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2015CFA一级知识框架图



Reading 22

Financial Statement Analysis: An Introduction

两套会计体系



FASB → US.GAAP

IASB → IFRS



作用

make economic decisions

最常见报表

了解概念，后面章节详细展开

Financial position

Financial performance

Change in financial position

The balance sheet

The income statement

The cash flow statement

Assets = liabilities + owner's equity

- Revenue
- Expenses
- Net income

- Operating cash flows
- Investing cash flows
- Financing cash flows

补充

statement of comprehensive income

了解概念

reports all changes in equity except for shareholder transactions

IFRS

- income statement 可与OCI合并为single statement of comprehensive income
- 也可分开

US.GAAP

- 与IFRS相似
- OCI可记在股东权益下

Other relevant information

了解提供的信息有哪些

Financial statement notes (Footnotes) ★	<ul style="list-style-type: none"> • Providing information about accounting methods, assumptions, and estimates • Providing additional information about business acquisitions or disposal, legal actions, employee benefit plans, significant customers, sales to related parties, and segments of the firm • Are audited
Supplementary schedules	<ul style="list-style-type: none"> • Operating income or sales by region or business segment • Reserves for an oil and gas company • Information about hedging activities and financial instruments
Management's Discussion and Analysis (MD&A) ★	<p>Providing an assessment of the financial performance and condition of a company from the perspective of its management</p> <ul style="list-style-type: none"> • Results from operations, with a discussion of trends in sales and expense • Capital resource and liquidity, with a discussion of trends in cash flow • A general business overview based on known trends • Material events and uncertainties that may affect the future
Quarterly or semiannual reports	<ul style="list-style-type: none"> • The most updated information on the major financial statements and footnotes

Securities and Exchange Commission (SEC) filings	<ul style="list-style-type: none">•Form 8-K<ul style="list-style-type: none">•Acquisitions or disposals of major assets•Changes in its management•Changes in corporate governance•Form 10-K<ul style="list-style-type: none">•Annual financial statements•Form 10-Q<ul style="list-style-type: none">•Quarterly financial statements
Proxy statements	<ul style="list-style-type: none">•Issued to shareholders when there are matters that require a shareholder vote•Providing information about the board members, managements, compensation and the issuance of stock options.
Corporate reports and press releases	<ul style="list-style-type: none">•Public relations
Other necessary information	<ul style="list-style-type: none">•Information on economic conditions, industry and competitors.

如何保证报表真实

外部因素→Audit

知道审计结果含义

审计结果★	内容
Unqualified (clean) opinion	free from material errors, fraud, or illegal acts
Qualified opinion	if statements make any exceptions to the accounting principles, can issue qualified opinion and explain the exceptions
Adverse opinion	if not presented fairly or not materially conforming with accounting standards.
Disclaimer of opinion	If the auditor is unable to express an opinion (e.g., in the case of a scope limitation), a <i>disclaimer of opinion</i> is issued.

内部因素→Internal control system

Reading 23

Financial Reporting Mechanics

报表中主要会计科目

知道含义★

B/S

I/S

Asset

- Cash & equivalents
- Accounts receivable
- Inventory
- Financial assets
- Prepaid expenses
- PP&E
- Investment in affiliates
- Deferred tax assets
- Intangible assets

Liabilities

- Accounts payable
- Financial liabilities
- Unearned revenue
- Income taxes payable
- Long-term debt
- Deferred tax liabilities

Owners' equity

- Capital
- Additional paid-in capital
- Retained earnings
- OCI

Revenue

- Sales
- Gains
- Investment income

Expenses

- COGS
- SG&A
- Depreciation
- amortization
- Tax expense
- Interest expense
- Losses

↓ 会计等式→永远成立原因→Double-entry accounting

assets = liabilities + owners' equity

Owners' Equity = Contributed Capital + Retained earnings

Ending retained earnings = Beginning retained earnings + Net income – Dividend

Net income = Revenue – Expense

↓
Accrual accounting

掌握分类★★★

Cash received in advance	Unearned revenue
Cash paid in advance	Prepaid expense
Cash received in arrears	Accrued revenue
Cash paid in arrears	Accrued expense

↓ 会计科目影响★★★

		Assets	Liabilities	Revenue	Expense	Equity
Unearned revenue	<ul style="list-style-type: none"> •No revenue recognized •A liability 	↑	↑			
Accrued revenue	<ul style="list-style-type: none"> •Revenue recognition •An asset 	↑		↑		↑
Prepaid expenses	<ul style="list-style-type: none"> •No expense recognized •An asset 	Cash↓ Prepaid exp↑				
Accrued expenses	<ul style="list-style-type: none"> •Expenses recognition •A liability 		↑		↑	↓

↓
Valuation adjustments

Asset计量



通常historical costs

有时current market values → 价格变动计入OCI (Equity项下)

Reading 24

Financial Reporting Standards

监管

Standard-setting bodies

FASB → US.GAAP

IASB → IFRS

Regularly authorities

SEC → US → 知道10K, 10Q, 8K

FSA → UK



IASB conceptual framework

Reporting Elements

Qualitative Characteristics

Objective

四个特征



- Relevance
- Faithful representation

- Comparability
- Verifiability
- Timeliness
- Understandability

- Performance
 - Income
 - expenses
 - Capital maintenance adjustments
 - Past cash flows
- Financial Position
 - Assets
 - Liabilities
 - Equity

Constraint

- Cost (cost/benefit considerations)

Underlying assumption

- Accrual basis
- Going concern

IASB general requirements

General Features

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

Structure and Content

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



Required Financial Statements

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

Coherent financial reporting framework



IASB 与 FASB 区别★★

IASB	FASB
lists income and expenses as elements related to performance	includes revenues, expenses, gains, losses, and comprehensive income
defines it as a resource from which a future economic benefit is expected to flow	defines an asset as a future economic benefit
allow the upward valuation	does not allow the upward valuation of most assets

Reading 25

Understanding the I/S

I/S结构★

Operating components

Net revenues from Sales of goods and services

– Cost of goods sold/Cost of service provided

Gross profit

– Other operating Expenses (SG&A)

Operating income from continuing operations

+ Other Income and Revenues

Non-operating components

Recurring income before interest and taxes from continuing operations

– Financing Costs

The best indicator of future earnings

Recurring (pretax) income from continuing operations

+/- Unusual or Infrequent Items

Pretax income from Continuing Operations

– Income Tax Expense

The line

Net Income from Continuing Operations

Below the line

+/- Income from Discontinued Operations (net of tax)

+/- Extraordinary Items (net of tax)

Net Income

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

1. Revenue ★

定义



- Revenues are the amounts reported from the sale of goods and services in the normal course of business.
- Revenue less adjustments for estimated **returns** and **allowances** is known as **net revenue**.

Revenue确认 → Delivery method

sale of goods

services rendered

IFRS →

- The risk and reward of ownership is transferred.
- There is no continuing control or management over the goods sold.
- Revenue can be reliably measured.
- There is a probable flow of economic benefits.
- The cost can be reliably measured.

- The amount of revenue can be reliably measured.
- There is a probable flow of economic benefits.
- The stage of completion can be measured.
- The cost incurred and cost of completion can be reliably measured.

US.GAAP →

- realized or realizable and earned.
- There is evidence of an arrangement between the buyer and seller.
- The product has been delivered or the service has been rendered.
- The price is determined or determinable.
- The seller is reasonably sure of collecting money.

Revenue确认→Long term contract

LT contract 计算	Condition	Methods	
	<ul style="list-style-type: none"> Projects of long-term contract. Reliable estimates of the revenues, costs and completion time. 	GAAP	<ul style="list-style-type: none"> Percentage-of-completion method
		IFRS	
	<ul style="list-style-type: none"> Projects of long-term projects. Outcome of the project cannot be reliably estimated. 	GAAP	<ul style="list-style-type: none"> Completed contract method
		IFRS	<ul style="list-style-type: none"> Revenue is recognized to the extent of contract costs. Costs are expenses when incurred Profits are recognized only at completion

不同方法对财务指标影响★★★

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

Revenue确认 → Installment contract

a firm finances a sale and payments are expected to be received over an extended period

GAAP	Collectability cannot be reasonably estimated.	Installment sales method (与POC类似)	<ul style="list-style-type: none"> Profit is recognized as cash is collected Profit is equal to cash collected during the period multiplied by the total expected profit as a percentage of sales Used in limited circumstances, eg. sale of estate or other firm assets
	Collectability is highly uncertain.	Cost recovery method (Similar to the completed contract method)	<ul style="list-style-type: none"> Sales are recognized when cash is received Profit is recognized only when cash collected exceeds costs incurred.
IFRS	Outcome can be reliably estimated	<ul style="list-style-type: none"> The discounted present value of the installment payments is recognized at the time of sale. The difference between the installment payments and the discounted present value is recognized as interest over time 	
	Outcome cannot be reliably estimated	<ul style="list-style-type: none"> Revenue recognition under IFRS is similar to cost recovery method 	

Revenue确认→Barter Transactions

避免round-trip transaction

U.S. GAAP	IFRS
<ul style="list-style-type: none">• can be recognized at fair value only if the firm has historically received cash payments for such goods and services and can use this historical experience to determine fair value.• Otherwise, the revenue is recorded at the carrying value of the asset surrendered.	<ul style="list-style-type: none">• Revenue must be based on the fair value of revenue from similar nonbarter transactions with unrelated parties

Revenue确认→Gross and Net Reporting of Revenue

- **Gross revenue** → the selling firm reports sales revenue and cost of goods sold separately. → Profit is the same, sales are higher using gross revenue reporting.
- **Net revenue** → only the difference in sales and cost is reported.

↓
U.S. GAAP. → 必须gross revenue

- Be the primary obligor under the contract.
- Bear the inventory risk and credit risk.
- Be able to choose its supplier.
- Have reasonable latitude to establish the price.

2. Expenses

具体存货处理、折旧等后续章节展开

- Expenses are the amounts incurred to generate revenue and include cost of goods sold, operating expenses, interest, and taxes.
- Expenses are grouped together by their nature or function.

Matching principle →

Expenses are recognized in the same period as the revenue

3. Non-Recurring Items ★ ★

Above
the line

**Unusual or
infrequent items**

reported “above the line” and presented on a pretax basis

- G/L from the sale of assets or part of a business
- Impairments, write-offs, write-downs, and restructuring costs.

**Extraordinary
items**

presented on net of tax

- Loss from expropriation of assets;
- Gains or losses from early retirement of debt;
- Uninsured losses from natural disasters

Below
the line

**Discontinued
operations**

• presented on net of tax

- 资产决定处置到实际处置期间产生的income/loss

**Accounting
changes**

- Change in accounting principle (might be retrospective);
- Change in accounting estimate (prospective and not a below line item).

4. EPS ★★★

计算

Basic EPS

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

- **New issue, repurchase** → **weighted by time (days or months)**
- **stock dividend/split** → not weighted by time, adjust the number of common share before the stock dividend or split

Diluted EPS

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

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

4. Comprehensive income ★

Comprehensive income

Net income

OCI

- Foreign currency translation gains and (losses)
- Adjustment for minimum pension liabilities
- Unrealized g/l from cash flow hedging derivatives
- Unrealized g/l from available for sale securities

5. Profit Margin

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

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

Reading 26

Understanding the B/S

B/S作用 → assess a firm's liquidity, solvency, and ability to make distributions to shareholders

B/S上面科目

Assets

流动性下降

Liabilities

Current assets	Cash and equivalents
	Accounts receivable
	Inventory
	Prepaid expenses
	Short term investments
	Other current assets
Non current assets	Property , plant and equipment (PP&E)
	Intangible assets
	Long term investments
	Deferred tax assets
	Pension assets



Current liabilities	Bank overdraft
	Accounts payable
	Accrued expenses
	Unearned revenue
	Current portion of long term debt
	Current taxes payable
long – term liabilities	Notes payable
	Bonds payable
	Capital / Financial lease obligations
	Pension liabilities
	Deferred tax liabilities

Stockholders' equity

Capital	Common stock , preferred stock
Additional paid-in-capital	<ul style="list-style-type: none">• Capital in excess of par i.e. premium
Treasury stock	<ul style="list-style-type: none">• Stock has been reacquired by the issuing firm but not yet retired• No voting rights, no dividend
Retained earnings	<ul style="list-style-type: none">• Net Income – Dividend
Accumulated other comprehensive income	<ul style="list-style-type: none">• Foreign currency translation gains and losses.• Adjustments for minimum pension liability.• Unrealized gains and losses from cash flow hedging derivatives.• Unrealized gains and losses from available-for-sale securities
Minority interest / Non-controlling interest	<ul style="list-style-type: none">• Group accounting

Financial asset

	Held-to-Maturity	Available-for-sale	Trading Securities
B/S初始计量	Amortized cost	Fair value	Fair value
期间收益→interest	I/S	I/S	I/S
期间收益→Dividend	无→只有debt才是	I/S	I/S
期间收益→Realized G/L	I/S	I/S	I/S
期间收益→Unrealized G/L	无，不按Fair value调整	B/S→OCI	I/S

Reading 27

Understanding the C/F

CF/S作用



- Information about a company's cash receipts and cash payments during an accounting period.
- Information about a company's operating, investing, and financing activities.
- An understanding of the impact of accrual accounting events on cash flows

CF/S数据来源



I/S
B/S变化



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

常见现金流

CF	Inflows	Outflows
CFO	<ul style="list-style-type: none"> •Cash collected from customers •Sale proceeds from trading securities •Interest received •Dividend received 	<ul style="list-style-type: none"> •Cash paid to employees and suppliers •Acquisition of trading securities •Interest paid •Taxes paid •Cash paid for other expenses •Purchase trading
CFI	<ul style="list-style-type: none"> •Sale proceeds from fixed assets •Sale proceeds from debt & equity investments •Principal received from loans made to others 	<ul style="list-style-type: none"> •Acquisition of fixed assets •Acquisition of debt & equity investments •Loans made to others
CFF	<ul style="list-style-type: none"> •Principal amounts of debt issued •Proceeds from issuing stocks 	<ul style="list-style-type: none"> •Principal paid on debt •Payments to reacquire stock •Dividends paid to shareholders

IFRS vs US.GAAP ★

Items	U.S. GAAP	IFRS
Interest received	CFO	CFO or CFI
Interest paid	CFO	CFO or CFF
Dividends received	CFO	CFO or CFI
Dividends paid	CFF	CFO or CFF
Taxes paid	CFO	CFO, CFI or CFF
Bank overdrafts	CFF	Cash equivalents
Disclosure	<ul style="list-style-type: none"> • Encourage direct method, but allows indirect method • If direct method presented, footnotes must provide indirect method. 	<ul style="list-style-type: none"> • Encourage direct method, • but permits either method • IFRS permits more flexibility in reporting

CF计算★

CFO计算→

Direct Method
Indirect Method

CFI 计算→

Direct Method

CFF计算→

Direct Method

CFO计算★★★

Indirect method

Direct method

Net income
+ Non-cash expenses or losses
- Non-cash revenues or gains
+/- Non-operating items
-Increase in non-cash operating asset accounts (Inventory, A/R)
+Increase in operating liability accounts (A/P)
=CFO

Cash received from customers	Opening A/R + net sales – Closing A/R=Net sales- Δ A/R
- Cash paid to suppliers	Opening A/P + COGS – Closing A/P= - COGS + Δ A/P+Depreciation included in COGS (COGS = Opening Inventory + purchase – Closing Inventory)
- Cash paid to employees	Opening wage payables + wage expense – Closing wage payables =-wage expense+ Δ wage payables
- Interests paid	Opening interest payables + interest expense – Closing interest payables=- interest expense + Δ Interest payables
- Tax paid	Opening tax payables + income tax expense – Closing tax payables = - income tax expense + Δ tax payables
= CFO	

CFI计算

Cash used in purchase of fixed assets	<ul style="list-style-type: none">• Pay attention to the movement of fixed assets.• $\text{Book Value} = \text{Carrying value} = \text{Purchase cost} - \text{AD} - \text{Impairment}$• $\text{BV end} = \text{BV Begin} + \text{Purchase} - \text{Disposal BV} - \text{Depreciation}$
Proceeds received from sale of fixed assets	<ul style="list-style-type: none">• $\text{Gain or loss} = \text{proceeds received} - \text{disposal NBV}$• Gain or loss resulting from disposal of PP&E or other long term assets are NOT presented in the CFI, but in gain or loss.

CFF计算

Review long-term debt and stock	<ul style="list-style-type: none">• Increases supply cash and decreases use cash.
Dividend paid	<ul style="list-style-type: none">• $\text{Dividend paid} = - \text{Dividend declared} + \Delta \text{dividend payables}$• $\text{Opening R/E} + \text{Net Income} - \text{Dividend declared} = \text{Ending R/E}$

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

Free Cash Flow

分类



- Free cash flow to firm (FCFF)
- Free cash flow to equity (FCFE)

$$\text{FCFF} = \text{NI} + \text{NCC} + [\text{Int} * (1 - \text{tax rate})] - \text{FC Inv} - \text{WC Inv}$$

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

Reading 28

Financial Analysis Techniques

财务分析工具



Ratio analysis

Common – size analysis

Graphical analysis

Regression analysis



Stack column graph

Line graph

Ratio analysis ★

1. Activity ratio ★

A firm's efficiency in using assets to generate revenue

Inventory	A/R	A/P
Inventory turnover = COGS / average inventory	Receivables turnover = Net revenue / average A/R	Payables turnover = Purchase / average A/P
Average inventory processing period = 365 / inventory turnover	Average receivables collection period = 365 / receivables turnover	Average payment period = 365 / payables turnover
Operating cycle = collection period + inventory period		
Cash conversion cycle = collection period + inventory period - payment period. → 属于 liquidity ratio		
Total asset turnover	net revenue / average total assets	
Fixed asset turnover	net revenue / average net fixed assets	
Working capital turnover	net revenue / average wc	

2. Liquidity Ratios

A firm's ability to pay short – term debt

Current ratio	Current assets / Current liabilities
Quick ratio	$[\text{cash} + \text{marketable securities} + \text{receivable}] / \text{Current liabilities}$ $= [\text{current asset} - \text{inventories}] / \text{Current liabilities}$
Cash ratio	$[\text{cash} + \text{marketable securities}] / \text{Current liabilities}$
Defensive interval	$(\text{cash} + \text{marketable securities} + \text{receivables}) / \text{average daily expenditures}$
Cash conversion cycle	Days of sales outstanding + days of inventory on hand – number of days of payable

3. Solvency Ratios

A firm's ability to pay long – term debt

Leverage	Debt-to-equity ratio	D / E
	Debt-to-capital	$D / (D + E)$
	Debt-to-assets	D / A
	Financial leverage	A / E
Coverage	Interest coverage	$\text{EBIT} / \text{Interest}$
	Fixed charge coverage	$(\text{EBIT} + \text{lease payments}) / (\text{Interest} + \text{lease payments})$

4. Profitability Ratios

A firm's ability to generate profits

Profit / Net revenue	Gross profit margin	Gross profits / net revenue
	Operating profit margin	EBIT / net revenue
	Pretax margin	EBT / net revenue
	Net profit margin	NI / net revenue
Profit / Capital	ROA	[NI + interest (1-t)] / average total assets
	Operating return on assets	EBIT / average total assets
	Return on total capital (ROTC)	EBIT / average total capital
	ROE	NI / average total equity
	Return on common equity	(NI- Preferred Dividend) / average common equity

ROE来源分析 → DuPont analysis

三分解

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

五分解

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

5. Valuation ratios

Equity analysis	基本ratio分析→Equity中还有	P/E P/CF P/B P/S
	特殊行业指标	Net income per employee Growth in same-store sales Sales per square foot
Credit analysis	Interest coverage ratio	EBIT / Interest
	Return on capital	EBIT / average total capital
	Debt - to - asset ratio	D/A
	Z- score	$Z = 1.2 A + 1.4 B + 3.3 C + 0.6 D + 1.0 E$
Business risk	CV sales	Sales标准差/mean sales
	CV operating income	operating income标准差/mean operating income
	CV net income	NI标准差/mean NI



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Reading 29

Inventories

$$\text{COGS} = \text{beginning inventory} + \text{purchases} - \text{ending inventory}$$

当发生存货相关支出时

Capitalizing → 计入B/S

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

Expensing → 计入I/S

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

存货的期间计量

计量关键

概念

GOGS → I/S
Inventory → B/S

Inventory cost flow method

- Specific identification
- FIFO ★
- LIFO ★ → IFRS 不允许
- Weighted average cost

盘存方法

掌握影响，掌握计算期末Inventory与其间COGS

FIFO and specific identification	periodic or perpetual system 不影响期末Inventory与COGS计量
LIFO and weighted average cost	periodic or perpetual system 计量结果不同

LIFO与FIFO对报表影响★★★ 掌握影响→前提★：物价上涨&存货上升

	LIFO	FIFO→与LIFO反过来
COGS	Higher	Lower
taxes	Lower	Higher
EBIT & EAT	Lower	Higher
inventory balances	Lower	Higher
cash flows ★	Higher → Tax少，只有存货不同计量方法影响CF	Lower
net and gross margins	Lower	Higher
current ratio	Lower	Higher
inventory turnover	Higher	Lower
D/A and D/E	Higher → 原理：inv↓→A↓; COGS↑→NI↓→E↓	Lower

存货后续调整→减值

区别
★★★

IFRS



Cost vs NRV

Lower

→ $\text{NRV} = \text{sales price} - \text{selling cost}$

减值可转回，最高到减值前

US
GAAP



Cost vs Market

Lower

Market = replacement cost

↓ 判断

$\text{NRV} - \text{normal profit margin} < \text{replacement cost} < \text{NRV}$

不可减值转回

存货计量方法调整

多数情况 → retrospectively

特例：由其他方法转成LIFO时 → prospectively

Reading 30

Long-Lived Assets

Capitalize or expense

花掉一笔钱 → **Expense** → 一次在I/S中处理掉, 属CFO 区别
Capitalize → 计入B/S资产, 属CFI。之后逐年在I/S中处理

↓ 常见处理

Interest Capitalizing

R&D Cost

Depreciation

Impairment

leases

Spending
Expenditure

→ 未来有潜在收益?

→ Yes → B/S



Non current
assets

current assets



Inventory → COGS

Tangible assets → depreciation

Intangible assets → Amortization

→ NO → I/S

→ I/S项目

Capitalizing vs. expensing

对财务指标影响★

	Items	Capitalizing	Expensing
B/S	Shareholders' equity	Higher→NI高&A高	Lower
I/S	Income variability	Lower→平摊到之后每年	Higher
	Net income—first year (ROA & ROE)	Higher→一次费用少	Lower
	Net income—last year (ROA & ROE)	Lower→逐年折旧费用高	Higher
CF/S	Total cash flow★	Same	Same
	CFO	Higher→支出计入CFI	Lower
	CFI	Lower→支出计入CFI	Higher
Ratio	Leverage ratios (debt/equity & debt/assets)	Lower→E高	Higher
	Interest coverage (subsequent years)	Lower→EBIT小	higher

常见处理

Interest Capitalizing

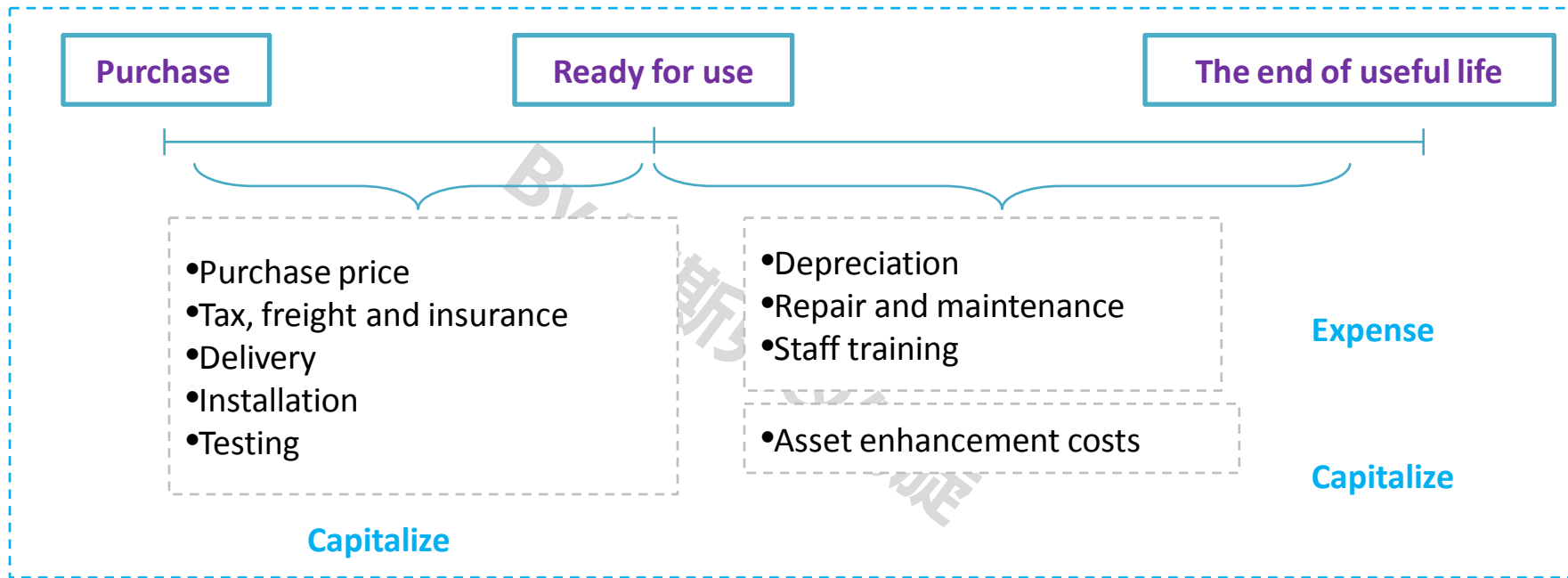
专指在建工程的贷款利息资本化

Items	First Year	Later Year
Interest expense	No impact	No impact
Net Income	↑	↓
CFO	Overstate	
CFI	Understate	
Income statement impact	No impact	建好后持有→Depreciation↑ 建好后出售→COGS↑
Interest coverage★	计算角度：↑ 概念角度：No impact→分析师认为利息支出 应是CFO，undo分类后与费用化相同	↓

这里大小是与费用化利息比较★★★

Tangible assets ★ ★

有形资产的资本化与费用化



Depreciation

折旧方法	计算
Straight line	$\text{depreciation expense} = \frac{\text{original cost} - \text{salvage value}}{\text{depreciable life}}$
DDB	$\text{depreciation in year } x = \frac{2}{\text{depreciable life}} \times BV \text{ at the beginning of year } x$
Units-of-production	$\text{depreciation in year } x = \frac{\text{original cost} - \text{residual value}}{\text{life in output units}} \times \text{output units in the period}$

折旧对财务指标影响（早期）★→晚期反过来

	Straight line	Accelerated (DDB)
Depreciation expense	Lower	Higher
Net income	Higher	Lower
Assets	Higher	Lower
Equity	Higher	Lower
ROA	Higher	Lower
ROE	Higher	Lower
Total asset turnover ratios	Lower	Higher
Cash flow	Same	Same

有形资产减值处理

	cost model	revaluation model
IFRS	OK	OK
US.GAAP	OK	No

↓
cost model(基于BV) ★

准则	区别
IFRS	<p>减值判断→一步法</p> <ul style="list-style-type: none">•carrying (book) value > recoverable amount →永续经营vs 清算假设<ul style="list-style-type: none">•<i>carrying (book) value = original cost - accumulated depreciation</i>•<i>recoverable amount = max (fair value less any selling costs, value in use)</i><ul style="list-style-type: none">•<i>Value in use = DCF value</i> <p>减值处理: Asset(BV) is written-down recoverable amount</p> <p>减值reverse: loss can be reversed (最多回到减值前BV)</p>
US.GAAP	<p>减值判断→二步法</p> <ul style="list-style-type: none">•Recoverability:<ul style="list-style-type: none">•<i>carrying (book) value > the asset's future undiscounted cash flow stream</i>•Loss measurement:<ul style="list-style-type: none">•<i>减值处理: loss = carrying value - fair value of the asset (or DCF Value)</i> <p>减值reverse: loss recoveries are prohibited →例外: long-lived assets held for sale</p>

减值对财务指标影响★

Cash flow	No effect
Assets	Decrease
DTL	Decrease
DTA	Increase
Stockholder's equity	Decrease
Current net income, ROA,ROE	Decrease
Future net income, ROA,ROE	Increase
Depreciation expense	Decrease
Future asset turnover ratios	Increase
Debt/equity ratio	Increase

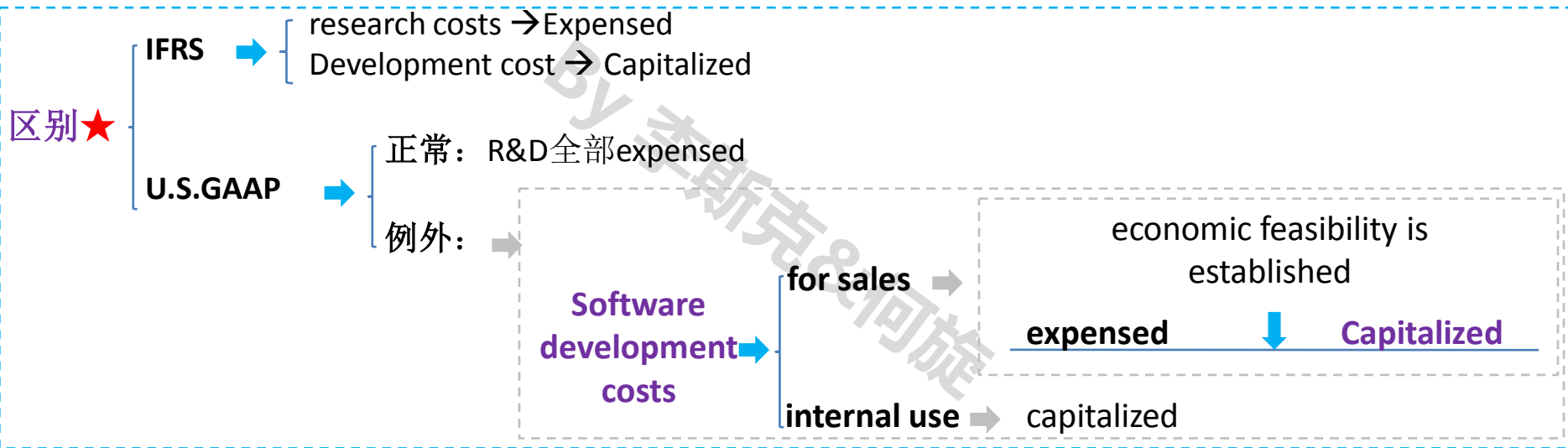
Intangible assets

Identifiable IA	Unidentifiable IA	Internally generated
<ul style="list-style-type: none">•Can be purchased separately<ul style="list-style-type: none">•e.g. Patents, Trademarks, Copyright purchased externally•Some have a finite useful life and others have an indefinite useful life	<ul style="list-style-type: none">•Cannot be purchased separately and may have an indefinite life<ul style="list-style-type: none">•e.g. Goodwill	<ul style="list-style-type: none">•Cannot be capitalized on B/S<ul style="list-style-type: none">•e.g. R&D under U.S. GAAP
Capitalized on the B/S		•Expensed as incurred

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

IA with an indefinite Useful life - Annual impairment test

R&D Cost



Investment property

IFRS	<ul style="list-style-type: none">• A firm generally must use the same valuation model (cost or fair value) for all of its investment properties.• If a fair value for the property can be established reliably, the firm could use a cost model or a fair value model when valuing investment property
US.GAAP	<ul style="list-style-type: none">• does not distinguish investment property from other kinds of long-lived assets

Fair Value Model

Transfer To or From Investment Property

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

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Income Taxes

Terminology

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

↓

DTA & DTL产生原因→税务局报表与企业报表不同

Temporary difference→将来回转，只有这种才有递延所得税

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

↓

Reversal of temporary difference

DTL	Unlikely to be reversed	Equity
	To be reversed	true liability
	Non-reversal/ reversal is uncertain	Ignored
DTA	If <50% probability to be reversed → Valuation allowance is created	DTA= DTA – valuation allowance

For assets = accounting base – tax base

For liabilities = (- accounting base) – (-tax base)

Positive figure × tax rate = DTL

Negative figure × tax rate = DTA

Asset不同来源

Depreciable NCA	<ul style="list-style-type: none"> Accounting base → Original cost – accumulated accounting depreciation Tax base → Original cost – accumulated tax depreciation
R&D	<ul style="list-style-type: none"> Accounting base (Expensed as incurred) → Zero Tax base (Capitalized) → Original cost - accumulated amortization
A/R	<ul style="list-style-type: none"> Accounting base → Invoiced amount – allowance for bad debt Tax base → Invoiced amount (do not recognize allowance)
Financial assets	<ul style="list-style-type: none"> Accounting base → Fair value Tax base → Amortized cost

Liability不同来源

Customer advance	<ul style="list-style-type: none"> Accounting base (accrual accounting) → Unearned revenue treat as a Liability Tax base (cash accounting) → Revenue is recognized no liability arise → Zero
Warranty liability	<ul style="list-style-type: none"> Accounting base (accrual accounting) → A liability is recognized for future obligation Tax base (cash accounting) → Recognize a expense when a cash outflow incurred → Zero
Financial liabilities	<ul style="list-style-type: none"> Accounting base → Fair value Tax base → Amortized cost

$$\text{Income tax expense} = \text{Current tax expense} +/- \text{Deferred tax expense / income}$$

$$\text{Taxable income} \times \text{Current tax rate}$$

$$\Delta \text{DTL Or } \Delta \text{DTA}$$

If tax rate changes

$$\text{New DTA or DTL} = \text{old DTA or DTL} \times \frac{\text{new tax rate}}{\text{old tax rate}}$$

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

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Non-current (long term) liabilities

1. Bond

与fixed income部分结合

会计计量★

CF/S

CF/S影响	CFF	CFO
Issuance of debt	Increased by cash received	No affect
Periodic interest payment	No affect	Decreased by interest paid
Payment at maturity	Decreased by face value→三种放行方式使得初始金额与面值不同	No affect

I/S

Issue at par	Issue at premium	Issue at discount
Market rate=coupon rate	Market rate<coupon rate	Market rate>coupon rate
Interest expense=coupon rate × face value	Interest expense=cash paid – amortization of premium	Interest expense=cash paid + amortization of premium
Interest expense is constant	Interest expense decreases over time	Interest expense increases over time

B/S

Issue at par	Issue at premium	Issue at discount
Carried at face value	Face value + premium Decreased as amortized	Face value – discount Increased as amortized

Other points of debt

Issuance Costs

U.S. GAAP	issuance costs are capitalized as an asset (deferred charge) and allocated to the income statement as an expense over the term of the bond.
IFRS	the initial bond liability on the balance sheet is reduced by the amount of issuance costs, increasing the bond's effective interest rate. In effect, issuance costs are treated as unamortized discount.
both U.S. GAAP and IFRS	bond issuance costs are usually netted against the bond proceeds and reported on the cash flow statement as a financing cash flow

Fair value reporting option → 利率改变导致bond value改变

Bond value = A present value of future cash flows

U.S. GAAP & IFRS

- A option to report debt at its market /fair value with any gains/losses reported in the Income statement
- For analysis, the market value is more appropriate

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

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

Derecognition of Debt → redeem bonds before maturity

原因 →

- Interest rates reduction
- Firm has generated surplus cash through operation
- Funds from the issuance on the equity market is available

A gain or loss is recognized in I/S

Debt Covenant

affirmative covenants	<ul style="list-style-type: none">• the borrower promises to do certain things, such as:<ul style="list-style-type: none">• Make timely payments of principal and interest.• Maintain certain ratios (such as the current, debt-to-equity, and interest coverage ratios) in accordance with specified levels.• Maintain collateral, if any, in working order.
negative covenants	<ul style="list-style-type: none">• the borrower promises to refrain from certain activities that might adversely affect its ability to repay the outstanding debt, such as:<ul style="list-style-type: none">• Increasing dividends or repurchasing shares.• Issuing more debt.• Engaging in mergers and acquisitions.

2. Lease

基本概念

两个参与主体 →
 { Lessee
 Lessor

Lease种类 →
 { Operating lease
 Finance lease (IFRS)/ Capital lease (U.S.GAAP)

分类标准★

1.Lessee分类标准

IFRS与US.GAAP不同

准则	Finance lease	Operating lease
IFRS	Transfers from lessor to lessee substantially all the risks and rewards incidental to ownership of an asset.	A lease other than a finance lease.
US.GAAP	A lease transaction can be classified as a Finance lease by lessee if meet at least one of the following criteria ①The title is transferred to lessee at the end ②A bargain purchase option exists. ③The lease period is at least 75% of the asset's economic life. ④The present value of the lease payments is equal to or greater than 90% of the fair value of the leased asset.	A lease not meeting any of those criteria is classified as an Operating lease

2.Lessor分类标准

IFRS与US.GAAP相似（只是叫法不同，这里以US.GAAP为例）

Lessee是Operating lease

➡ Lessor也是Operating lease

Lessee是Finance lease

➡ { Lessor是Operating lease → 不满足条件
Lessor是Capital lease → 满足条件

{ sales-type lease
direct-finance lease

↓
条件

- Collectability of lease payment is reasonably certain
- The lessor has substantially completed performance

↓
会计计量

会计计量→1.Lessee计量 计算

	Financial Lease→等同于贷款买设备	Operating Lease
B/S-inception	Leased asset = Lease liability = PV of Minimal lease payment (MLP) •MLP = Future lease payment over lease term	No effect
B/S-periodic payment	Leased asset → Depreciation over lease term Lease liability → interest expense & principal repayment	No effect
I/S-periodic payment	•Interest expense is separated from the lease payment •Deprecation both recognized in the income statement	Lease payment is recognized as a rental expense in I/S
CF/S	•Principal repayment – CFF •Interest expense – CFO→US.GAAP中Int偿还计入CFO	CFO

对财务指标影响★★★

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

Ratio★	Finance Lease	Operating Lease
Current ratio (Current liab)	Lower	Reverse
Working capital (Current liab)	Lower	
Asset turnover (Asset)	Lower	
ROA (in early years) (Net income)	Lower	
ROE	Lower	
Debt/asset (Liab)	Higher	
Debt/equity(Liab)	Higher	
Interest coverage ratio	Lower	

会计计量→2.Lessor计量→Capital lease 概念为主

Lessor → Capital lease

→ sales-type lease → 对Dealer, 有profit
 → direct financing lease → 对金融机构, 无profit

	Sales-type lease	Direct-financing lease
At inception- I/S	<ul style="list-style-type: none"> •Sales = PV of MLP (lease receivable) <ul style="list-style-type: none"> •Discount rate = The interest rate implicit in the lease •COGS = Cost of assets – PV of salvage •Profit = Sales – COGS 	No profit is recognized.
At inception- B/S	Net investment in lease = PV of MLP + PV of salvage value	Net lease receivable = cost of assets
Periodic - I/S	Interest revenue = implicit interest rate * net lease receivable at the beginning of the period	
At inception- Cash Flow	No effect	
Periodic - Cash Flow	CFO – inflow CFI – inflow	

会计计量→2.Lessor计量→ Operating lease 概念为主

- I/S → lease payment as rental income.
- B/S → keep the leased asset on B/S and depreciate it over its useful life

operating lease 与 direct
financing lease 区别★



- Total income 相同
- 早期 direct financing lease 高

结论

3. Pension

DB	DC
<ul style="list-style-type: none"> the firm promises to make periodic payments to employees after retirement. The benefit is usually based on the employee's years of service and the employee's compensation at, or near, retirement. 	<ul style="list-style-type: none"> firm contributes a sum each period The firm's contribution can be based on any number of factors, including years of service, the employee's age, compensation, profitability, or even a percentage of the employee's contribution.

DB Plan在B/S上计量

Plan Assets

Fair value at the beginning of the year

(+) Employer Contributions

(+) Actual return

(-) Benefit paid to employee

= fair value at the end of the year

PBO

PBO at the beginning of the year

(+) Service cost

(+) Interest cost

(+) Past service cost (plan amendments during the year)

(+) Actuarial losses

(-) Actuarial gains during the year

(-) Benefit paid to employee

= PBO at the end of the year

Difference is funded status of the plan

Plan asset > PBO → Overfunded plan

Plan asset < PBO → Underfunded plan

IFRS and US GAAP要求

Funded status计入公司B/S

Surplus → net pension asset

Deficit → net pension liability

科目	计量
Current service cost	<ul style="list-style-type: none">• The present value of benefits earned by the employees during the current period<ul style="list-style-type: none">• US. GAAP与IFRS相同，都计入I/S
Interest cost	<ul style="list-style-type: none">• increase in the PBO due to the passage of time<ul style="list-style-type: none">• IFRS: net pension liability/asset \times discount rate of pension liability \rightarrow net interest expense/income is recognised in P&L \rightarrow asset return=liability折现率• US. GAAP: PBO \times discount rate \rightarrow asset与liability分开考虑
Expected return on plan asset	<ul style="list-style-type: none">• IFRS: 无这一项，因为假设asset return=liability折现率，直接体现在net expense/income上• US.GAAP: 资产有单独的return，抵减interest cost

科目	计量
Amortization of actuarial gains and losses	<ul style="list-style-type: none"> •actuarial gains and losses计入OCI→产生原因： <ul style="list-style-type: none"> •An increase or decrease in the PBO from a change in actuarial •difference between the expected return and actual return on plan assets •Amortization of actuarial gains and losses: <ul style="list-style-type: none"> •IFRS: 不摊销 •US GAAP: amortized using the corridor approach→actuarial gains and losses exceed 10% of the greater of the beginning PBO or plan assets, amortization is required
Amortization of past service costs	<ul style="list-style-type: none"> •past service costs→the amount by which a company's pension obligation relating to employees' service in prior periods changes as a result of plan amendments or a plan curtailment <ul style="list-style-type: none"> •IFRS: past service costs are recognised as an expense in P&L→不摊销 •US GAAP: 计入OCI→摊销

Reading 33

Financial Reporting Quality

The quality of financial reports → 两个评估维度

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

Aggressive and conservative accounting

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



Motivation for manipulation

Net income

Overstate NI	Understate NI
<ul style="list-style-type: none">• Meet earnings expectation• Remain in compliance with debt covenants• Receive higher incentive compensation	<ul style="list-style-type: none">• Obtain trade relief• Negotiate favorable repayment term from creditors• Negotiate favorable labor union contracts

Balance sheet

more solvent	enhance its performance ratios
<ul style="list-style-type: none">• Overstating Assets or understating Liabilities to appear more solvent• e.g. Lower D/E ratio	<ul style="list-style-type: none">• Understating Assets or overstating Liabilities to enhance its performance ratios• e.g. Higher ROA, ROE, Asset turnover ratio

Revenue recognition

Issues	Range of problems	Warning sign
Revenue misstatement	Bring forward or delay the revenue recognition	Large changes in account associated with A/R, unearned revenue, etc. (large increases in A/R, large decreases in unearned revenue)
Accelerating revenue	<p>Accelerate the recognition of revenue by reporting revenue in current period that should be reported in future when it's hard to assess the progress of earning.</p> <p>To analyze the ratio of revenue to cash collected from customers is a good way to detect acceleration of revenue recognition.</p>	<ul style="list-style-type: none"> ▪ Significant revenue without cash collection; ▪ Seeking for additional financing; ▪ Significant options vested by management. ▪ Maintain its track record of successively meeting analyst forecasts
Nonrecurring or non-operating as revenue	Report the non-recurring items or non-operating gain as revenue.	Temporal inconsistency with respect to the included revenues and expenses in a company's definition of operating income

Expense recognition

Issues	Range of problems	Warning sign
Understating expenses(see example 4)	<ul style="list-style-type: none">▪ Aggressive depreciation or amortization method and assumptions;▪ Un-recorded allowance for obsolete inventories	<ul style="list-style-type: none">▪ Ratios of depreciation;▪ Inventory turnover ratios;
Deferring expenses	Improper capitalization of cost which should be expensed.	<ul style="list-style-type: none">▪ Track growth in net non-current assets
Ordinary as nonrecurring or non-operating (see example 5 and 6)	Report the ordinary expenses or cost as non-recurring items or non-operating losses.	Check ratio: $(\text{sales} - \text{COGS} - \text{SG\&A}) / \text{sales}$

Manipulation of Cash flows

→ Management may manipulate cash flows to inflate sustainable CFO

Stretching Accounting payable	Delay payment to suppliers → CFO↑
Financing Accounts payable	Manage timing of CFO
Securitizing Accounts receivable	Sale A/R → CFO↑
Repurchasing stock to offset dilution	Option exercise → CFF↑ Repurchase to offset dilution → CFF

Accounting warning signs

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

Reading 34

Financial Statement Analysis: Applications

Financial statement analysis

Ratio analysis	Credit analysis
A company's future income and cash flow can be projected by forecasting future sales	<ul style="list-style-type: none">•Character•Collateral•Capacity to pay



两家公司比较

Adjustments for comparison

Investments in Securities

- **IFRS** → unrealized gains and losses on available-for-sale debt securities that result from exchange rate fluctuations are recorded on the income statement
- **U.S. GAAP** → an analyst should subtract (add) this component of unrealized gains (losses) from the net income of the IFRS firm to improve comparability.

Inventory Accounting Differences

- The LIFO reserve, which all LIFO firms must report, can be used to adjust LIFO cost of goods and inventory to their FIFO-equivalent values.

Off-Balance-Sheet Financing

- Debt ratios should include liabilities for both capital (finance) leases and operating leases

Differences in Depreciation

- Over an asset's life, differences between depreciation methods, estimates of useful lives, and estimates of salvage values used by otherwise comparable firms can lead to significant differences in reported income and balance sheet asset values.
- Note as well that upward revaluation of fixed asset values is permitted under IFRS but not under U.S. GAAP.

Goodwill

- First, goodwill should be subtracted from assets when calculating financial ratios.
- Second, any income statement expense from impairment of goodwill in the current period should be reversed, increasing reported net income

Other Intangible Assets

- Additional adjustment may be required for IFRS firms that revalue intangible assets upward, which is not permitted under U.S. GAAP.
- Analysts should also note that a firm's pre-and post-acquisition financial statements may lack comparability when the acquisition method is used. The acquisition method combines fair value estimates of identifiable assets with historical asset costs on the balance sheet and adds the earnings of the purchased firm with no restatement of prior results



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