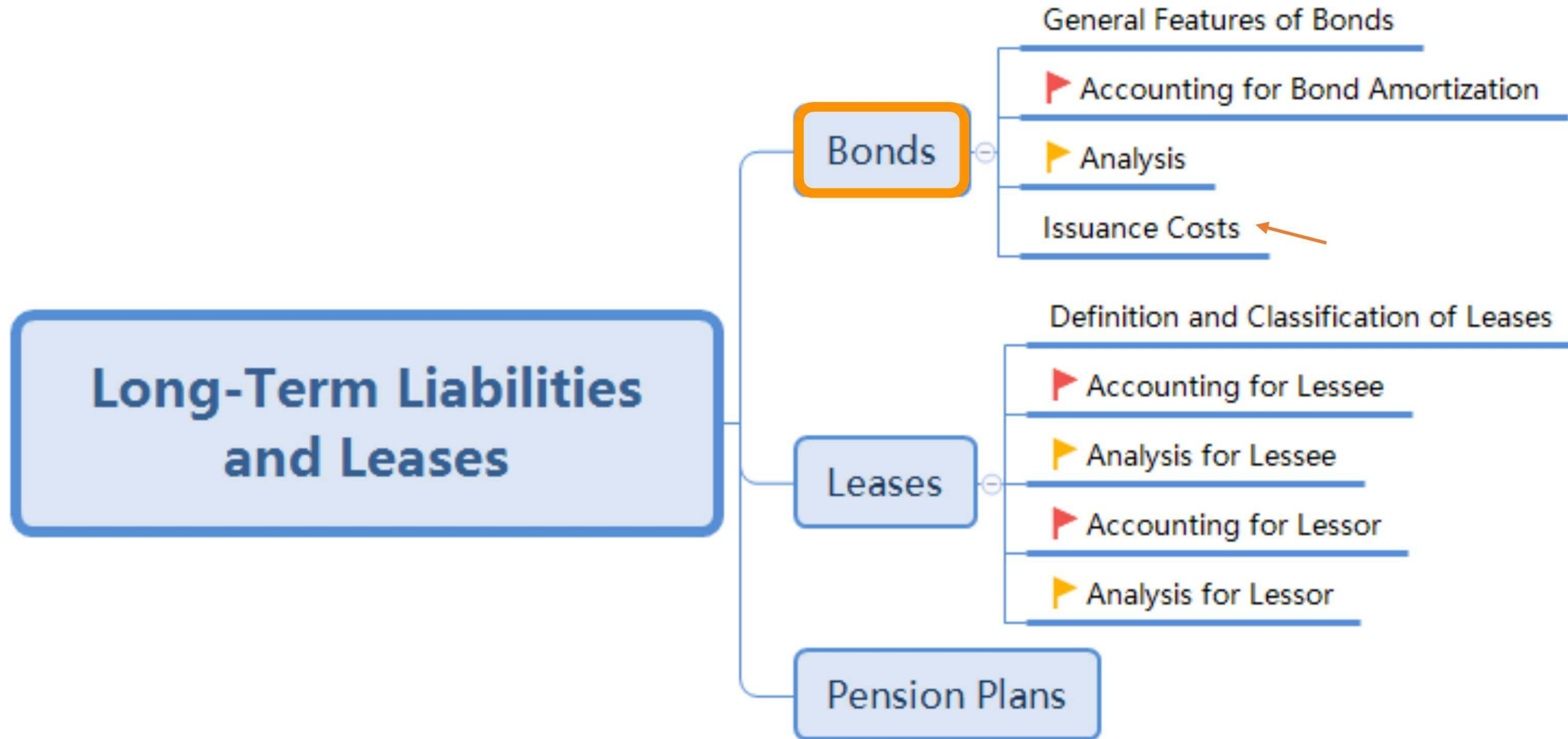
Long-Term Liabilities and Leases

Issuance Costs

Tasks:

- **Account** for Issuance Cost of Debt.
- **Explain** the derecognition of debt.

Mindmap: Long-Term Liabilities and Leases



Issuance Costs

- Issuance costs refer to printing costs, Legal and accounting fees, sales commissions, and other fees incurred during bond issuance.
- Under U.S. GAAP
 - ✓ Issuance costs are capitalized as asset (deferred charge) and allocated to I/S as an expense over the bond term.
- Under IFRS
 - ✓ Initial bond liability on B/S is reduced by amount of the issuance costs, increasing effective interest rate.

Derecognition of Debt

- A firm may choose to redeem bonds before maturity
 - ✓ Interest rates reduction
 - ✓ Firm has generated surplus cash through operation
 - ✓ Funds from the issuance on the equity market is available
- Under U.S. GAAP, any unamortized issuance costs must be written off and included in the gain or loss calculation
- $G/L \text{ on repurchase} = B/S \text{ carrying value} - \text{cash paid} - \text{unamortized issuance costs}$

Example

- A firm reacquires \$1 million face value bonds at 105% of par when the carrying value of the bond liability is \$998,000.
- What's the gain or loss from debt derecognition?

Answer:

- Losses = $\$1,050,000 - \$998,000 = \$52,000$ recognize in I/S

Summary

- **Importance:** ☆ ☆
- **Content:**
 - ✓ Derecognition of debt.
 - ✓ Measurement of issuance cost in GAAP and IFRS.
- **Exam tips:**
 - ✓ 了解回购债券损益的会计处理。
 - ✓ 辨析美国和国际准则对于债券发行成本的会计处理。

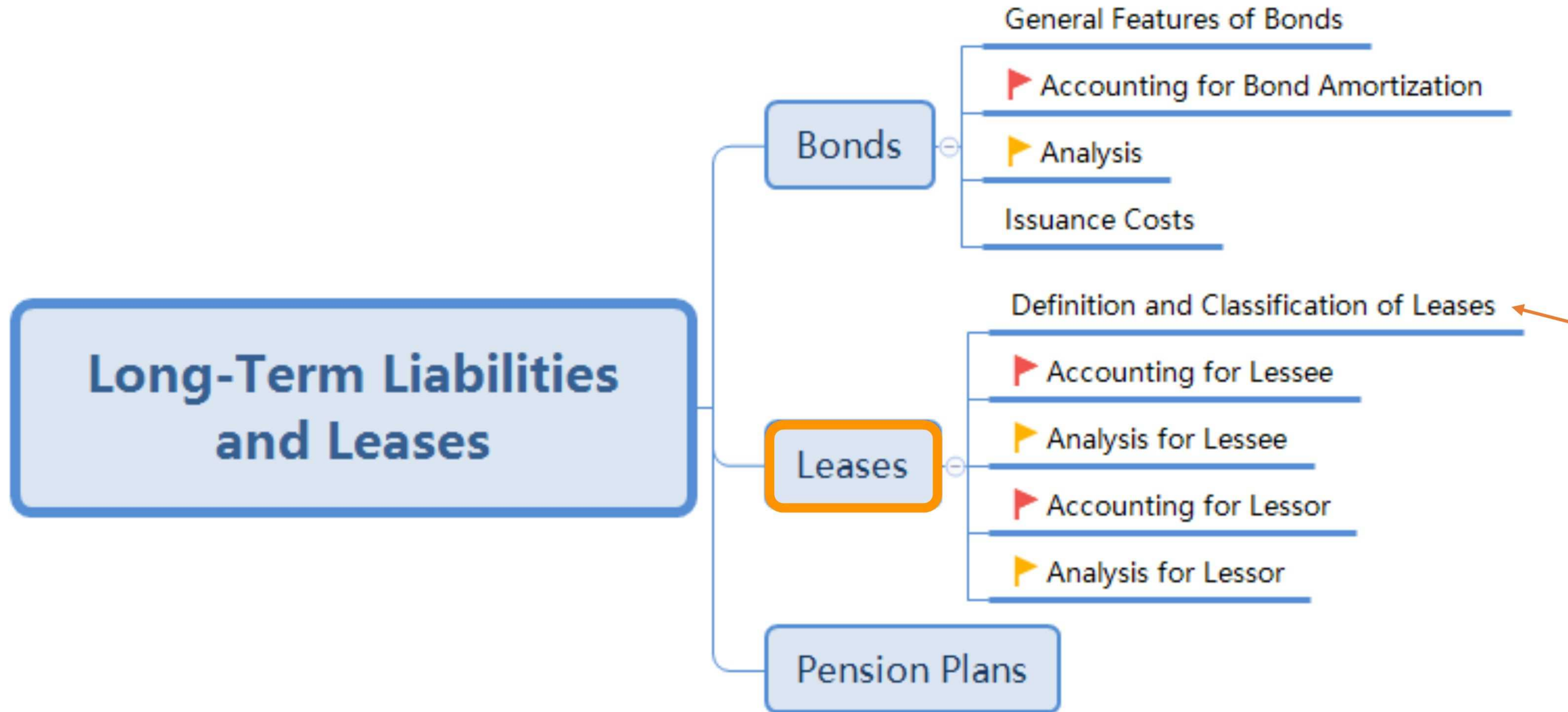
Long-Term Liabilities and Leases

Definition and Classification of Leases

Tasks:

- **Explain** motivations for leasing assets instead of purchasing.
- **Distinguish** between a finance lease and an operating lease in U.S. GAAP and IFRS.

Mindmap: Long-Term Liabilities and Leases



Definition of Lease

- 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 parties** involved in leases
 - ✓ Lessee: use the asset
 - ✓ Lessor: owner of the asset
- **Two types** of lease
 - ✓ Operating lease
 - ✓ Finance lease

Classification of Leases

➤ Operating lease

- ✓ Operating lease is basically a rental.
- ✓ Periodic lease payments are reported as **rental expense** in I/S.

➤ Finance lease / Capital lease

- ✓ A finance lease is, in substance, a purchase of an asset with debt.
- ✓ Lessee will report equal value of **asset and liability** on B/S.
- ✓ The lessee should **record depreciation expense and interest expense** in I/S.

Reasons to Lease

For lessee:

- Cheaper financing
 - Less or no down payments
 - Lower fixed interest rate
- Less covenants restrictions

For lessor:

- Less risk of obsolescence
- Tax benefits of ownership

Chen's Very Important Map

➤ Lessee

- ✓ **IFRS**: same method with **finance lease**
- ✓ **GAAP**: difference between **finance lease** and **operating lease***
- ✓ Exceptions for short-term lease (GAAP, IFRS) and leases where leased asset is low value (IFRS): same method with **operating lease**

➤ Lessor

- ✓ **IFRS**: difference between **finance lease** and **operating lease**
- ✓ **GAAP**: difference between **finance lease** (**sales-type, direct finance**) and **operating lease**

General Principle of Classification

- A lease will be classified as a **finance lease** if any of the following criteria are met:
 1. Transfers ownership of the asset to the lessee after the lease ends
 2. Includes a bargain purchase option
 3. Covers a period of time that is a major part of the asset's useful life
 4. PV of lease payments that equal or exceed the major part of asset's fair value
 5. Involves an asset that is so specialized that it will have no alternative use to the lessor after the lease ends
- Otherwise, it will be classified as an operating lease

Summary

- **Importance:** ☆
- **Content:**
 - ✓ Lessee and lessor
 - ✓ Finance lease and operating lease
 - ✓ Requirements of the accounting standards
- **Exam tips:**
 - ✓ 了解经营性租赁和融资性租赁;
 - ✓ 熟记会计准则的基本分类规则。

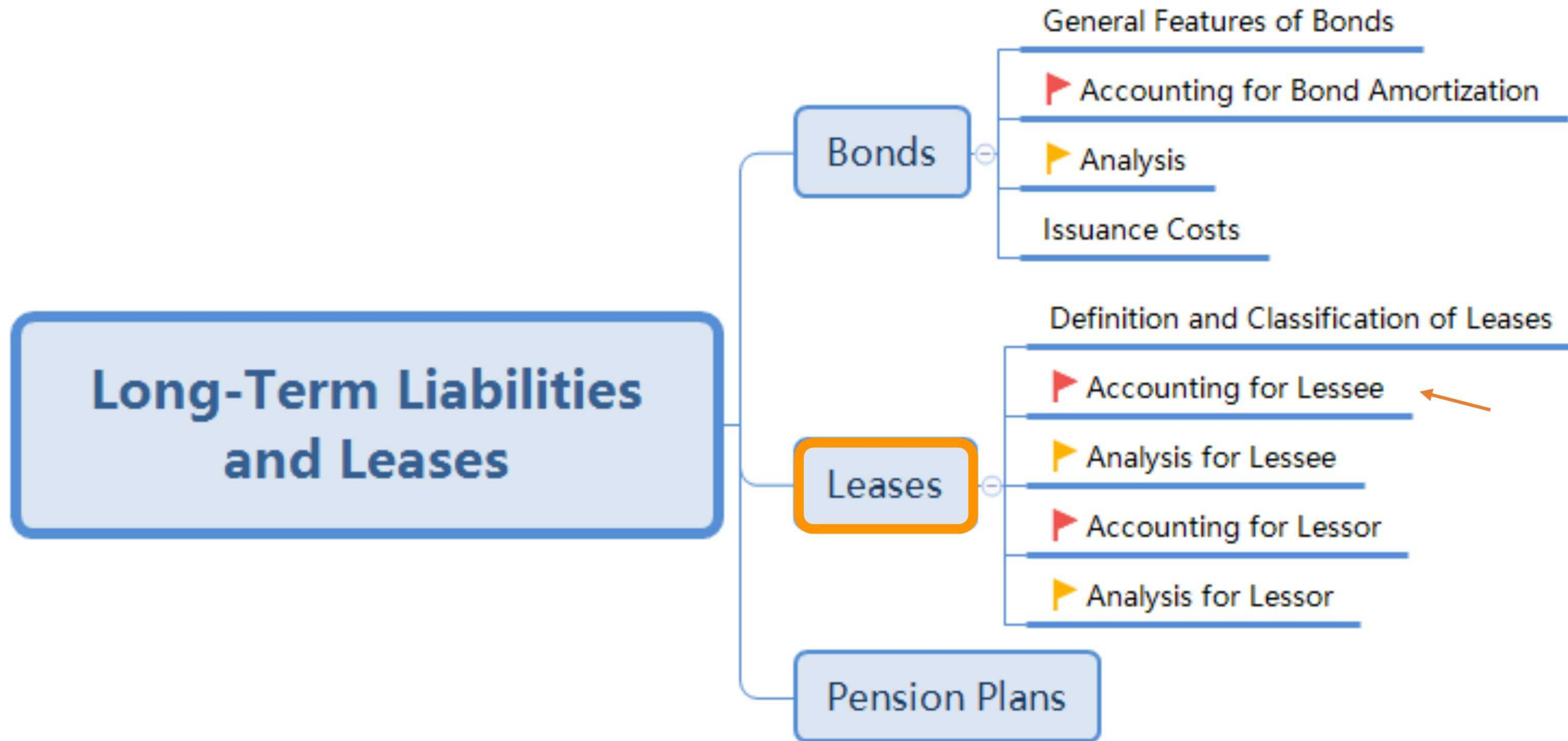
Long-Term Liabilities and Leases

Accounting for Lessee

Tasks:

- **Determine** the initial recognition, initial measurement, and subsequent measurement of finance leases.
- **Distinguish** between a finance lease and an operating lease from perspectives of lessee.

Mindmap: Long-Term Liabilities and Leases



Chen's Very Important Map

➤ Lessee

- ✓ **IFRS**: same method with **finance lease** 3
- ✓ **GAAP**: difference between **finance lease** and **operating lease*** 2
- ✓ Exceptions for short-term lease (GAAP, IFRS) and leases where leased asset is low value (IFRS): same method with **operating lease** 1

➤ Lessor

- ✓ **IFRS**: difference between **finance lease** and **operating lease**
- ✓ **GAAP**: difference between **finance lease** (**sales-type, direct finance**) and **operating lease**

Accounting for Lessee

1

GAAP (short term)
IFRS (short term or low value)

Inception	B/S	I/S	CF/S

Periodic	B/S	I/S	CF/S





Accounting for Lessee

2

GAAP (operating lease*)

Inception

B/S

I/S

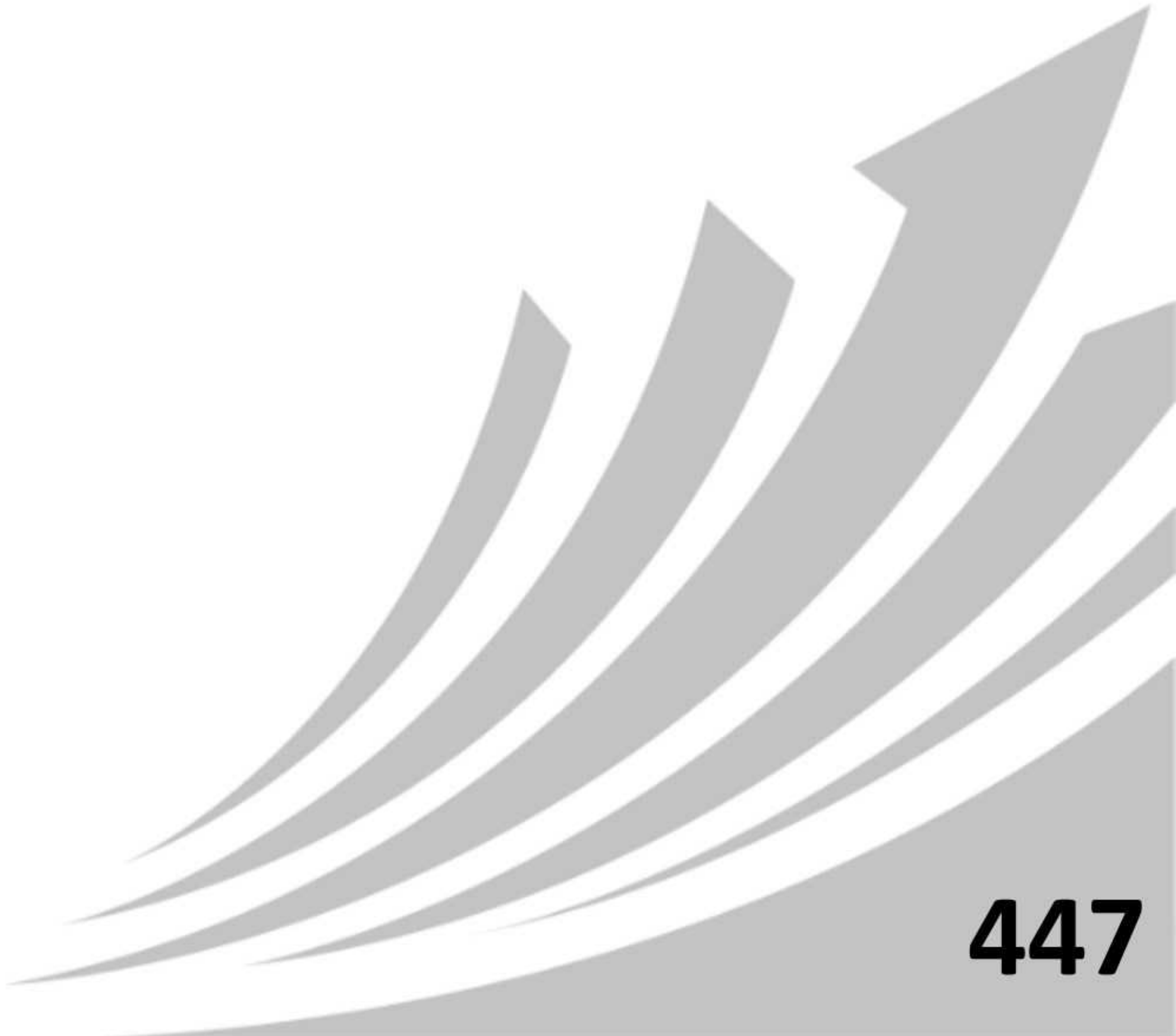
CF/S

Periodic

B/S

I/S

CF/S



Accounting for Lessee

3

IFRS
GAAP (finance lease)

Inception

B/S

I/S

CF/S

Periodic

B/S

I/S

CF/S

Accounting for Lessee

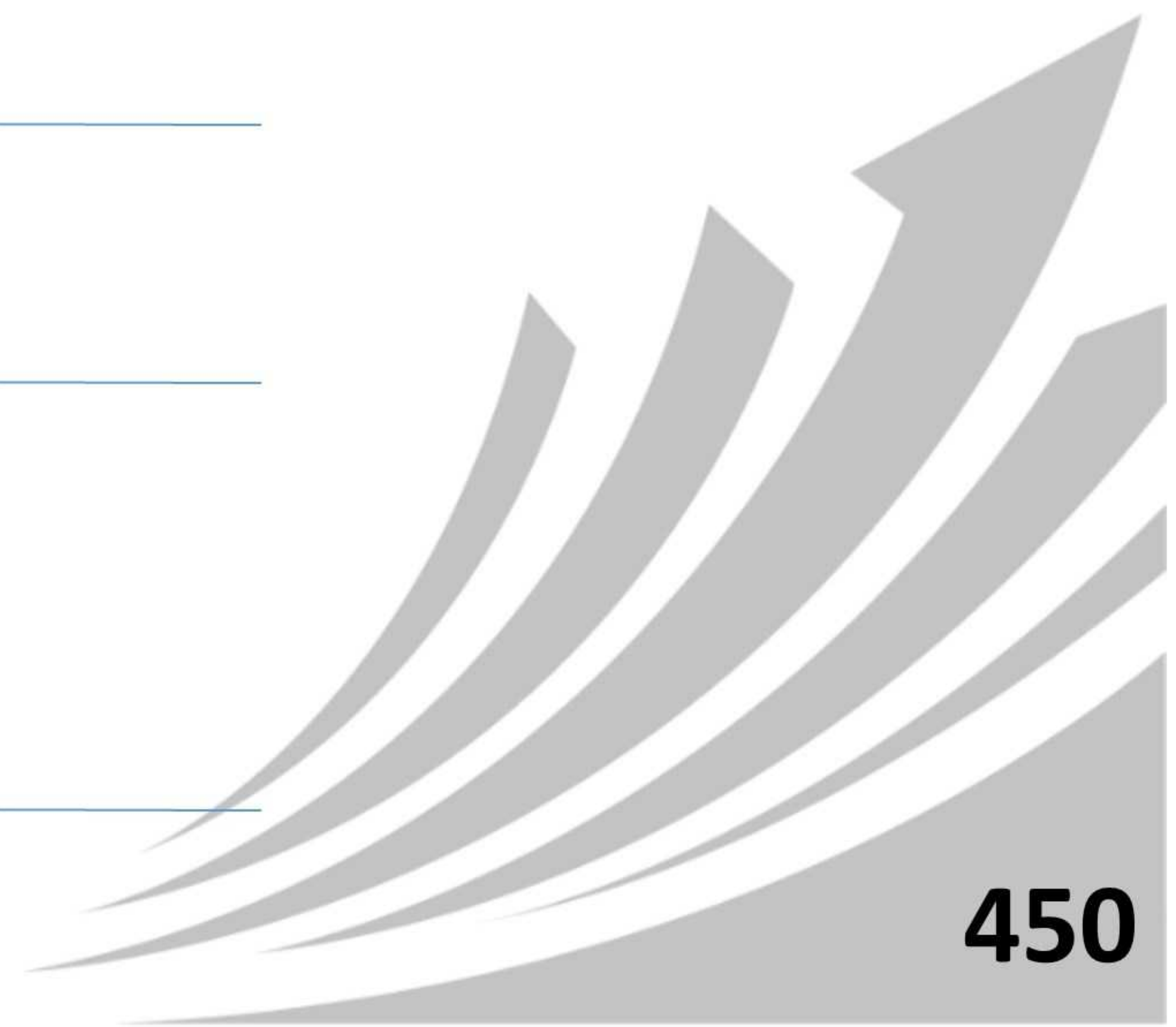
GAAP (short term)
IFRS (short term or low value)

Statements	Finance Lease	Operating Lease
B/S Inception	Leased asset = Leased liability = min(PV of minimum lease payments, fair value)	No effect Leased asset and liability
B/S Periodic	Leased asset: Depreciation over lease term Leased liability: Amortized cost (Beginning lease liability + Interest expense – lease payment = Ending lease liability)	No effect Asset and liability are amortized
I/S Periodic	Recognize interest expense and depreciation expense in income statement	Recognized as rental expense
Cash Flow Periodic	Interest expense: CFO Principle repayment: CFF	CFO

GAAP (operating lease*)

Confused? Don't Worry! Pls Follow with Mr.Chen !!!

	GAAP (short term) IFRS (short term/low value)	GAAP (operating lease*)	IFRS GAAP (finance lease)
T=0, 确认ROU/Liability			
每期对ROU摊销			
每期对Liability摊销			
每期现金支出			
每期I/S确认费用			
每期B/S变化			
每期CF/S变化			



Chen's Example (Paid in Arrear)

- BM Inc. leases a machine for its own use for 3 years with annual payments of \$1000 paid in arrear.
- The appropriate interest rate on the lease is 10%.
- The machine's fair value is equal to the present value of minimum lease payments.
- BM will own the asset after three years
- Assuming BM depreciates all assets on straight-line basis.

The Example is just used for illustration, and we will try three different methods





GAAP (short term)
IFRS (short term or low value)



	0	1	2	3	0	1	2	3
Cash								
RE								

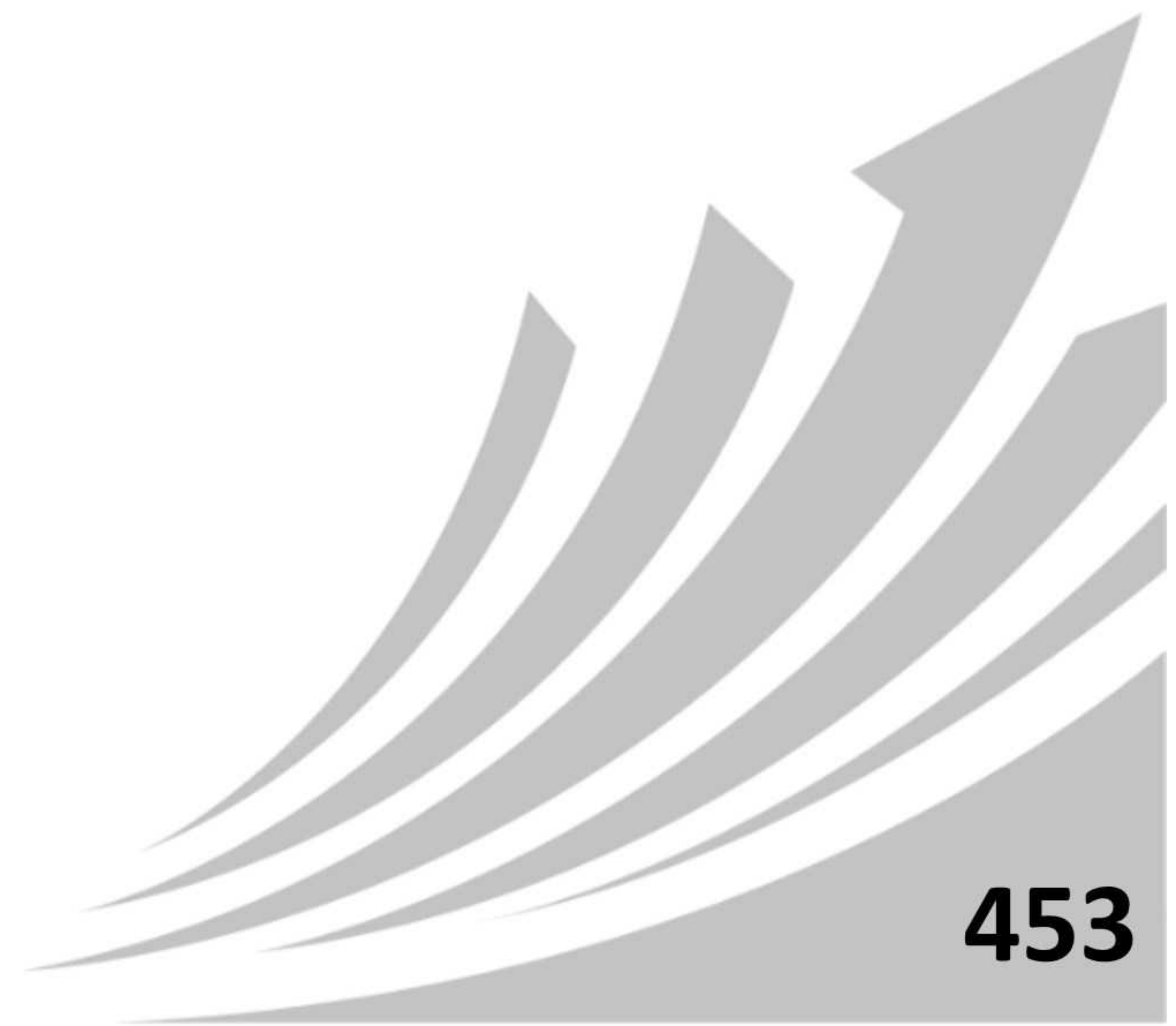


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GAAP (operating lease*)



0	1	2	3	0	1	2	3
Cash							
				Lease Liability			
ROU							
				RE			



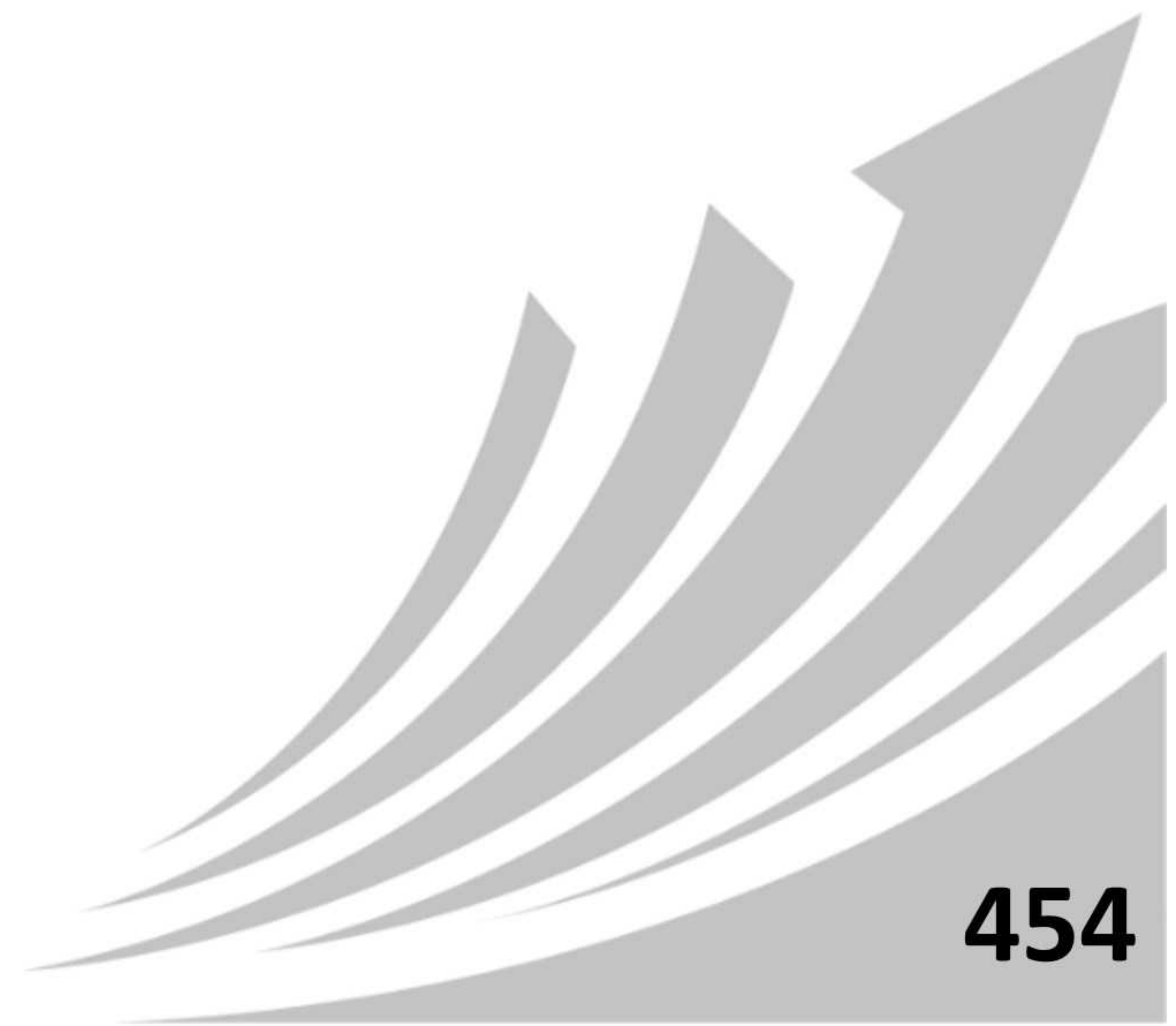


3

IFRS
GAAP (finance lease)



0	1	2	3	0	1	2	3
Cash				Lease Liability			
ROU				RE			



Balance Sheet for Lessee (Paid in Arrear)

	Low/Short OL		GAAP OL*		IFRS GAAP FL	
	ROU	Liability	ROU	Liability	ROU	Liability
Y1 beg	0	0	2487	2487	2487	2487
Y1 end	0	0	1736	1736	1658	1736
Y2 end	0	0	909	909	829	909
Y3 end	0	0	0	0	0	0



Income Statement for Lessee (Paid in Arrear)

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	Lease expense	Lease expense	Depreciation expense	Interest expense	Total expense
Y1beg - Y1end	1000	1000	829	249	1078
Y2beg - Y2end	1000	1000	829	174	1003
Y3beg - Y3end	1000	1000	829	91	920
Total	3000	3000	2487	514	3000*

*Number rounded due to decimal point



Cash Flow Statement for Lessee (Paid in Arrear)

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	CFO	CFO	CFO	CFF	Total CF
Y1 end	1000	1000	249	751	1000
Y2 end	1000	1000	174	826	1000
Y3 end	1000	1000	91	909	1000
Total	3000	3000	Interest	Principal	3000



Chen's Example (Paid Upfront)

- BY Inc. leases a machine for its own use for 3 years with annual payments of \$1000 paid upfront.
- The appropriate interest rate on the lease is 10%.
- The machine's fair value is equal to the present value of minimum lease payments.
- After 3 years, BY will own the machine for no more payments.
- Assuming BY depreciates all assets on straight-line basis.

The Example is just used for illustration, and we will try three different methods





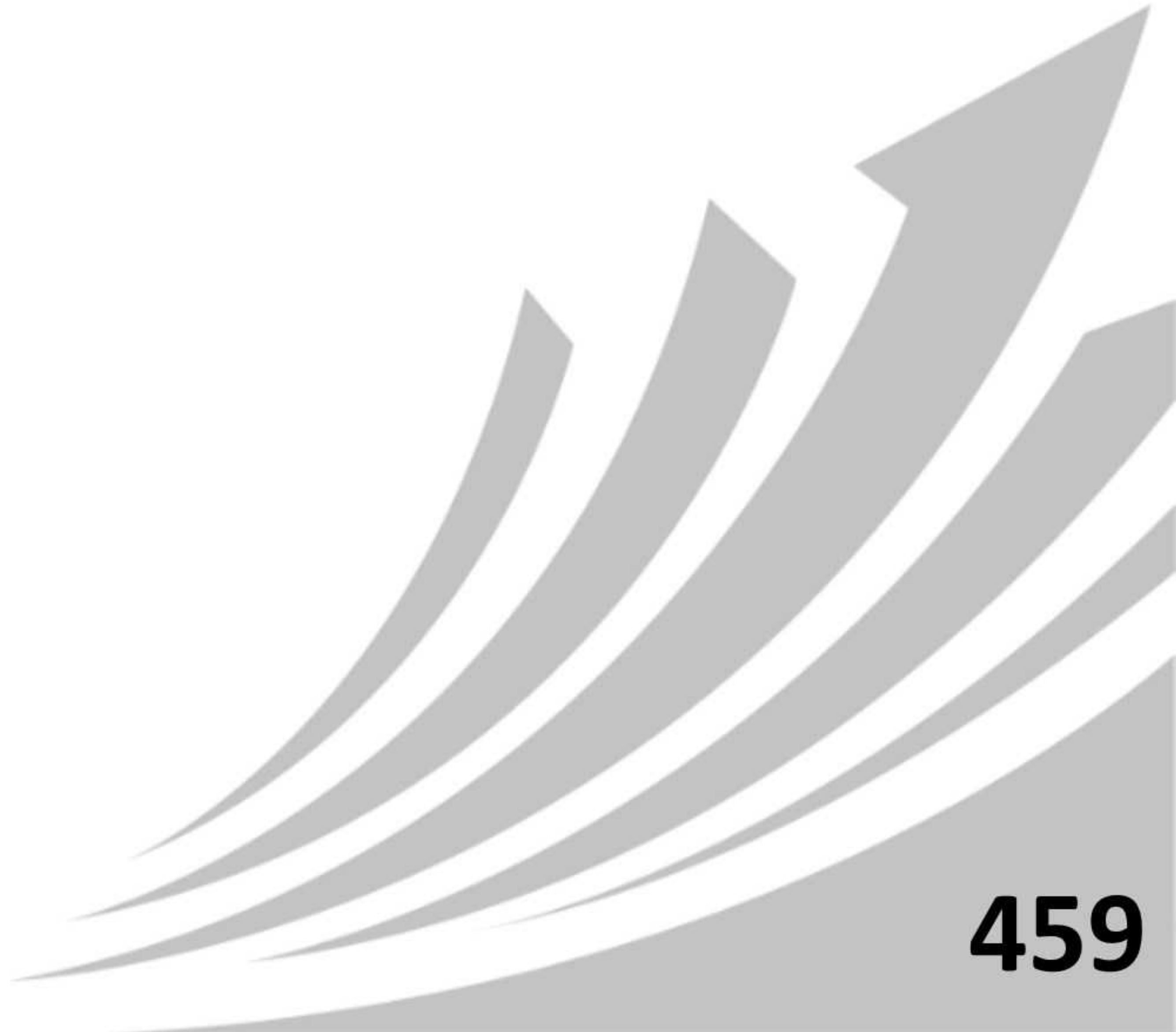
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GAAP (short term)
IFRS (short term or low value)



0123				0123			
Cash							
Prepaid Expense							

RE



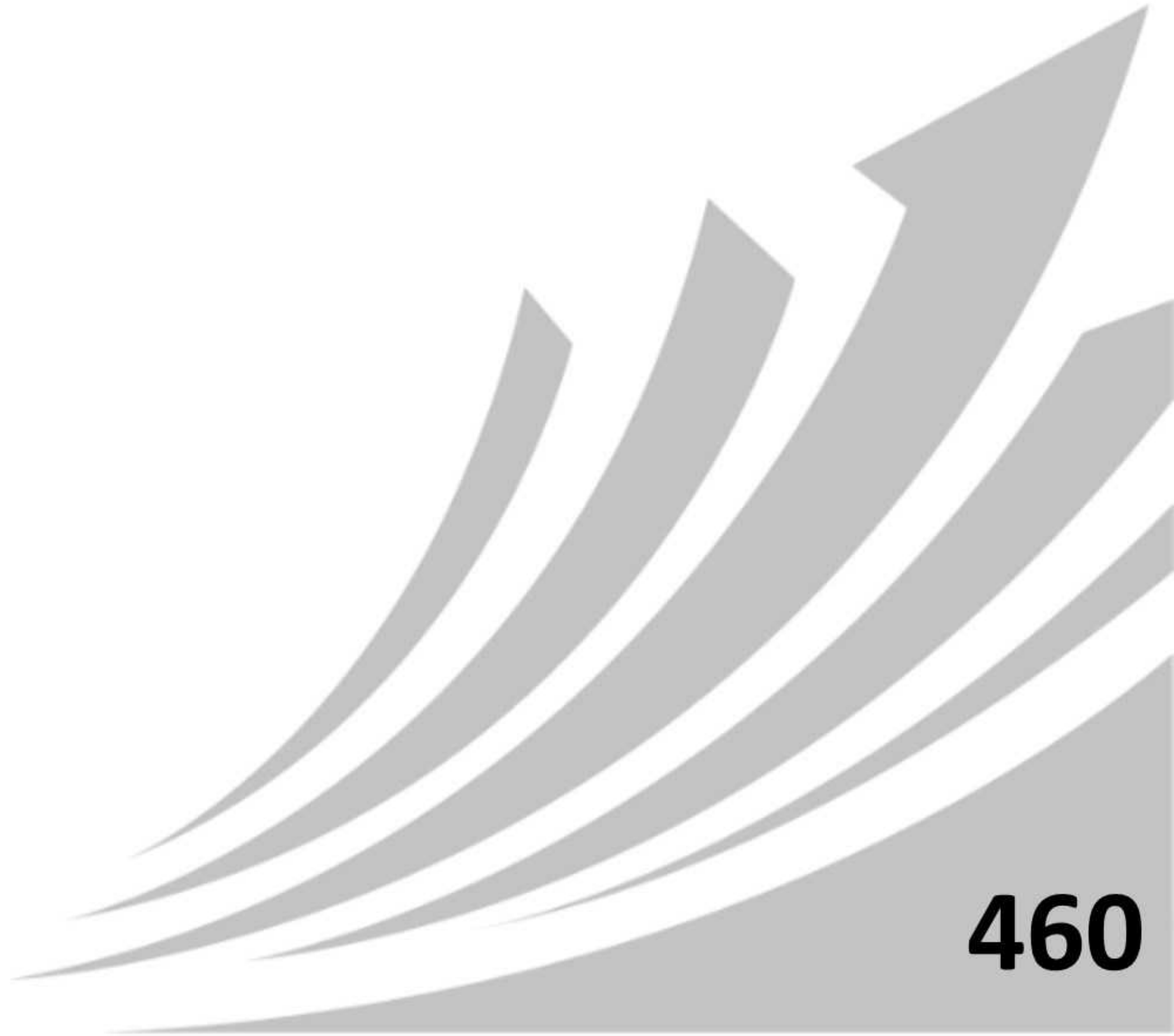


2

GAAP (operating lease*)



0	1	2	3	0	1	2	3
Cash							
				Lease Liability			
ROU							
				RE			



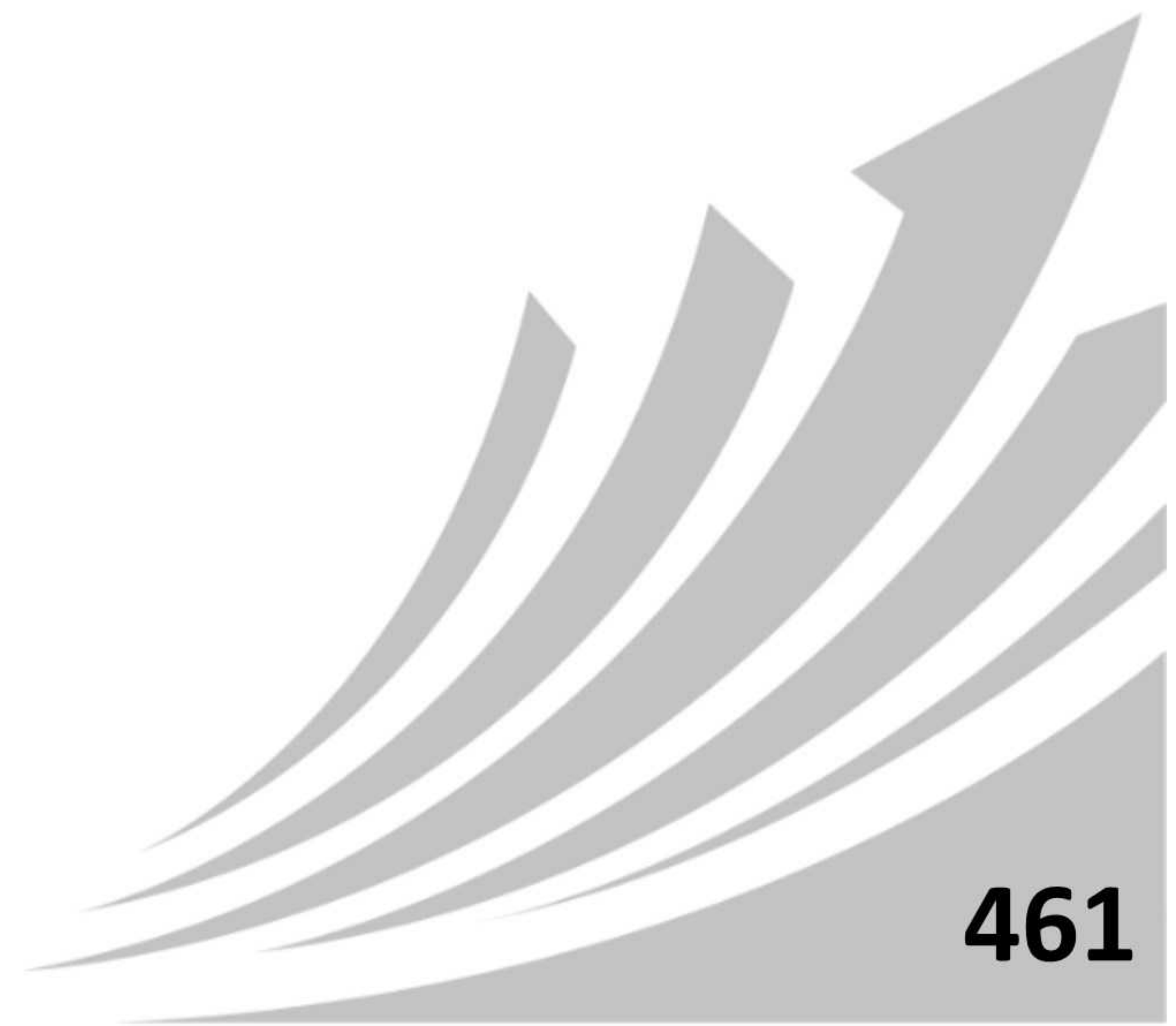


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IFRS
GAAP (finance lease)



0	1	2	3	0	1	2	3
Cash				Lease Liability			
ROU				RE			



Balance Sheet for Lessee (Paid Upfront)

	Low/Short OL		GAAP OL*		IFRS GAAP FL	
	ROU	Liability	ROU	Liability	ROU	Liability
Y1 beg	0	0	2736	1736	2736	1736
Y2 beg	0	0	1910	909	1824	909
Y3 beg	0	0	909	0	912	0
Y3 end	0	0	0	0	0	0



Income Statement for Lessee (Paid Upfront)

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	Lease expense	Lease expense	Depreciation expense	Interest expense	Total expense
Y1beg - Y1end	1000	1000	912	174	1085
Y2beg - Y2end	1000	1000	912	91	1003
Y3beg - Y3end	1000	1000	912	0	912
Total	3000	3000	2736	265	3000*

*Number rounded due to decimal point



Cash Flow Statement for Lessee (Paid Upfront)

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	CFO	CFO	CFO	CFF	Total CF
Y1 beg	1000	1000	0	1000	1000
Y2 beg	1000	1000	174	826	1000
Y3 beg	1000	1000	91	909	1000
Total	3000	3000	Interest	Principal	3000



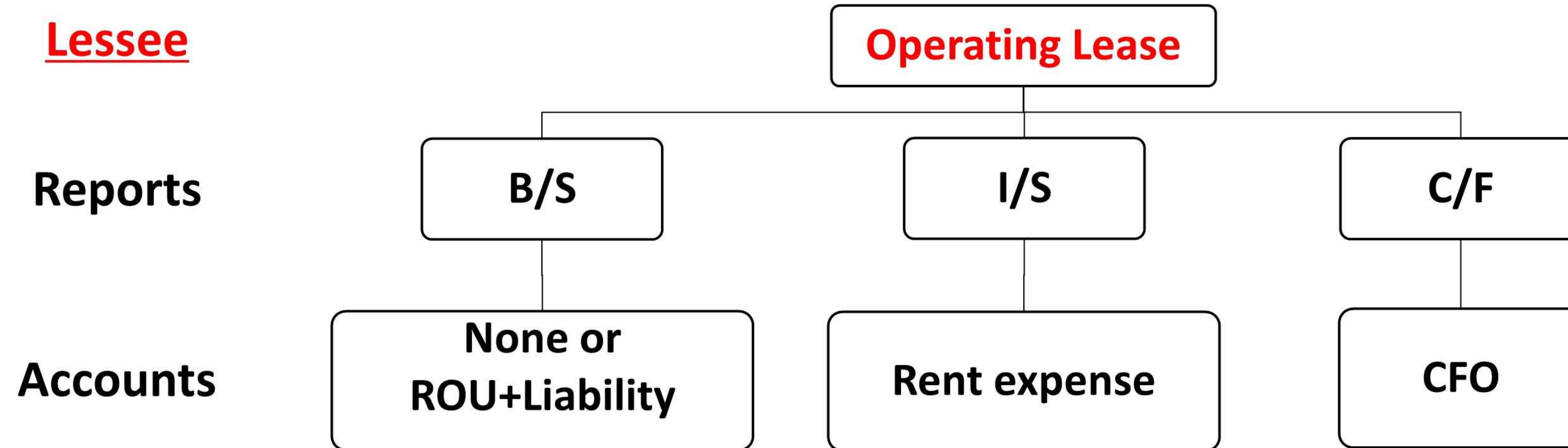
Practice

Golden Investment Inc. leased an asset at the beginning of 2014 for five years and lease payment should be paid on 1st Jan annually. Golden recorded this lease as capital lease. The fair value of leased asset was \$250,000, the same as the present value of minimum lease payments. The company used 12% as discount rate. The cash flow incurred on 1st Jan 2016 is close to?

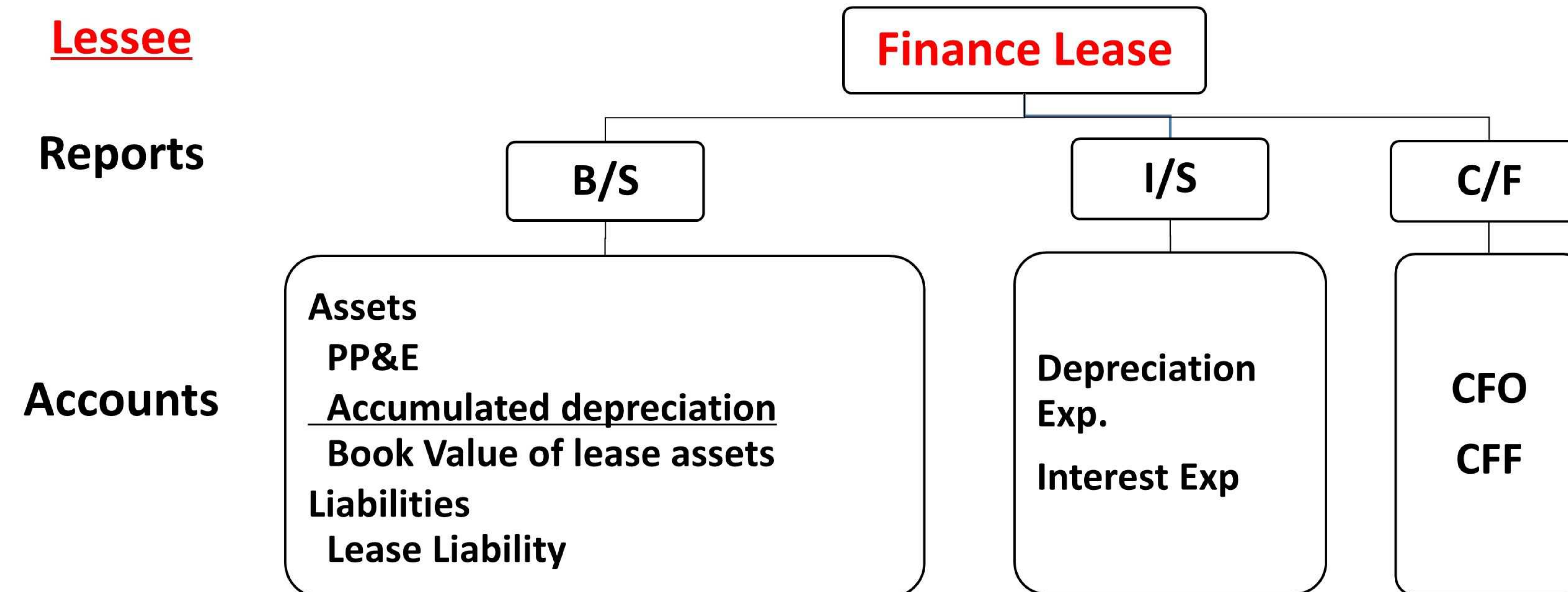
- A. Financing cash outflow of \$61,922.
- B. Operating cash outflow of \$19,988.
- C. Financing cash outflow of \$44,075.

Summary on Lease

Lessee



Lessee



Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Initial recognition, initial measurement, and subsequent measurement of finance leases.
- **Exam tips:**
 - ✓ 以承租人的立场进行会计核算。
 - ✓ 会计算每一年的利息费用以及应付租金余额。

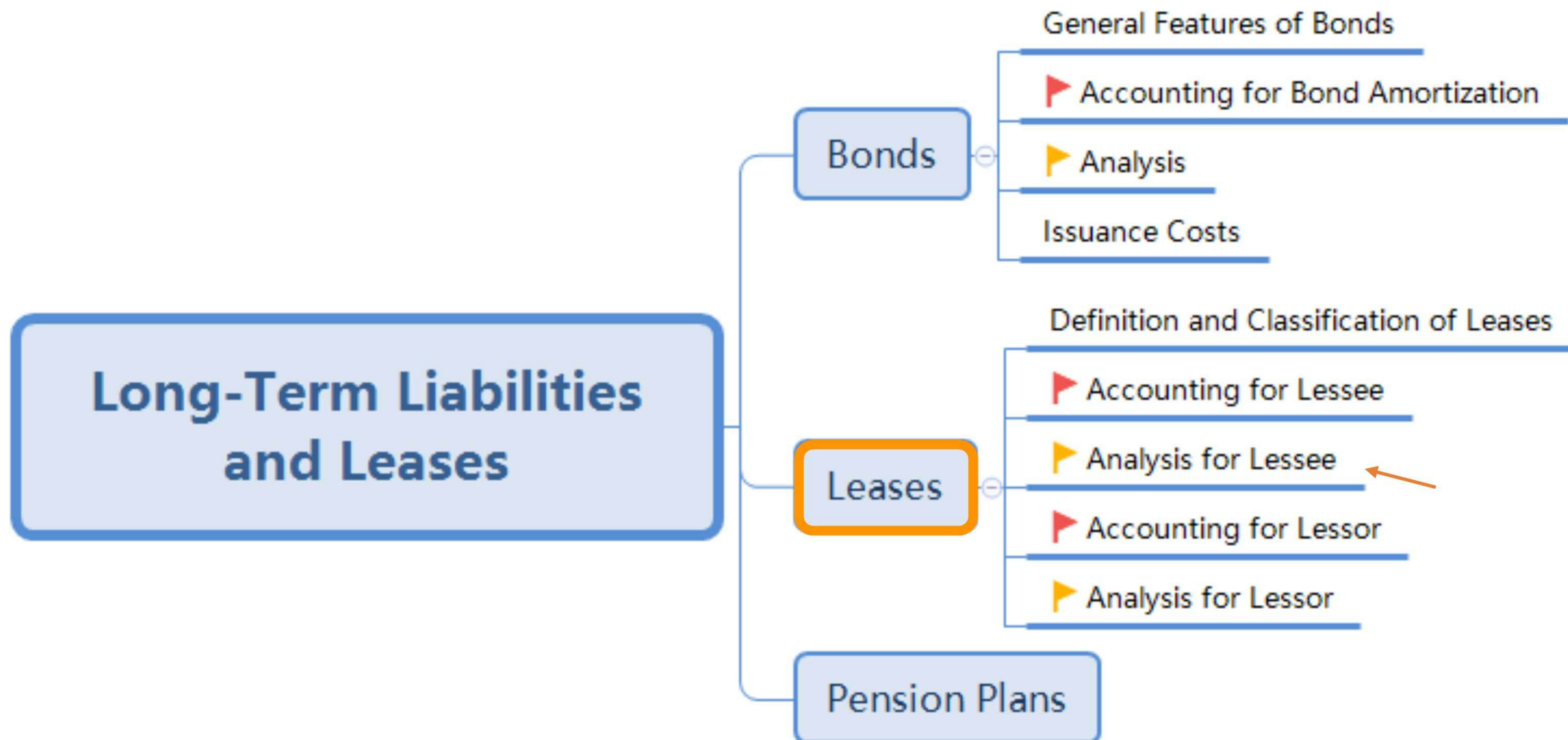
Long-Term Liabilities and Leases

Analysis for Lessee

Tasks:

- **Determine** the features of finance lease and an operating lease from perspectives of lessee.
- **Compare** the financial ratios between finance lease and an operating lease from perspectives of lessee.

Mindmap: Long-Term Liabilities and Leases



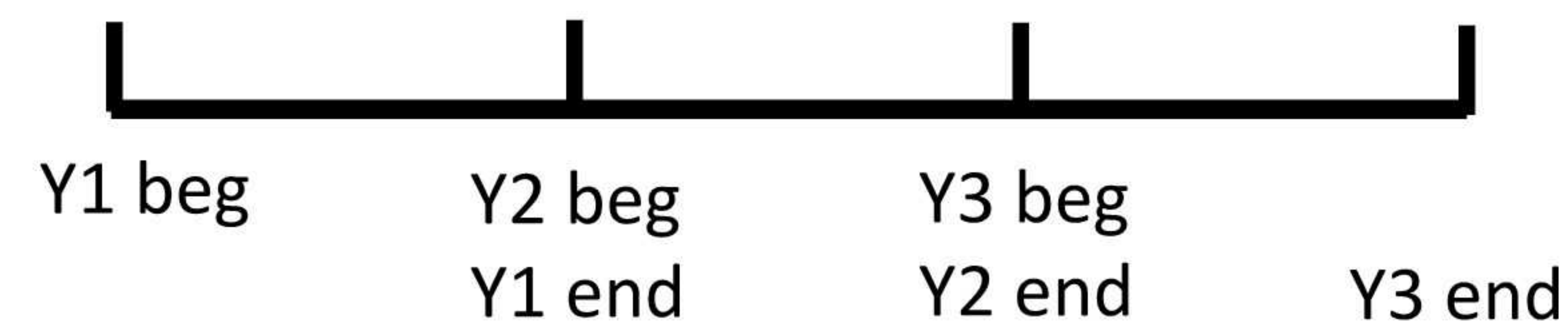
Chen's Tough Questions – 1 (;¬_¬)

- What are the secrets behind BEG mode (paid upfront) and END mode (paid in arrear) for lessee in finance lease?

Interest expense	BEG mode	END mode	Cash Flow	BEG mode		END mode	
				Principal	Interest	Principal	Interest
Y1beg-Y1end	174	249	Y1 beg	1000	0		
Y2beg-Y2end	91	174	Y2 beg / Y1 end	826	174	751	249
Y3beg-Y3end	0	91	Y3 beg / Y2 end	909	91	826	174
			Y3 end			909	91

BEG mode

END mode



Chen's Amazing Questions – 2 (' ◡ ◡)

- Let's focus on the END mode, what are the secrets between finance lease and operating lease for the expense?

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	Lease expense	Lease expense	Depreciation expense	Interest expense	Total expense
Y1beg - Y1end	1000	1000	829	249	1078
Y2beg - Y2end	1000	1000	829	174	1003
Y3beg - Y3end	1000	1000	829	91	920
Total	3000	3000	2487	514	3000*

Chen's Interesting Questions – 3 (^ ∇ ^)

- Let's focus on the END mode, what are the secrets between finance lease and operating lease for the cash flow?

	Low/Short OL	GAAP OL*	IFRS GAAP FL		
	CFO	CFO	CFO	CFF	Total CF
Y1 end	1000	1000	249	751	1000
Y2 end	1000	1000	174	826	1000
Y3 end	1000	1000	91	909	1000
Total	3000	3000	Interest	Principal	3000

Chen's Very Important Comparison – Lessee

Statements	Lessee's Items	Low/Short OL	GAAP OL	IFRS GAAP FL
Balance Sheet	Assets	Lowest	Highest*	Higher*
	Liabilities	Lower	Higher	
	Equities	Higher		Lower
Income Statement	EBIT	Lower		Higher
	Net income in early years	Higher		Lower
	Net income in later years	Lower		Higher
	Total net income	Same		
Cash Flow Statement	CFO	Lower		Higher
	CFF	Higher		Lower
	Total cash flow	Same		

* They are the same on the beginning of Year 1

Balance Sheet for Lessee (Paid in Arrear)

	Low/Short OL		GAAP OL*		IFRS GAAP FL	
	ROU	Liability	ROU	Liability	ROU	Liability
Y1 beg	0	0	2487	2487	2487	2487
Y1 end	0	0	1736	1736	1658	1736
Y2 end	0	0	909	909	829	909
Y3 end	0	0	0	0	0	0

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Initial recognition, initial measurement, and subsequent measurement of finance leases.
- **Exam tips:**
 - ✓ 以承租人的立场理解两种租赁方法对于三张报表的影响。

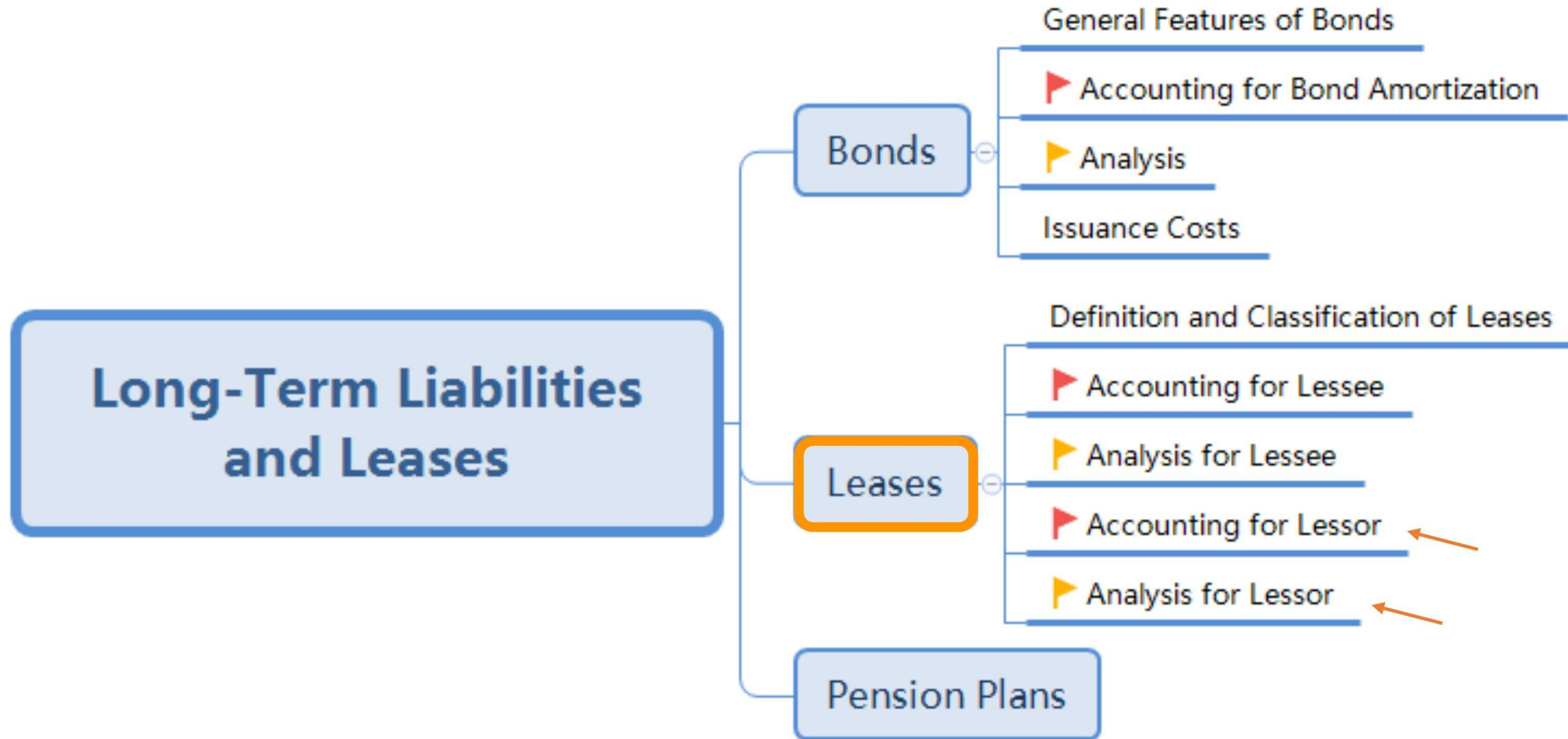
Long-Term Liabilities and Leases

Accounting and Analysis for Lessor

Tasks:

- **Distinguish** between a finance lease and an operating lease from perspectives of lessor.

Mindmap: Long-Term Liabilities and Leases



Chen's Very Important Map

➤ Lessee

- ✓ **IFRS**: same method with **finance lease**
- ✓ **GAAP**: difference between **finance lease** and **operating lease***
- ✓ Exceptions for short-term lease (GAAP, IFRS) and leases where leased asset is low value (IFRS): same method with **operating lease**

➤ Lessor

- ✓ **IFRS**: difference between **finance lease** and **operating lease**
- ✓ **GAAP**: difference between **finance lease** (**sales-type, direct finance**) and **operating lease**

Classification of Lease - Lessor

1. Under U.S. GAAP, **finance lease** will be treated as either **sales-type lease** or **direct financing lease**.
 - ① The lessor's classification uses the same criteria that a lessee uses in determining whether the benefits and risks of owning the leased asset have been transferred to the lessee
 - ✓ If any of these criteria are met, the lessor will categorize the lease as a **sales-type lease**, assuming that collection of the future lease payments is probable

Classification of Lease - Lessor

1. Under U.S. GAAP, **finance lease** will be treated as either **sales-type lease** or **direct financing lease**
- ② A **direct financing lease** applies when a lease doesn't meet the criteria to be considered a sale-type lease but yet results in the lessor relying on future lease receipts to recover the asset's cost
 - ✓ A lease is considered a direct financing lease under US GAAP if the lease contract provides for a third- party guaranteed residual value, which combined with the future lease payments by the lessee will equal or exceed the fair value of the leased asset

Classification of Lease - Lessor

1. Under U.S. GAAP, **finance lease** will be treated as either **sales-type lease** or **direct financing lease**.
 - A financing lease is a type of lease transaction that converts the lessor's risk arising from ownership of the underlying asset (that is, asset risk) into credit risk
2. Under U.S. GAAP, if none of the criteria above is met, the lessor will classify a lease as an **operating lease**
3. Under IFRS, no distinction between sales-type lease and direct financing lease.
 - However, **finance leases** made by manufacturers or dealers are treated similarly as **sales type lease** in US GAAP



Accounting for Lessor – Operating Lease

IFRS operating lease
GAAP operating lease

Inception

B/S

I/S

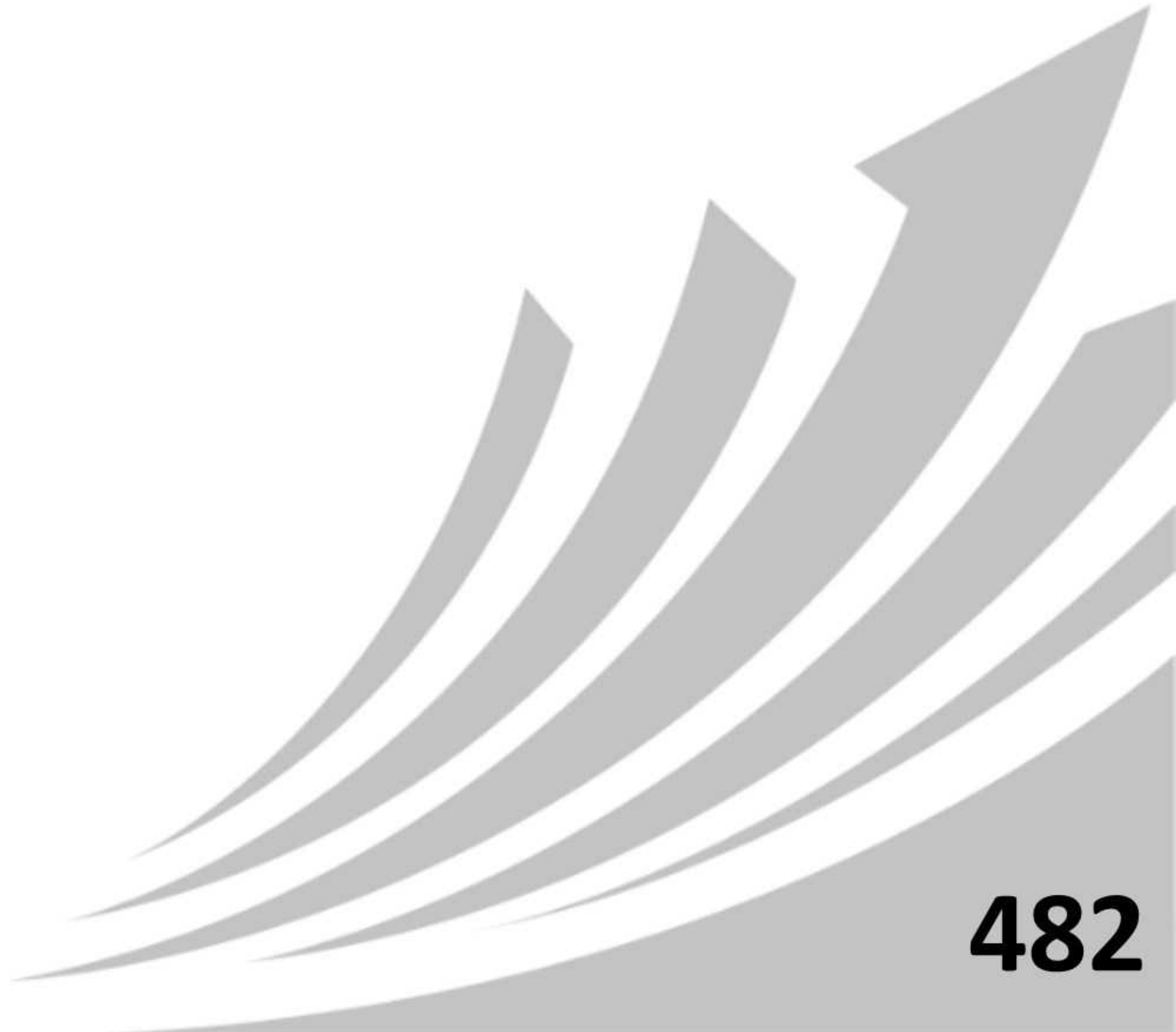
CF/S

Periodic

B/S

I/S

CF/S



Accounting for Lessor – Finance Lease

IFRS finance lease and
GAAP sales-type lease

GAAP direct financing lease

Inception

B/S

I/S

CF/S

B/S

I/S

CF/S

Periodic

B/S

IFRS finance lease

GAAP sales-type and direct financing lease

I/S

CF/S

Chen's Example – Lessor

- BY bought a machine and lease it to BM for three years with an annual lease payment of \$1000 at the beginning of each year.
- The appropriate interest rate on the lease is 10%.
- The carrying value of the machine is \$2736.
- Assuming BY/BM depreciates all assets on straight-line basis.
- Assume the lease is 1) a finance lease (direct-finance); 2) an operating lease for exercise.





Example – Operating Lease for Lessor

0	1	2	3	0	1	2	3
Cash				Unearned Revenue			
PPE				RE			



Example – Finance Lease for Lessor

	0	1	2	3	0	1	2	3
Cash								
PPE								
Investment in Lease					RE			

Chen's Very Important Comparison – Lessor

Statements	Lessee Items	Finance Lease	Operating Lease
Income Statement	EBIT	Lower	Higher
	Net income in early years	Higher	Lower
	Net income in later years	Lower	Higher
	Total net income	Same	
Cash flow Statement	CFO	Lower	Higher
	CFI	Higher	Lower
	Total cash flow	Same	

Practice

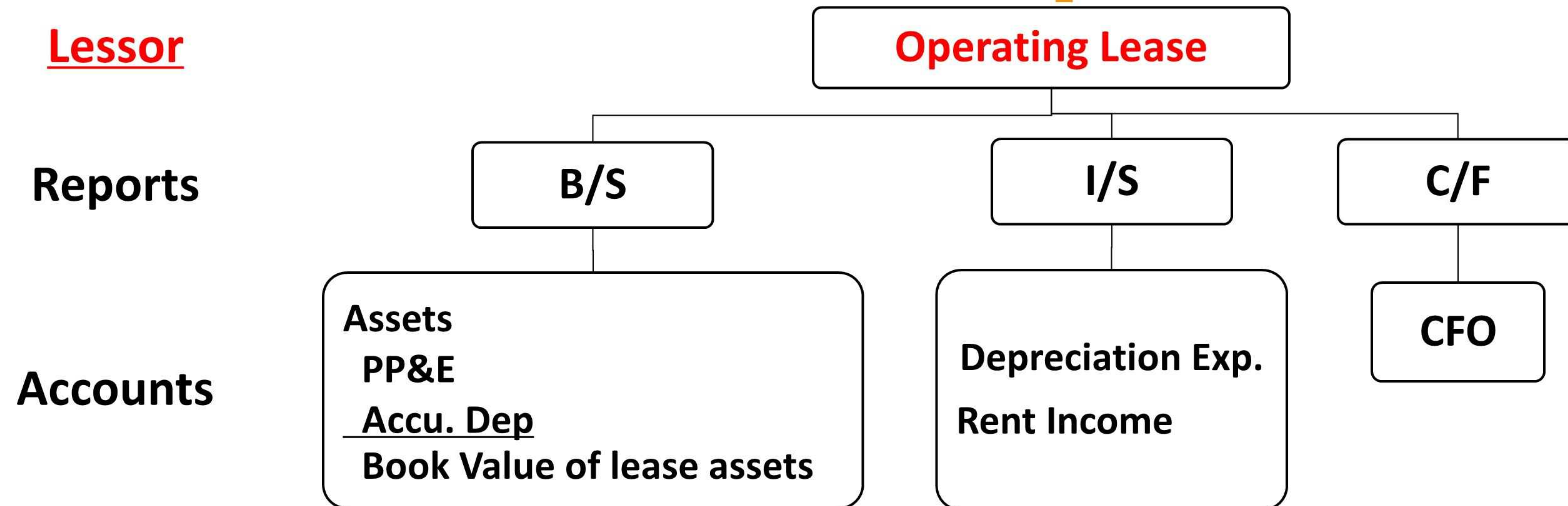
Compared to operating lease, using direct financing lease, which of following is most correct for a lessor?

- A. Pretax margin is lower during early period of lease term.
- B. Higher cash flow from financing activities .
- C. Higher fixed assets turnover ratio.

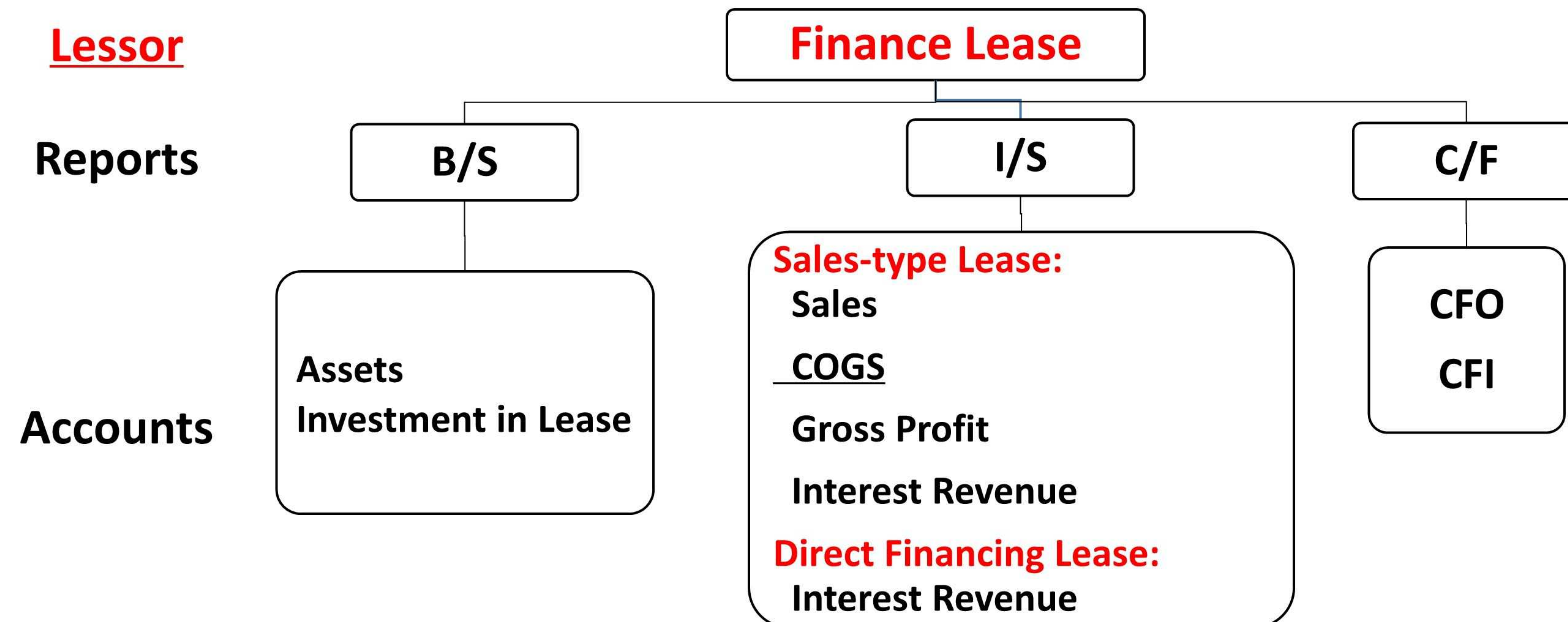
Answer: C

Summary on Lease

Lessor



Lessor



Disclosure of Lease Arrangement

- Lessees and lessors are required to disclose:
 - ✓ General description of leasing arrangements
 - ✓ **Nature, timing, and payments to be paid or received**
 - **In each of the next 5 years**
 - **Aggregated payments beyond 5 years**
 - ✓ Lease revenue and expense for each period presented in the income statement
 - ✓ Amounts receivable and unearned revenues from leases
 - ✓ Restrictions imposed by lease arrangements

Chen's Questions for Summary

- In one lease contract:
- ✓ Will both side (lessee and lessor) not recognize the desperation expense of the asset?
 - ✓ Will both side (lessee and lessor) recognize the desperation expense of the asset?
 - IFRS ?
 - GAAP ?

Chen's Important Summary

I/S	Operating Lease	Finance Lease
Lessee		
Lessor		

CF/S	Operating Lease	Finance Lease
Lessee		
Lessor		

Summary

- **Importance:** ☆☆☆
- **Content:**
 - ✓ Finance lease and an operating lease from perspectives of lessor.
- **Exam tips:**
 - ✓ 以出租人的立场理解两种租赁方法对于三张表的影响。

Brief Introduction of Pension Plans

Tasks:

- **Compare** the presentation and disclosure of defined contribution and defined benefit pension plans.

Mindmap: Long-Term Liabilities and Leases

Long-Term Liabilities and Leases

Bonds

General Features of Bonds

▶ Accounting for Bond Amortization

▶ Analysis

Issuance Costs

Leases

Definition and Classification of Leases

▶ Accounting for Lessee

▶ Analysis for Lessee

▶ Accounting for Lessor

▶ Analysis for Lessor

Pension Plans

Pension Plan - Introduction

Defined Contribution Plans

➤ Employer

- ✓ Keeps all contributions current.
- ✓ Only financial liability is making contributions to employee's account.
- ✓ The plan must offer sufficient investment vehicles.

➤ Employee

- ✓ Own the plan and can transport account to other employment situations.
- ✓ Bear all risk/return consequences of investment.
- ✓ Must make all investment decisions given available investment vehicles.

Pension Plan - Introduction

Defined Benefit Plans

➤ Employer

- ✓ Liability of employer
- ✓ Determined by stated criteria usually related to years of service and salary.
- ✓ Sponsor (employer) is responsible for managing the plan asset.

➤ Employee

- ✓ Receive periodic payments starting at retirement.
- ✓ Not bear risk/return consequences of investment.

Brief Introduction of the DB Accounting

Overfunded	Underfunded
<p>Fair Value of Plan assets</p> <p><u>– PBO (projected benefit obligation)</u></p> <p>Fund Status > 0</p> <p>=> Net Plan Assets</p>	<p>Fair Value of Plan assets</p> <p><u>– PBO (projected benefit obligation)</u></p> <p>Fund Status < 0</p> <p>=> Net Plan Liability</p>

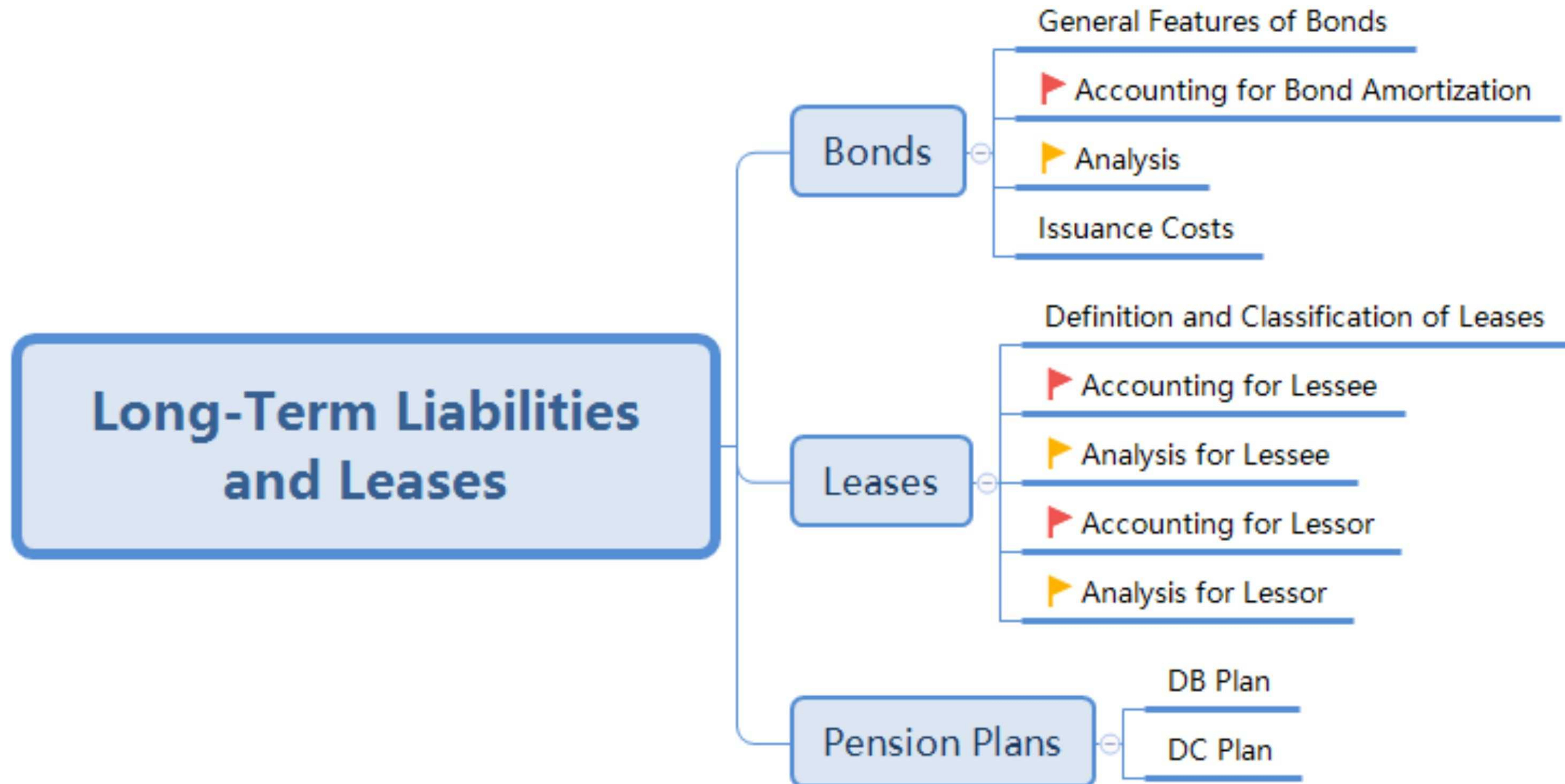
Brief Introduction of the DB Accounting

	IFRS	GAAP
I/S	Current service costs	Current service costs
	past service costs	Interest expense
	Net interest expense or income	Expected return on plan assets
OCI	Actuarial gains and losses	Actuarial gains and losses
	Actual return on plan assets	Past service costs

Summary

- **Importance:** ☆
- **Content:**
 - ✓ Difference between DC and DB plan.
 - ✓ Brief introduction of the accounting treatment.
- **Exam tips:**
 - ✓ 辨析DC和DB两种养老金计划，了解选择不同计划对于财务报表的影响。

Summary for the Whole Reading





Financial Reporting Quality

Tasks:

- **Describe** quality of earnings, cash flow, and balance sheet items.
- **Distinguish** between conservative and aggressive accounting.
- **Describe** accounting methods that could be used to manage earnings, cash flow, and balance sheet items.

Financial Reporting Quality and Earnings Quality

Financial reporting quality

- High quality reporting
 - ✓ Provides **decision-useful** information:
relevance and **faithful representation**

Earnings Quality

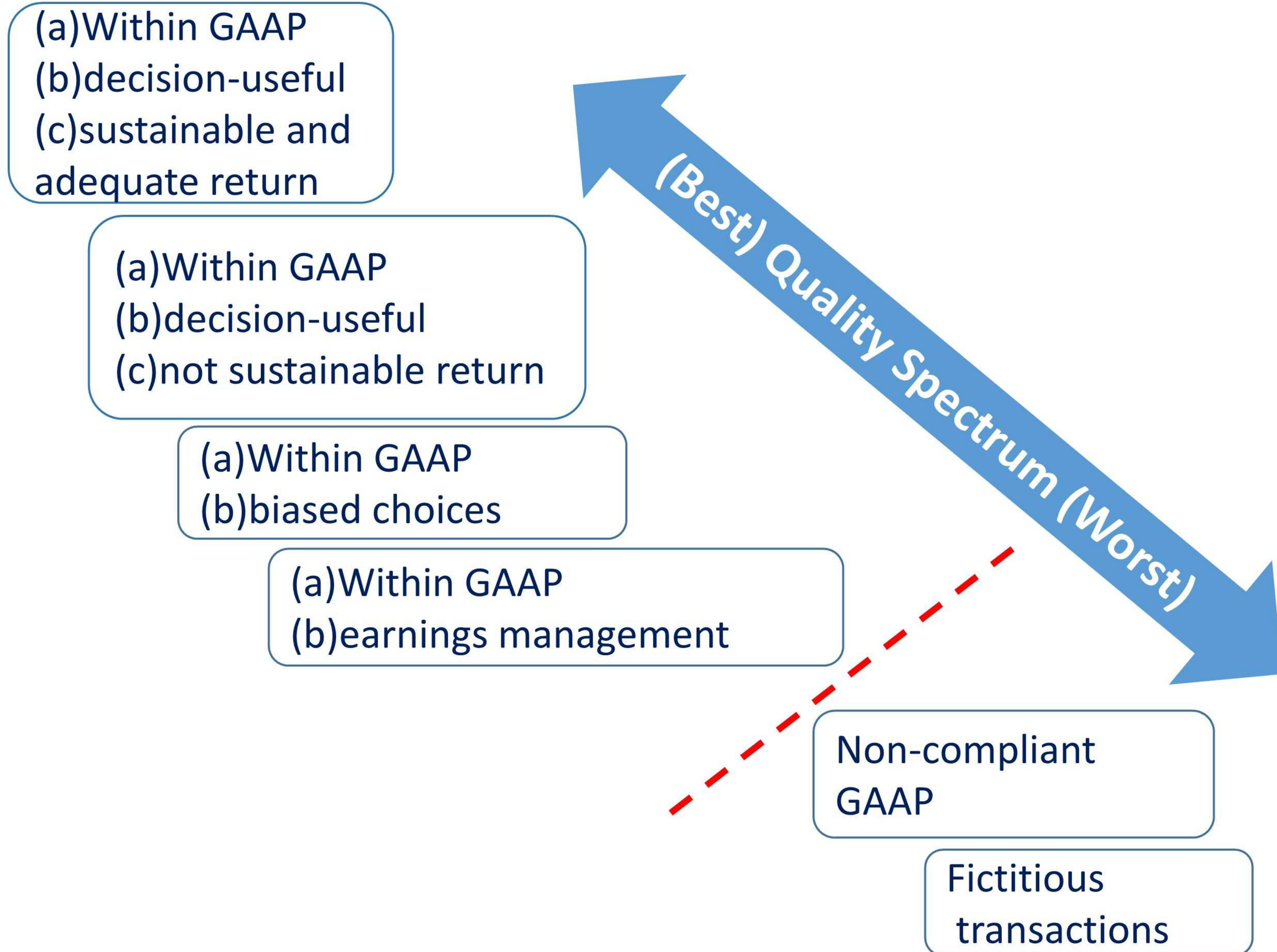
- High quality earnings
 - ✓ Provides **sustainable and adequate** return

Financial Reporting Quality and Earnings Quality

- Financial reporting quality and earnings quality are **separated** but **interrelated** with each other.

		Financial Reporting Quality	
		Low	High
Earnings Quality	High	LOW financial reporting quality impedes assessment of earnings quality.	<p>HIGH financial reporting quality makes assessment meaningful.</p> <p>HIGH earnings quality raises value of the company.</p>
	Low		<p>HIGH financial reporting quality makes assessment meaningful.</p> <p>LOW earnings quality reduces value of the company.</p>

Quality Spectrum



Conservative vs. Aggressive

Aggressive Accounting

- 提前确认收入 / 延后确认费用
- 增加当期利润，但当期的高利润不具有持续性

Conservative Accounting

- 延后确认收入 / 提前确认费用
- 减少当期利润，使得未来利润有所增长
- 依旧是有偏的

Capitalize	vs	expense
Longer useful life of fixed assets	vs	shorter useful life
Higher estimates of salvage values	vs	lower estimates
Smaller valuation allowance on DTA	vs	larger valuation allowance

Specific Context	Typical situations in issuing low quality reports
Motivation	Meet market expectations
	Career and compensation concerns
	Avoid debt covenant violations
Opportunity	Internal opportunity: e.g. poor internal control
	External opportunity: e.g. divergent accounting policies
Rationalization	Justify himself (herself)

Discipline Mechanisms

Mechanism	Explanation
Internal discipline	Markets
External discipline	Market regulatory authorities
	Auditors
	Private contracting

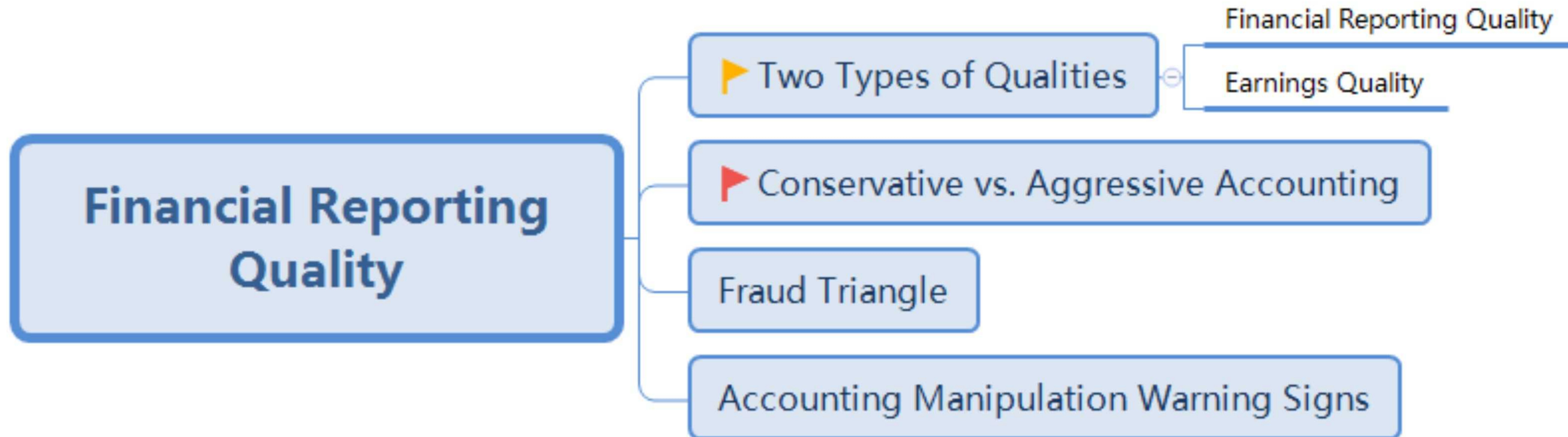
Accounting Manipulation Warning Signs

Items	Warning signs	Detecting method
Revenue	Revenue recognition	Accounting choices/barter transaction/rebate concerns
	Relationships	Revenue growth with industry growth/revenue with AR
Inventory	Relationships	Inventory growth with benchmarks/turnover ratio
Capitalizing	Capitalizing or expensing	Capitalizing policies/interest costs
Cash flow	Relationships	Relationship between operating cash flow and net income
Others	Estimates	e.g. useful life/residual value
	Related party	Rationalization of transactions
	Special item	e.g. Non-recurring items

Summary

- **Importance:** ☆
- **Content:**
 - ✓ Quality of earnings, cash flow, and balance sheet items.
 - ✓ Conservative and aggressive accounting.
 - ✓ Accounting warning signs and methods for detecting manipulation
- **Exam tips:**
 - ✓ 了解如何评估利润的质量（结合利润表和现金流量表）。
 - ✓ 辨析激进和保守的会计处理方式。

Summary for the Whole Reading



Financial Statements Analysis: Applications

Financial Statements Analysis -- Applications

Tasks:

- **Forecast** a company's future net income and cash flow.
- **Describe** the role of financial statement analysis in assessing the credit quality of a potential debt investment.
- **Explain** appropriate analyst adjustments to a company's financial statements to facilitate comparison with another company.

Evaluating Past Financial Performance

- How have key ratios changed and why?
- How do key ratios and trends compare with competitors / industry?
- What aspects of performance are critical for a competitive advantage?
- How did the company perform in these areas?
- What is the company's business model and strategy – are they reflected in key measures?

Forecast Net Income and Cash Flow

Example

- Sales expected to be \$100 million in year 1 and increase 5% per year.
- COGS = 20% of sales
- SG&A = 40% of sales
- Interest expense = 10% of sales
- Tax rate = 30%
- No dividends

How to predict net income next year?

Pro-Forma Financial Statement

Items	Year 1	Year 2
Sales	100	105
- COGS	20	21
- SG&A	40	42
- Interest exp.	10	10.5
Earning before tax	30	31.5
- Tax exp.	9	9.45
Net income	21	22.05

Assessing Credit Risk - 4 C's

- Capacity
- Collateral
- Covenants
- Character

Assessing Credit Risk - Credit Scoring

- Credit rating agencies employ formulas that are weighted averages of several specific accounting ratios and business characteristics
- 1. **Scale and diversification:** Size, product diversification, geographical diversification
- 2. **Operational efficiency:** Such items as operating ROA, operating margins, and EBITDA margins fall into this category, along with degree of vertical integration
- 3. **Margin stability:** Stability of profitability margins indicates a higher probability of repayment
- 4. **Leverage:** Coverage ratios of operating earnings, EBITDA, or some measure of free cash flow to interest expense or total debt

Equity Investments Analysis

Item	Illustration
Analysis methods	Top-down analysis Bottom-up analysis
Investor types	Growth investors : high earnings growth Value investors : relatively low share price Market-oriented investors : intermediate

Analyst Adjustment

Considering aspects	Illustration
Materiality	Adjustment will affect conclusions
Standards bodies	Different requirements between different bodies
Accounting methods	Difference between different accounting methods
Accounting estimates	Difference between different accounting estimates

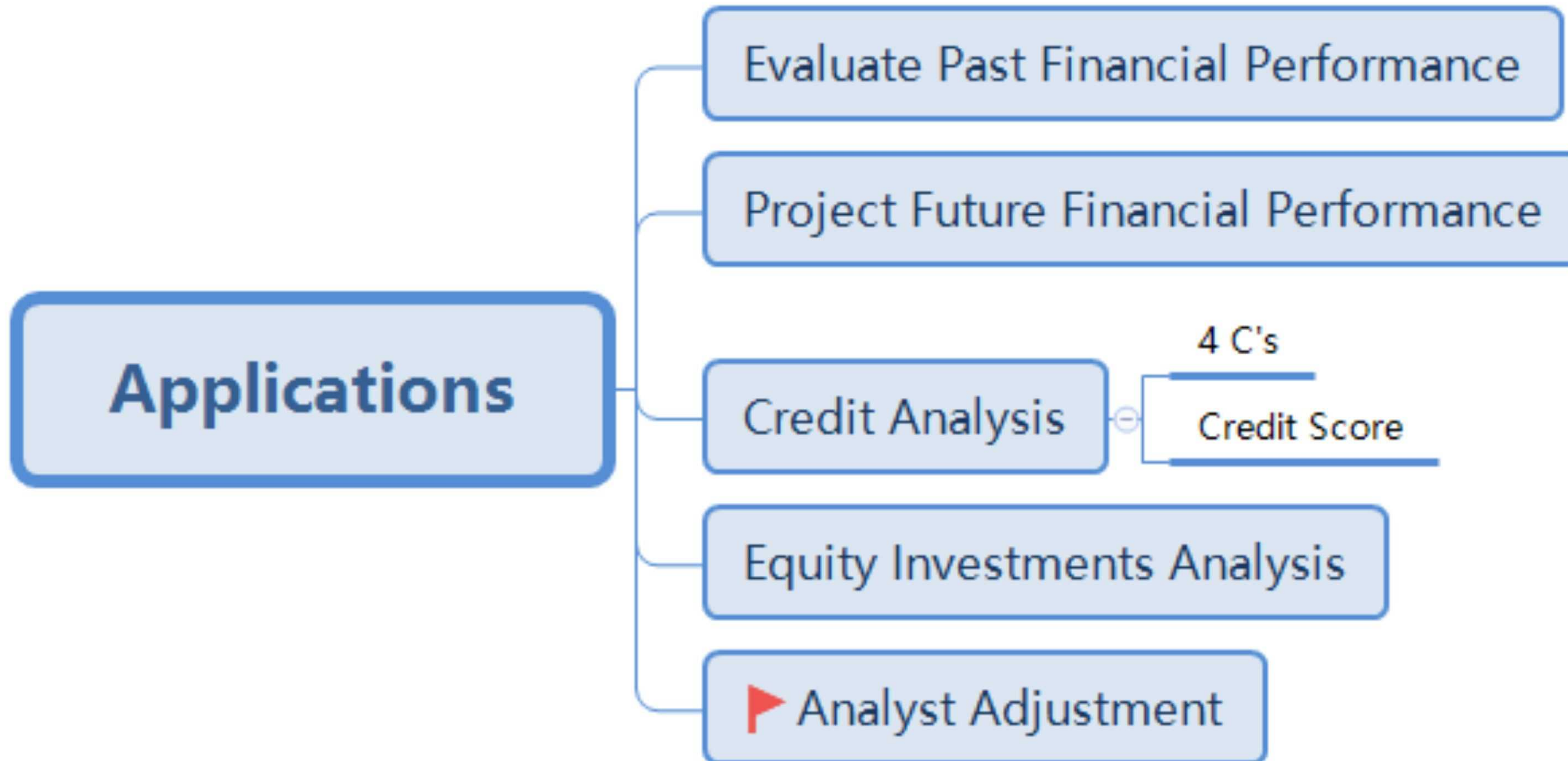
Analyst Adjustment

Items	Adjustment points
Investment	Different types of investments will affect income in different financial statements
Inventory	LIFO/FIFO/Weighted average cost will result in different value of ending inventory and COGS
Fixed asset	Accounting policies : depreciation methods Accounting estimates : residual value and useful life
Off-balance-sheet Financing	Typical example : operating lease

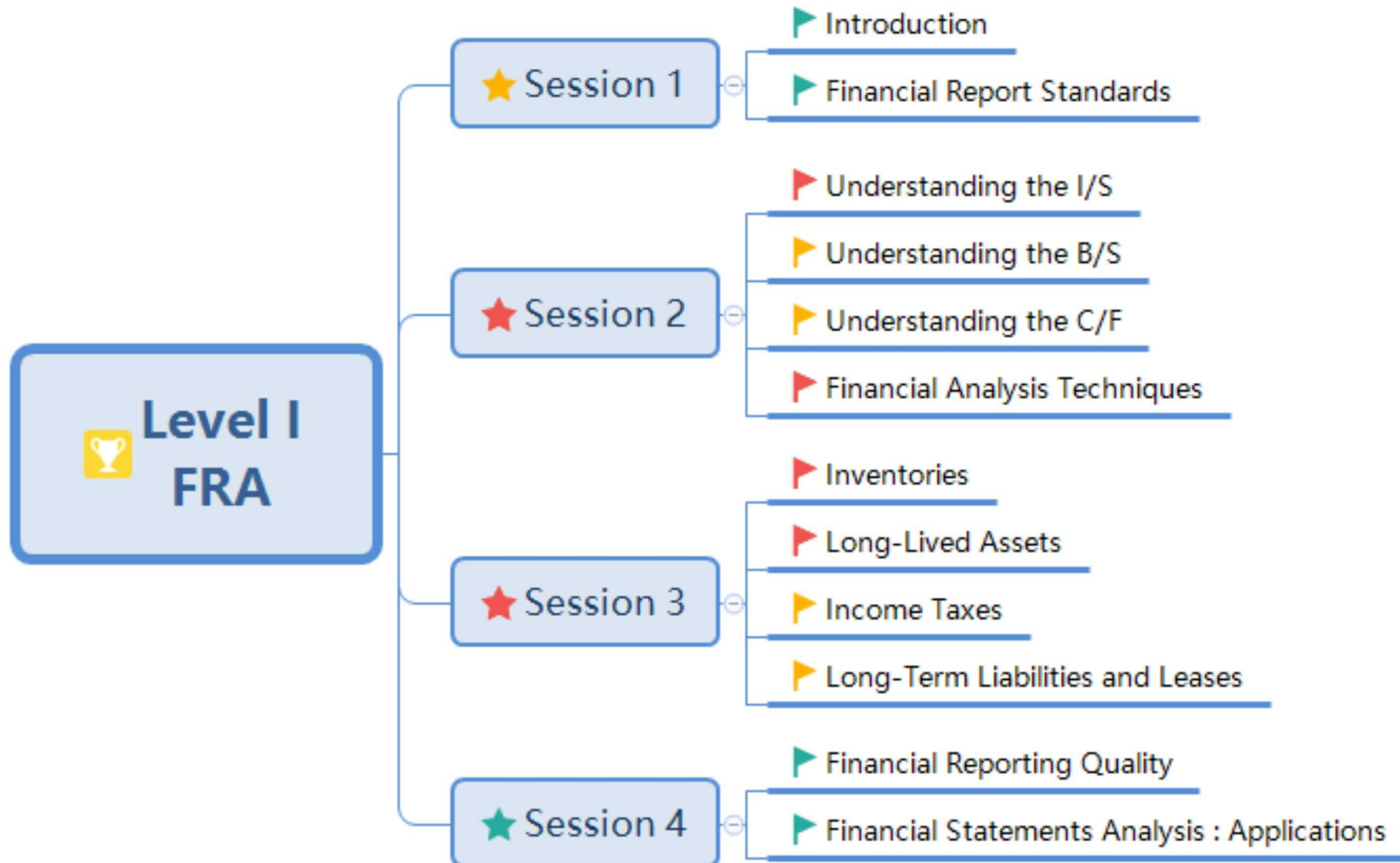
Summary

- **Importance:** ☆
- **Content:**
 - ✓ Pro-forma financial statement.
 - ✓ The role of financial statement analysis in assessing the credit quality.
 - ✓ Appropriate analyst adjustments.
- **Exam tips:**
 - ✓ 定性了解预测报表的编制过程。
 - ✓ 了解几类常见的分析师针对财务数据的调整。

Summary for the Whole Reading



Finally, The Day Comes ! Thank You for Be with Me ~



金榜题名日，有缘再见时！

我是Mr. Chen



You're a Champion!

Thanks for staying with us. You have finished this chapter.